

COMMERCIAL LINE

# DUPLEX Multi



Alupera®

## DUPLEX Multi

Compact ventilation units in the DUPLEX line are used for comfortable ventilation, hot-air heating and cooling for small offices, stores, retail stores, school buildings, restaurants, etc. The units are highly versatile thanks to their excellent compactness, high efficiency of heat recovery, low energy consumption and minimal noise level.

**DUPLEX Multi** units represent the best of what ATREA has to offer to ventilate residential and commercial buildings.

This unit line follows up to a very successful line DUPLEX-S and it offers a wide range of versatile ventilation units with air performance from 500 to 11 000 m<sup>3</sup>/h. The philosophy of these units is based on several possibilities of configuration and absolute variability. The units are exclusively tailored according to the requests and needs of individual projects. Superior construction of the units is suitably completed with the latest control system with the Internet connection.

### DUPLEX Multi

(floor-standing, under-ceiling and flat version)



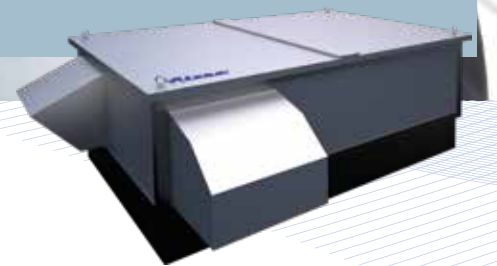
### DUPLEX Multi-V

(upright version)



### DUPLEX Multi-N

(rooftop version)



**ATREA** was started as a private company in 1990 in the Czech Republic. Very shortly it began to focus on the production of ventilation units with waste heat recovery. The company's founder has authored many authorship certificates, patents and industrial designs in this field.

ATREA's high quality products started to make their mark also in the demanding markets of Western Europe. The economic and geographic proximity led ATREA to focus primarily on the German market where it has established itself really well as a result of a good partnership and top-quality products, with the Netherlands, Switzerland, UK, Italy, Slovenia and other countries to follow.

## ATREA'S PRODUCT RANGE

- Commercial ventilation
  - air handling units from 500 – 15 000 mc/h
- Residential ventilation
  - air handling units from 180 – 500 mc/h
- Kitchen ventilation
  - whole area ventilation ceilings and kitchen hoods
- Passive houses by ATREA

For more information please visit [www.atrea.eu](http://www.atrea.eu)



## DUPLEX Multi / Multi-N / Multi-V

- Heat recovery efficiency up to 93 %  
– superior counter-flow heat exchanger
- Very flat design, suitable even for ceiling-suspended mount
- Highly variable
- Compact and semi-compact design
- Elegant look
- Integrated heating and cooling possibility
- Floor-standing, ceiling-suspended and floor-standing flat version
- The units meet requirement in accordance with Commission regulation (EU) No. 1253/2014 (Ecodesign)
- Internet interface as standard (aMotion)
- A major decrease in servicing costs
- Touchscreen controller
- EC type fans – top German quality
- Smart phones application
- LCC – life cycle cost programme
- BMS compatibility
- Hygiene version according to VDI 6022
- 100 % by-pass
- Air circulation mode
- Constant airflow and pressure control



### DUPLEX Multi due to their excellent parameters are intended for all types of facilities

- **Offices** – DUPLEX Multi for their compact dimensions could be easily fit into narrow HVAC rooms.
- **Sports complex** – take advantage of top performance for airing tennis halls, gyms, fitness centers and other sports facilities.
- **Apartment blocks** (central ventilation) – possibility of central ventilation by means of intelligent management, significant savings in investment costs.
- **Changing rooms** – DUPLEX Multi line is compact with small dimensions and low noise. That offers the possibility to install directly into changing rooms, such as ceiling-suspended.
- **Commercial kitchen** – modern DUPLEX Multi units in combination with UV-C filtration provides superior parameters and several times longer system life.
- **Conference halls** – units are suitable for meeting areas.
- **Restaurants** – use the zone ventilation for central ventilation with single central unit for restaurant and kitchen.



Versatile ventilation units **DUPLEX 500–11000 Multi** due to their superb capabilities destined for wide use in all types of buildings.

These units are characterized by a very steep characteristic and very low power consumption – thanks to a top EC fans.

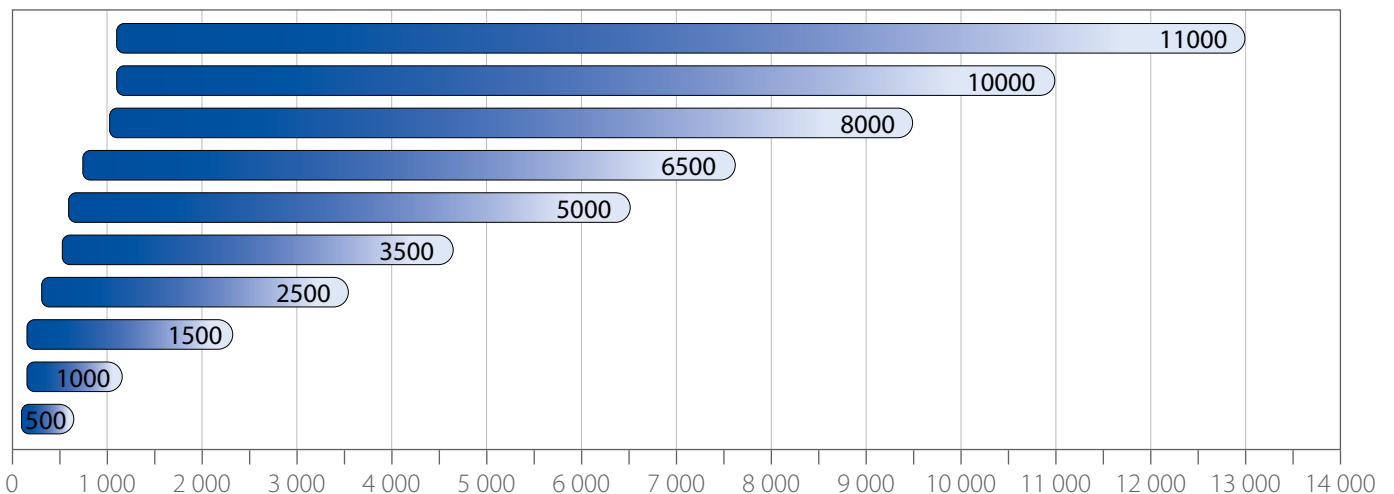


## DUPLEX Multi

**Universal indoor version s** with floor-standing, under-ceiling and floor-standing flat installation

- ▣ Heat recovery efficiency up to 93 %
- ▣ Tailored according to customer requirements
- ▣ Compact and semi-compact design
- ▣ Integrated heating and cooling
- ▣ Internet interface as standard (aMotion control system only)
- ▣ Smart phones application
- ▣ The units meet requirement in accordance with Commission regulation (EU) No. 1253/2014 (Ecodesign)
- ▣ BMS compatibility
- ▣ Hygiene version according to VDI 6022
- ▣ EC type fans – top German quality
- ▣ Great thermal characteristics
- ▣ Circulation damper
- ▣ 100 % by-pass
- ▣ Constant airflow control
- ▣ Constant pressure control

## DUPLEX Multi performance graphs



# DUPLEX Multi

500, 1000, 1500, 2500, 3500, 5000, 6500, 8000, 10000, 11000



## DUPLEX Multi

### DUPLEX Multi

floor-standing version (500–11000 Multi)



under-ceiling version (500–8000 Multi)



flat version (1500–6500 Multi)



### DUPLEX Multi

dimensions



<p>1600 mm    384 mm</p> <p>765 mm</p> <p><b>DUPLEX 500 Multi</b></p>	<p>1800 mm    384 mm</p> <p>970 mm</p> <p><b>DUPLEX 1000 Multi</b></p>	<p>2300 mm    455 mm</p> <p>1600 mm</p> <p><b>DUPLEX 1500 Multi</b></p>	<p>2300 mm    580 mm</p> <p>1600 mm</p> <p><b>DUPLEX 2500 Multi</b></p>	<p>2300 mm    665 mm</p> <p>1600 mm</p> <p><b>DUPLEX 3500 Multi</b></p>
<p>2500 mm    885 mm</p> <p>1600 mm</p> <p><b>DUPLEX 5000 Multi</b></p>	<p>2500 mm    1065 mm</p> <p>1600 mm</p> <p><b>DUPLEX 6500 Multi</b></p>	<p>2500 mm    1 290 mm</p> <p>1600 mm</p> <p><b>DUPLEX 8000 Multi</b></p>	<p>3370 mm    1620 mm</p> <p>1795 mm</p> <p><b>DUPLEX 10000 Multi</b></p>	<p>3370 mm    2100 mm</p> <p>1795 mm</p> <p><b>DUPLEX 11000 Multi</b></p>



Versatile ventilation units **DUPLEX 1500–8000 Multi-V** brings the innovation mainly in placement of spigot in top casing panel.

Unique design with spigots up neatly solves the sometimes problematic connection of air ducts and opens up new possibilities of unit installation into usually unusable space.



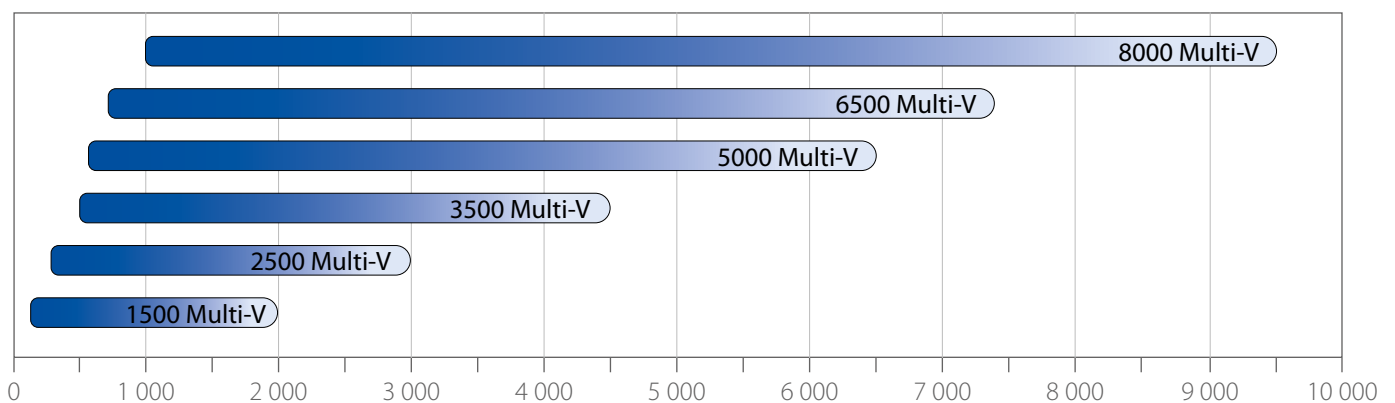
## DUPLEX Multi-V

### Upright version with 4 spigots up – great for tight spaces

- Heat recovery efficiency up to 93 %
- Tailored according to customer requirements
- Great compactness
- Integrated heating and cooling
- Internet interface as standard (aMotion control system only)
- Smart phones application
- The units meet requirement in accordance with Commission regulation (EU) No. 1253/2014 (Ecodesign)
- BMS compatibility
- Hygiene version according to VDI 6022
- EC type fans – top German quality
- Great thermal characteristics
- Circulation damper
- 100 % by-pass
- Constant airflow control
- Constant pressure control
- Upright version with 4 spigots up

## DUPLEX Multi-V

### performance graphs



# DUPLEX Multi-V

1500, 2500, 3500, 5000, 6500, 8000



## DUPLEX Multi-V

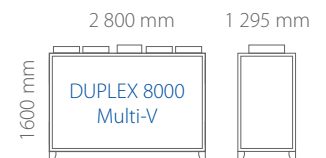
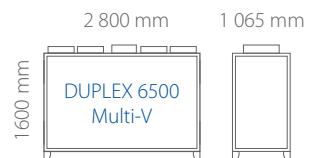
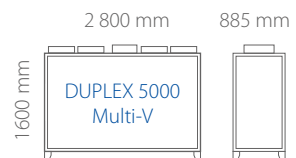
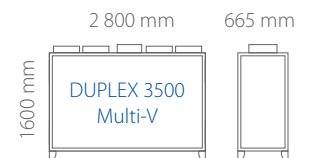
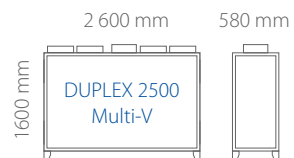
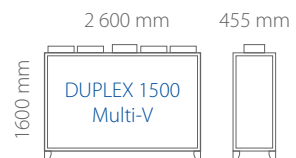
### DUPLEX Multi-V

upright version



### DUPLEX Multi-V

dimensions





Compact versatile ventilation units **DUPLEX 1500–11000 Multi-N** are thanks to their construction fully adapted for rooftop installation.

Installing the base-frame, in combination with direct penetrations of air ducts through the roof provides the most effective solution, not only in terms of heat loss, but also does not disrupt the building appearance (available only for DUPLEX 1500–8000 MultiEco-N).

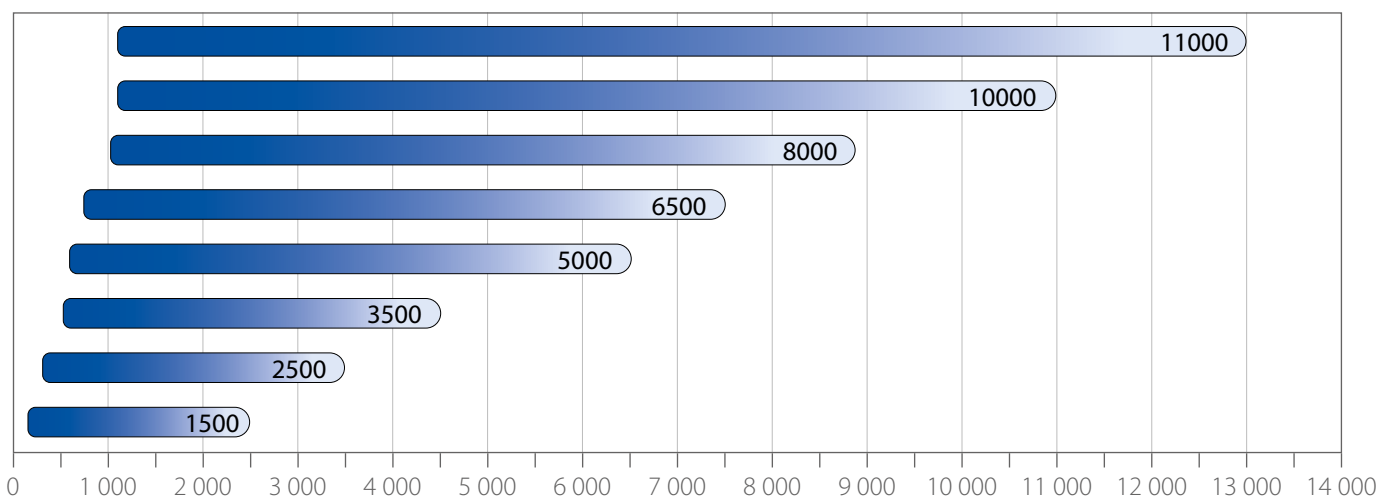


## DUPLEX Multi-N

### Rooftop configuration with unique duct connection from bottom

- Heat recovery efficiency up to 93 %
- Tailored according to customer requirements
- Compact and semi-compact design
- Integrated heating and cooling
- Internet interface as standard (aMotion control system only)
- Smart phones application
- BMS compatibility
- The units meet requirement in accordance with Commission regulation (EU) No. 1253/2014 (Ecodesign)
- Hygiene version according to VDI 6022
- EC type fans – top German quality
- Great thermal characteristics
- Circulation damper
- 100 % by-pass
- Constant airflow and pressure control
- Crane transport ready
- Easy access service doors
- Built-in control system

### DUPLEX Multi-N performance graphs





# DUPLEX Multi-N

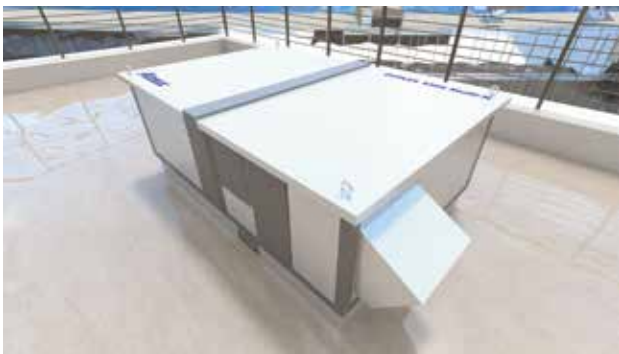
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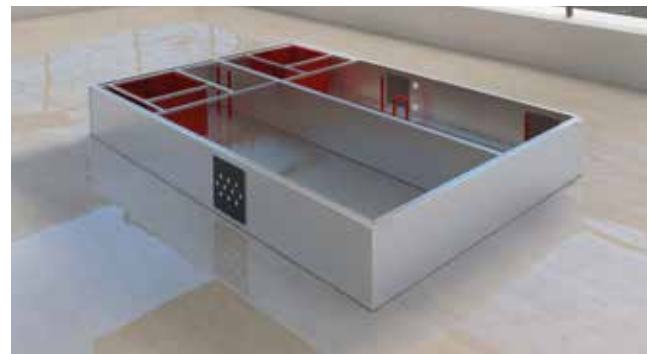
## DUPLEX Multi-N

### DUPLEX Multi-N

rooftop version (DUPLEX 1500–8000 Multi-N)

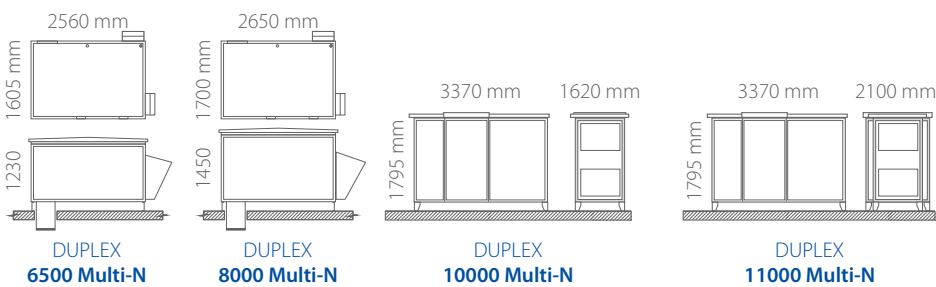
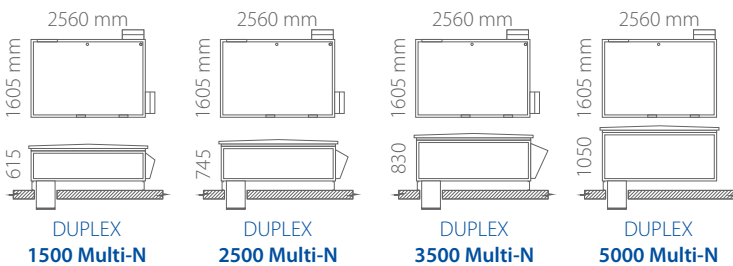


Base-frame ATREA (DUPLEX 1500–8000 Multi-N)



### DUPLEX Multi-N

dimensions





## DUPLEX Multi



### SELLER CONTENT POLICY

#### 1. Three basic lines based on installation –

- DUPLEX 500–11000 **Multi** – floor-standing, under-ceiling and flat version
- DUPLEX 1500–8000 **Multi-V** – upright version
- DUPLEX 1500–11000 **Multi-N** – rooftop version

**2. Excellent design** – the units are designed in a very attractive design with a continuous emphasis on the maximum level of comfort of installers. All the components are easily accessible in the unit.

**3. 93 % heat recovery efficiency** – brand new S3 and S7 ATREA plate counter-flow exchangers enable to achieve excellent heat recovery efficiency thus consequently reduces the energy costs.

**4. 100 % customization** – Multi line air handling units follow the business philosophy of multiple variability. Designers can easily modify spigot connections, filters, heating, cooling or the position of the units themselves. Thus this unique variability in construction gives a competitive advantage because can meet requirements of almost any project.

**5. Excellent compactness** – one of the biggest ATREA advantages. DUPLEX Multi units are so compact that these enable installation on spaces with limited installation possibilities. **Simply – with great performance ATREA saves the space.**

**6. Integrated heating and cooling** – all components are neatly included in the units so that installation and eventual servicing is as easy as possible.

**7. Floor-standing, ceiling-suspended and flat positions** – DUPLEX Multi can be installed in any possible position – floor-standing, underceiling, flat, horizontal with left or right configuration and possible roof-top sister product line.

(\*) with aMotion control system

**8. Internet interface as a standard** – ATREA provides its products with internet connection as standard! Thus no extra expenses are needed. Via its built-in web server the units can be remotely controlled through the Internet which gives great marketing argument for your customers. (\*)

**9. A major decrease in servicing** – the standard internet connection in ATREA units means not only comfort and a remote control option for the user, but also greatly simplified, more convenient and significantly cost-saving servicing. All this makes the subsequent operation of the units vastly cheaper. (\*)

**10. Smart phones application** – ATREA follows the modern trends and provides application that is iPhone and Android compatible. Thus a client can control all parameters of ATREA units easily with his cell-phone. (\*)

**11. LCC** – life cycle cost programme – innovative help in business argumentation against cheap low quality units. Easily but on a high-professional way designed software that will prove economic return based on the exact calculation.

**12. BMS compatibility** – communication with a higher-ranking system for BMS is a matter of course. As standard via Modbus TCP, optionally via BACnet or KNX protocols.

**13. VDI 6022 hygienic design** – the unit meets all requirements of key certification for hygiene versions under German standard VDI 6022 that start being internationally relevant. The Multi units can therefore be successful in projects whose specifications require a healthy, clean and easy to maintenance product.

**14. Ecodesign** – the units meet requirement in accordance with Commission regulation (EU) No. 1253/2014 (Ecodesign).

# DUPLEX Multi / Multi-N / Multi-V

## MANAGER CONTENT POLICY

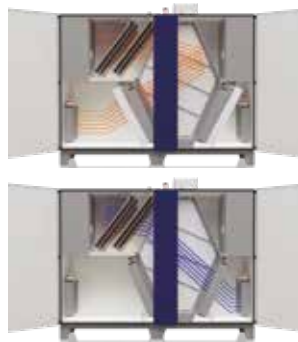
### Up to 93 % heat recovery efficiency

Plastic plate turbulent counter-flow heat recovery cores by ATREA enable to achieve a great level of heat recovery and subsequent cost savings.



### Circulation / 100 % by-pass valve

Circulation valve used for mixing exhaust and supply air, by-pass damper allows supply of fresh, cold and filtered air to the building.



### Web server (\*)

A web server that allows running the unit over the Internet to drastically reduce the cost of servicing and indirectly also the market entry price of the unit.



**1. Absolute customization** – the great variety of possible construction including all needed positions gives a great advantage to place the units in any project.

**2. Short delivery time** – despite the 100 % customization the delivery time is 3 weeks and earlier.

**3. Vast reduction in servicing costs** – Control via the Internet enables easy servicing including error message history, firmware updates and information on the current settings of the unit. As a result the time costs of the servicing department are vastly reduced.

**4. LCC – life cycle cost programme** – helps with the reasonable and exact argumentation in communication with your customers.

**5. ATREA selection software** – All advantages are supported by the company's major marketing tool – its proprietary design software to help your clients design HVAC equipment easily, intuitively and efficiently. At the same time the software is used to efficiently check various designs for correctness and completion.

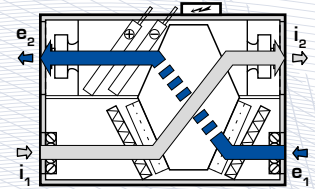
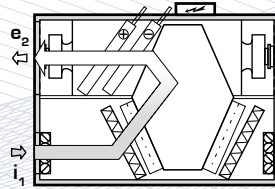
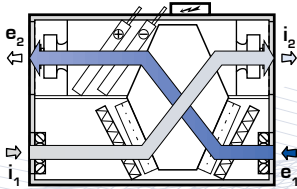
(\*) with aMotion control system



# ENGINEERING Multi

## Equal pressure ventilation

1. Ventilation with heat recovery with re-heating (with cooling)
2. Circulation heating or cooling
3. Ventilation without heat recovery (via bypass)



## OPTIONAL ACCESSORIES

### MULTI MEANS MULTIPLE CONFIGURATION

DUPLEX Multi units are based on multiple configuration options and absolute customization. They are tailored to the needs and requirements of individual projects.

- **The nominal working point of the Multi inside series is:** 500 (370 Pa), 1.000 (330 Pa), 1.500 (400 Pa), 2.500 (350 Pa), 3.500 (300 Pa), 5.000 (300 Pa), 6.500 (250 Pa), 8.000 (300 Pa), 10.000 (400 Pa), 11.000 (400 Pa)
- **Casing** – 30 mm thick PIR (polyisocyanurate) or 45 mm thick mineral wool sandwich panels ensure great insulation and acoustic properties.
- **Filters ISO Coarse 90 % / ePM10 50 % / ePM1 55 %** – Cassette filters, easy to replace thanks to the ingeniously designed clips. The unique design allows filtration through the filter frame as well.
- **5 temperature and 6 pressure sensors inputs** – A wide range of temperature, air and pressure sensing options, fully compatible with ATREA's own control system aMotion.
- **Easy access** – the hinged door opens fully for easy access to all equipment sets of the unit. They enable easy installation and any servicing of the unit.

- **Servo drives** – Top quality Belimo servo drives.
- **Low noise** – Very good acoustic properties of our units can be defined for various working points in our design software.
- **Automatic frost protection** – An option to rearrange fan operation or the unit can be provided with an EPO-V electrical pre-heater (see Accessories).
- **Constant flow** – The units can be equipped with accessories supplied to enable constant flow control.
- **Constant pressure** – Multi series units can also be provided with accessories for a constant pressure mode.



**Heating** – DUPLEX Multi offers wide variety of heating possibilities. It can be provided with external electrical preheaters or integrated water heaters or external electrical reheaters.



**Cooling** – built-in water or direct evaporator (heat pump mode).



## SELECTION SOFTWARE

[www.atrea.com](http://www.atrea.com)

ATREA offers its proprietary design software that is a highly useful and practical tool to select DUPLEX series units and provides great marketing support!

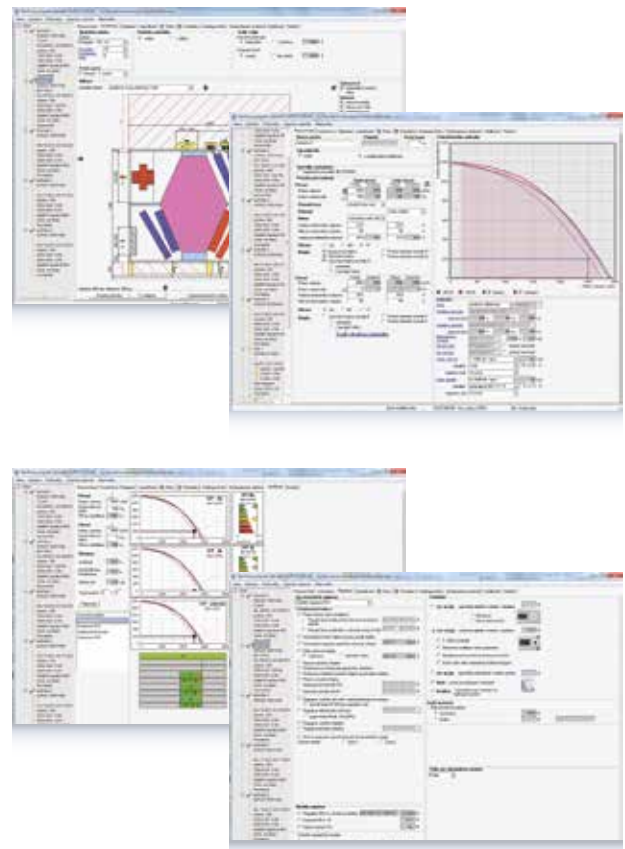
**Very positive feedback from designers of all over Europe gives a good opportunity to easily include ATREA's units in all kinds of projects.**

Very detailed calculations on all specifications are standard.

The software checks whether all components were selected and whether the selected system is working. This way you can avoid any possible mistakes.

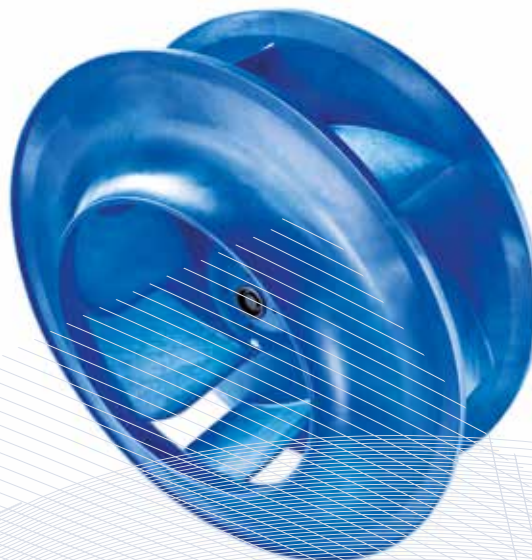
### It includes:

- Selecting a unit and its accessories
- Showing parameters of the selected appliance
- An option to adjust the various parameters, designs or mounting positions of the units
- Selecting the control system with accessories in a functional set
- Electrical wiring diagrams
- Displaying and printing the components installed, an h-x diagram and HVAC diagrams
- Price specifications of individual components
- Print output to a printer or PDF
- Exporting drawings and diagrams to DXF in 2D or 3D
- Sending the design and export by e-mail
- **Additionally, the design software includes a full catalogue of ATREA's products in PDF format.**



## EC type FANS

Fans from the world's top producer Ziehl Abegg and EBM-PAPST. The outstanding German quality helps eliminate servicing costs. Multi units use backward bending blades fans to ensure great SFP ▶



## OPTIONAL ACCESSORIES

### mounted and connected

#### By-pass damper

facility provides a flow of cool, fresh and filtered air into the property.



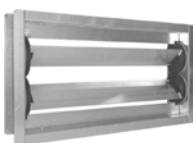
#### Circulation damper

with motorized damper.



#### Shut-off dampers

Shut-off dampers to be fitted on the suction port (the unit's inlet). The dampers are supplied with a conventional servo drive or a servo drive type with an emergency shut-off function in case of power cuts.



#### Air filtration

As standard DUPLEX Multi series units are provided with G4 / G4 cassette filters. An M5 or F7 filter class can be ordered separately.



#### RE-TPO Control manifolds for hot-water air heaters

They are intended to control the heating performance of the hot-water heaters. They always consist of a three-speed pump, two shut-off ball valves and a three- or four-way mixing manifold with a Belimo servo drive.



#### EPO-V electrical pre-heaters

EPO-V electric pre-heaters that ensure frost protection of the heat recovery exchanger when equal-pressure ventilation is permanently required. They are installed in a duct on the fresh air inlet side of the unit ( $e_1$ ).



#### Flexible flanges

Flexible flanges to be fitted on both circular and rectangular ports in sizes corresponding to the unit's port.



#### T hot water air heater

Hot-water heaters integrated in the unit. For systems up to 110 °C and 1,0 Mpa. Special design suitable for low-temperature sources (i.e. Heatpumps).



## FLOOR-STANDING, CEILING-SUSPENDED, AND FLAT POSITIONS

DUPLEX Multi units can be provided in under-ceiling version that enables great variety of spigot connections. ▶



## OPTIONAL ACCESSORIES

### Inclined manometers

A filter accessory for the easy visualisation of current pressure loss of the filters. Inclined manometers are mandatory for the hygiene version of the units under VDI 6022.



### Spare filter cassettes

Spare filter cassettes in sizes according to the type of the unit. Supplied with G4, M5 and F7 class filters.



### EPO-V electrical re-heaters

Heaters to be installed in circular or rectangular ducts connected to DUPLEX units.



### CHF direct cooler

Direct coolers to be installed in the unit.



### CHW chilled water cooler

Chilled water air cooler built-in in the unit.



### R-CHW control manifolds for chilled water coolers

They are designed to control the cooling performance of chilled water coolers.



### Constant flow and pressure control





## ENGINEERING Multi



### CPM CONTROL SYSTEM

#### CPM control system with CP 10 RA controller basic controller

- Manual or automatic mode
- Continuous fan control
- Automatic by-pass damper control
- Anti-freeze heat recovery exchanger protection
- Switching of external electric or built-in water heater
- Switching for selected performance according to an external signal
- Automatic operation according to sensors (CO<sub>2</sub>, RH) with 0–10 V output
- Control of the intake and outlet lock dampers
- Settings for minimum and maximum allowed revs
- Optional connection of CO<sub>2</sub> or rH sensor – max. 2 sensors with a switch or 0–10 V output
- Outputs for electric preheater and heater control (pulse 10 V) or hot-water control (0–10 V)

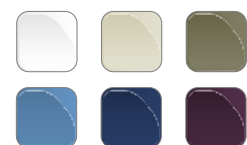
#### CPM control system with CPM controller comfortable controller

- + Graphic touchscreen controller
- + Weekly program
- + “Party” mode – when a higher ventilation performance is requested
- + “Vacation” mode – automatic activation and deactivation according to a set date
- + Warns when the filters need to be changed
- + Automatic operation on a constant output signal – e.g. constant pressure control

#### CP 10 RA controller



#### CPM controller



CPM color variations



# DUPLEX Multi



## aMotion CONTROL SYSTEM

„high-tech“ control system line with all comfort and possibilities

### ● aTouch and aDot controllers (touchscreen)



### ● Control via internet



### ● Smartphone application



### INTEGRATED WEB SERVER AS STANDARD \*

A service technician is able to remotely check the setting, check any defect and promptly fix the problem.

- Remote software update with preserving user settings.
- Show error messages, including history.
- Intuitive and user friendly interface with display both basic and servis parameters.

### Various functions of the aMotion control system:

- **Constant flow** – An option to fit sensors for constant flow control.
- **Constant pressure** – An optional accessory for constant pressure control.
- **CO<sub>2</sub> sensors, relative humidity sensors and air quality sensors** – An option to set the intensity of ventilation automatically based on those parameters.
- **Modbus TCP** – Communication with a higher-ranking system for BMS.
- **User preferences** – including setting weekly programmes for ventilation, heating and cooling modes. Immediate manual override settings for more convenience to the user as well as weekly programme control.
- **External inputs function** – ventilation switches as required.
- **Combined heating and preheating** (electrical or water based)
- **Zoning** – the ability to split the building into zones and define their operation.
- **BACnet / KNX** – optional converter enables connection to the superior system via BACnet or KNX protocol.

(\*) with aMotion control system



# BUSINESS Multi



## Why DUPLEX Multi?

**E** **Easy** – Easy to integrate in the project.

**M** **Multiple** – Multiple customized design.

**C** **Compact** – Multi is small and compact – a great advantage for the ceiling-suspended position.

**E** **Efficient** – However compact, Multi is perfectly efficient – up to 93 % of heat recovery efficiency.



- With very short delivery time



- With two kinds of control system – high demand aMotion or economical CPM control system

**Multi Is the Way**





# ENGINEERING Multi

## Perfectly isolated (class T2)

construction with minimal thermal bridges: 500–8000 Multi **TB1**, 10000–11000 Multi **TB2**.

## Integrated heaters and coolers

with aluminium fins and copper tubes.

## Safety switch

to shut off the power in case of emergency.

## aMotion control system

with internet and BMS connection as a standard.

## CPM control system

with touchscreen or mechanical controller.

## The new generation of counter flow heat exchanger

exceed with the thermal efficiency up to 93 %.

## High grade filters

ISO Coarse 90 % / ePM10 50 % / ePM1 55 %

provide an ultra hygienic indoor climate and protect the heat exchanger from contaminator.

## Pressure Sensors

for filter monitoring.

**Built-in** temperature sensors for the fully automatic operation.

## Air recirculation section

with motorized damper.

## Condensate drain

for floor standing installation.

## 100% Summer by-pass

facility provides a flow of cool, fresh and filtered air into the property.

## Base frame

ensures stable and rigid design.

## Sealing material

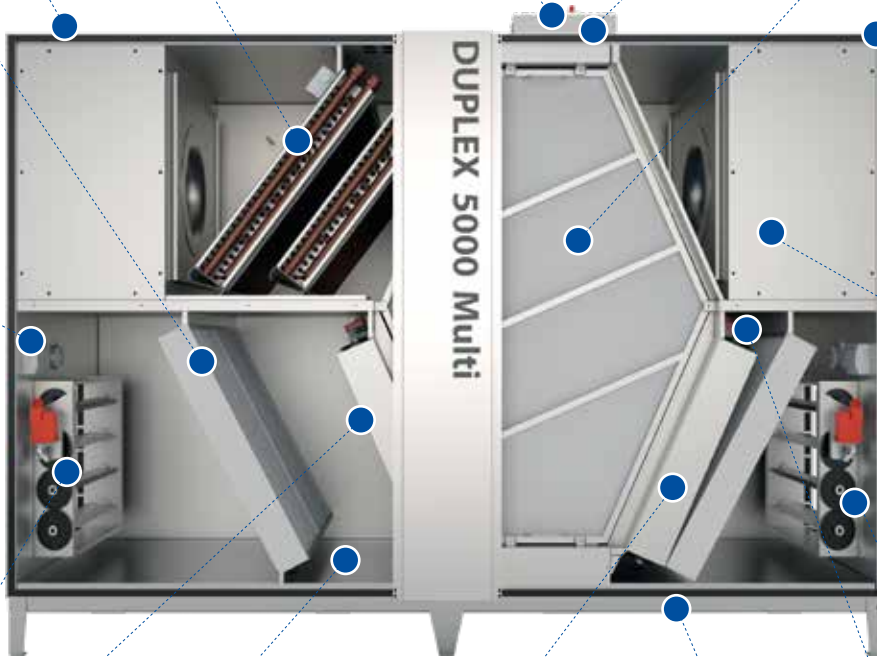
according to VDI 6022.

**Low energy**, maintenance free EC fan technology ensures long term savings on operating costs.

**Shut-off dampers** tightly close inlets.

## High quality servo drives

enable steady function of by-pass and circulation dampers.





**ATREA s.r.o.**  
Československé armády 32  
466 05 Jablonec nad Nisou  
Czech Republic

email: [atrea@atrea.eu](mailto:atrea@atrea.eu)