



# CrossStar

Energy saving supply and exhaust unit  
with rotary recuperator

## CAPACITY

1000 m<sup>3</sup>/h – 14 000 m<sup>3</sup>/h



### Area of usage:

public buildings such as schools, nursery schools, offices, banks, restaurants, shops, houses and other facilities where savings due to minimal energy consumption are important.

### Advantages



#### Saves up to 85% of energy

and operating costs due to the most energy-efficient components.



#### Does not require commissioning works.

It is enough to connect the installation to the electric network and mount the air duct system.



#### Built-in automation.

The controllers and all control elements are already set up and ready to go. The units are equipped with flow / pressure support sensors.

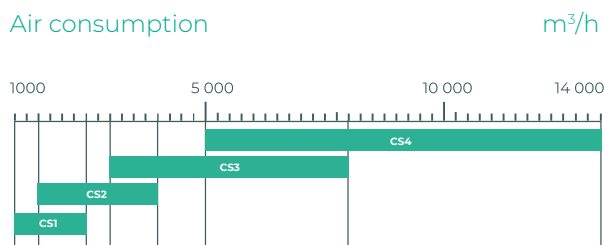


#### Comfortable control and management.

Control the unit at any time from anywhere in the world with all convenient devices.



### Standard model range is presented with 4 standard sizes:



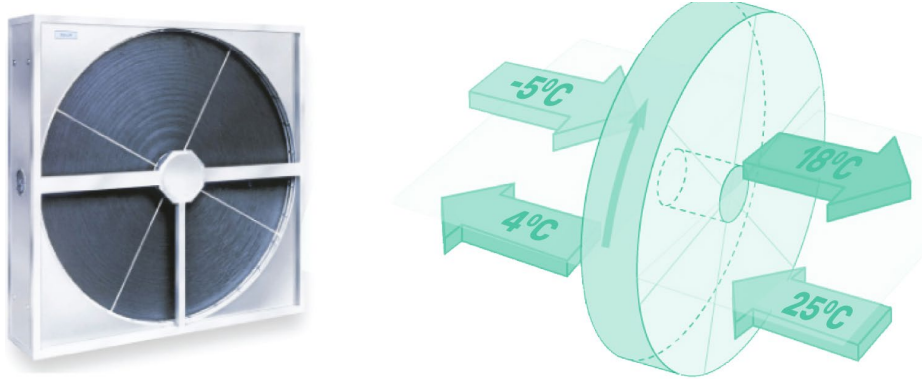
### TECHNICAL PARAMETERS

| TECHNICAL DATA                                           |                             | CS-1           | CS-2           | CS-3           | CS-4           |
|----------------------------------------------------------|-----------------------------|----------------|----------------|----------------|----------------|
| AIR CONSUMPTION, m <sup>3</sup> /h                       |                             | 600 – 1 800    | 1 500 – 3 600  | 3 000 – 7 900  | 5 000 – 14 000 |
| Dimensions of the unit                                   | Horizontal design HxWxL, mm | 1000x1030x1448 | 1100x1130x1448 | 1360x1440x1885 | 1890x1920x1885 |
|                                                          | Vertical design HxWxL, mm   | 1000x1030x1885 | 1100x1130x1885 | 1360x1440x2512 | 1890x1920x2512 |
| Height of the frame, mm                                  |                             | 85 / 200       |                |                |                |
| Connection sizes of the unit                             | Horizontal design, mm       | 930x400        | 1030x450       | 1340x580       | 1820x845       |
|                                                          | Vertical design, mm         | 400x250        | 500x300        | 700x400        | 800x700        |
| Maximum power consumption without additional options, kW |                             | 1,1            | 5,1            | 7,9            | 11,0           |

## OPERATION PRINCIPLE

### Operation without heater during transition period up to -5 °C

The unit does not require additional heating of air in the range up to -5 °C of external air at a temperature of the exhausted air about 25 °C.



### Expanding of operating range

CrossStar unit in a basic configuration provides fresh air with acceptable parameters almost all year round.

At «peak» summer loads conditioning mode can be realized with the help of built-in reversible freon heat exchanger or optionally with freon or water cooler from the channel series of the equipment.

At low temperatures, comfortable conditions are achieved by built-in water heater or optionally by channel electric or water heater.



## BASIC CONFIGURATION

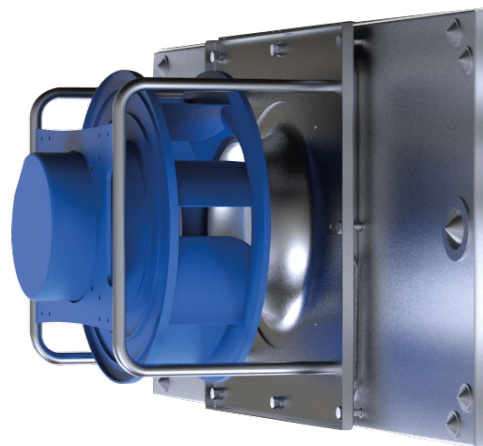
### EC-MOTOR

Brushless synchronous motor with electronic control highly reduces noise level.

- Complies with the ErP 2015 Directive

**EC-electric motor with efficiency above 90% saves at least 30% more electricity than AC motor.**

- High working pressure: up to 2500 Pa.
- Wide range of rated voltage: 200-277V an 380-480V +/-15%
- **Long service life: more than 80 000 hours of continuous operation.**
- Built-in EMC filter protects against phase loss and low voltage in the network.
- Protection against overheating of the motor and electronics, and protection against rotor lock.



- No starting currents.
- The absence of the frequency converter saves installation space.
- Allows reduction of the fan capacity up to 10%.
- EC-motor is optionally equipped with MODBUS RTU protocol.

*\*Option. Use of Flow Grid technology: air flow rectifier*

### POCKET FILTER

The pocket design guarantees the increase of filtration area and provides maximum efficiency of dust collection.

**Filtration class acc. to ISO16890:**  
**Coarse, ePM10, ePM2.5, ePM1**



### IMPELLER

- Ultralight composite material ZAmid.
- 3D blades in the form of water drops.
- Profiled blade.
- Low tonal noise.

### INNOVATIVE CASE WITH PVC-PROFILE

- Minimal energy losses per square meter of surface.
- Improved thermal insulation.
- Increased mechanical strength.

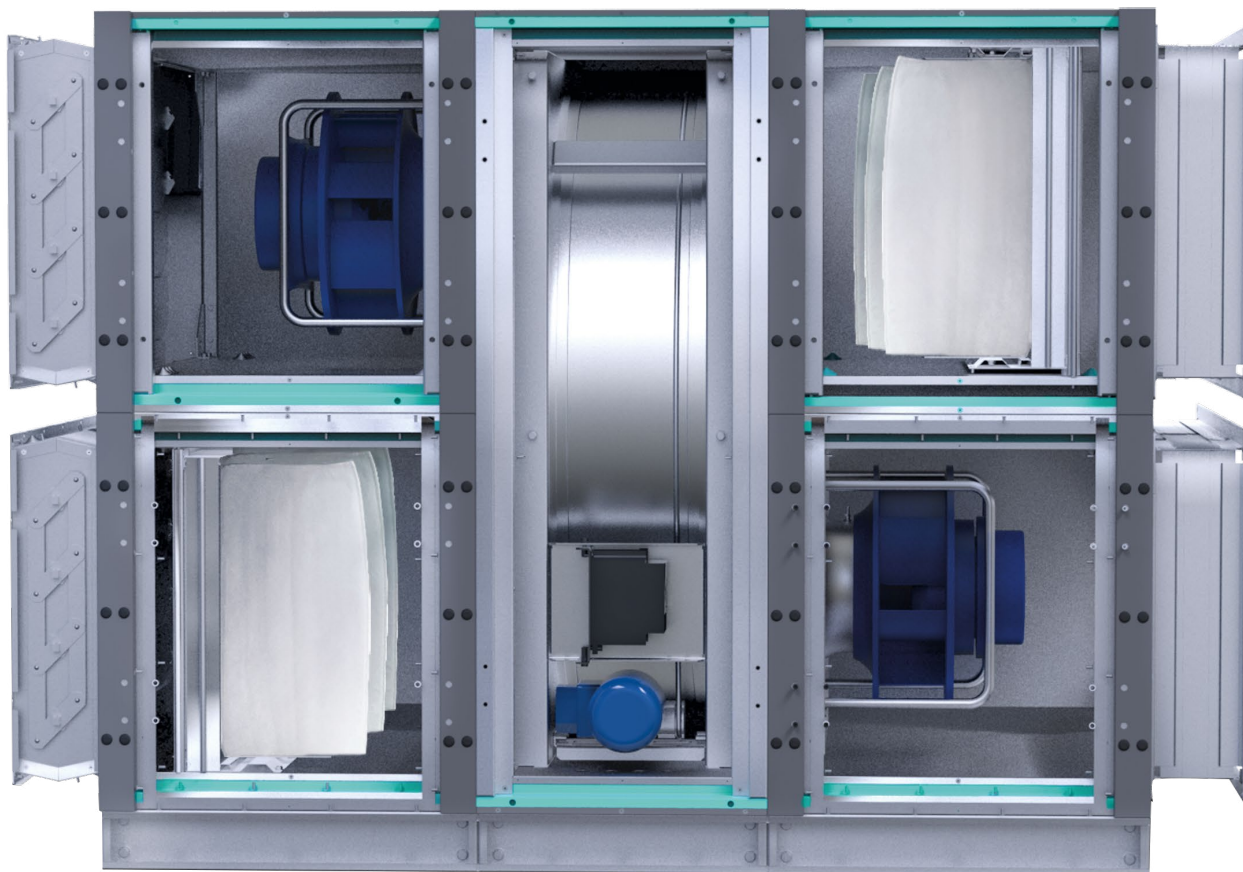
## BASIC CONFIGURATION

### ROTARY RECUPERATOR

In rotary recuperators, heat transfer from the exhaust air to the supply air is carried out by means of a movable matrix with different types of coatings. The matrix of the rotary recuperator consists of two layers of aluminium foil, smooth and corrugated, alternately applied to each other. The recovery efficiency will vary depending on the height of the corrugated tape, as well as the speed of rotation of the wheel.

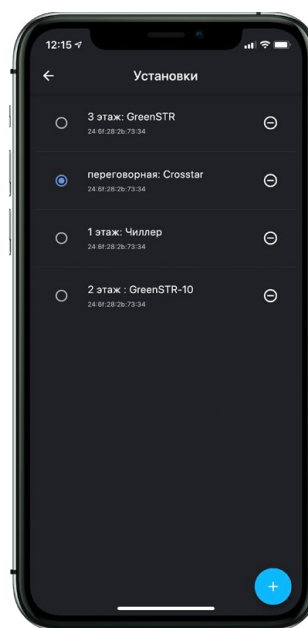
**Reduction of heat exchange areas and rotation speed of 10 rpm allows reducing of energy consumption by 80%.**

- Foil thickness: from 1.4 to 1.8 mm.
- Height of foil waves: from 1.6 to 2.5 mm.
- Efficiency: up to 88%, depending on the size and operating parameters.
- Recuperation depends on the temperature difference between the outside and exhaust air.
- Equipped with a highly efficient brush seal.
- Electric drive with a variable speed of rotation for maintenance of maximum efficiency and regulation of the degree of energy utilization.



## CONTROL

- + Switching ON and OFF the unit from the control panel.
- + Automatic pressure maintenance with the function of automatic reduction of productivity at low temperatures of outside air.
- + Regulation of power of electric preheating at low outside air temperatures.
- + Automatic reduction of fan speed in case of insufficient preheating power.
- + The function of heating of air (at choice: water or electric heating) is provided in the controller.
- + The heating temperature is set during adjustment in the range from +16 to +26 °C.
- + Connection of electric drives of air gates is provided.
- + Input for alarm signal from the fire alarm system is provided.
- + Relay input for connection of the sensors of CO<sub>2</sub> / humidity / IAQ or any other sensor at the signal of which the unit switches to maximum speed.
- + Control of filter clogging on the counter of motor hours.
- + Setting the operation of the unit on a daily timer.



## ADDITIONAL OPTIONS

- + Water heating
- + Electric heating
- + Water / Freon cooling
- + Connection of the air quality sensor
- + Connection of the moisture sensor

## REALISED PROJECTS



Business centre Avenue 53,  
Kyiv



Residential complex "Lisova  
Kazka", Kyiv



Residential complex  
"Panorama", Dnipro



Ibis Hotel  
Kyiv



Business centre "TSARSKY  
City Resort", Kyiv



Shopping Mall "Cloud  
Square", Vinnytsia



Cottage community "Green Hills"  
(sports complex), Vita-Poshtova village

# Convenient unit control from your smartphone with Aerostar APP



Makes it simple at any time  
and from anywhere in the world:

- control the parameter of equipment operation
- manage the settings
- receive notifications of emergencies
- consult customer service of AEROSTAR



**FOR ANDROID  
DEVICES**



**FOR IOS  
DEVICES**

individual  
settings

all settings on  
one screen

individual  
schedule

reports

instant notifications  
of accidents

service  
support