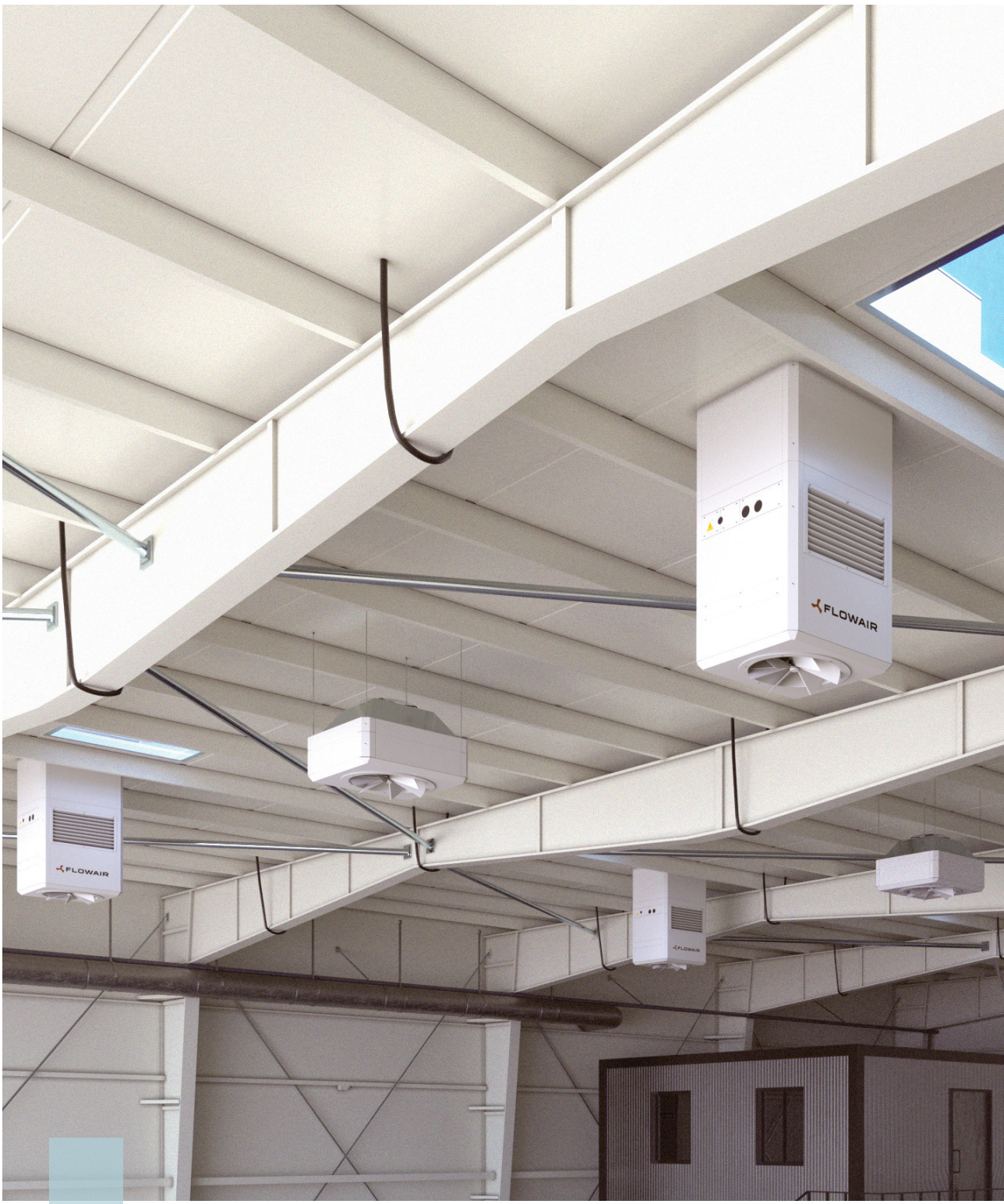
FLOWAIR
intelligent air flow



Cube O

Recirculation and air supply device

Cube O device

HP ready

Air flow
up to 12 000 m³/h

Configurability
modular design

Fan
highly-efficient EC

Heating capacity
100,8 kW

Weight
60-460 kg

Casing
coated steel

Cooling capacity
33,4 kW

What is Cube O?

The Cube O range devices can be used for heating, cooling and unidirectional ventilation in large-scale buildings. The Cube O range is characterised by a modular design which makes it possible to freely configure the devices to match them to customer needs or specific requirements of the facility.

High-performance components and advanced algorithms ensure comfort and maintenance-free operation. The devices can be fitted with 3 types of air distribution, including a swirl diffuser which automatically adjusts the direction of air discharge depending on operating mode.

Description of configuration

OR – Recirculation Cube device

ON – Air supply Cube device

ORNK – Recirculation and air supply Cube device with a K rooftop module

ONK – Air supply Cube device with a K rooftop module

ORK – Recirculation Cube device with a K rooftop module

Application of Cube O devices

- large and medium-sized RETAIL facilities – large-scale shopping centres, shopping arcades
- industrial facilities – factory floors, heavy industry, manufacturing
- logistics facilities – distribution centres and warehouses, exhibition centres
- sports facilities – school sports halls, large-scale sports halls, stadiums
- large service facilities – e.g. large car dealerships

Cube O advantages

The Cube O device has been designed for use in high-ceilinged industrial facilities. The industrial nature of the device is emphasised by the robust housing, made of coated sheet metal, as well as high-performance components.

Why Cube O?

Configurability – The modular design of the whole range means that device components can be adapted to individual needs.

Year-round operation – The heating and cooling function of the device can be realised through the use of a water heat exchanger. In addition, the heating function can be performed by a modulating gas burner.

Air distribution – a solution with a swirl diffuser or long-range nozzles ensures that air is supplied to the required zone.

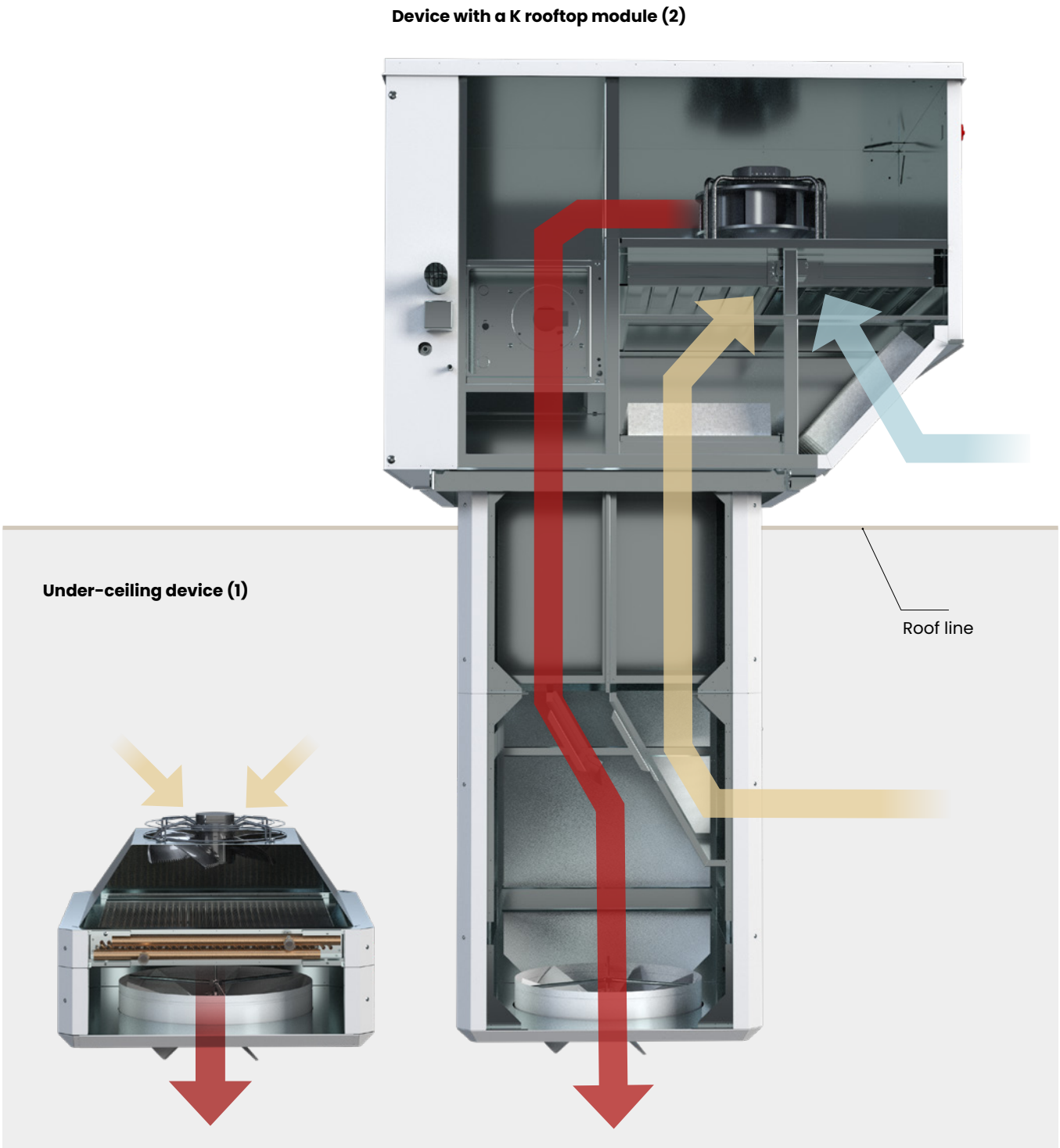
Functionality

With its modular design, the Cube O can provide heating, cooling and fresh air supply functions. In addition, control automation allows operation in destratification or freecooling modes, ensuring energy efficiency.

Cross-section and airflows in the device

The air in **under-ceiling recirculation units (1)** is drawn in from above the device and directed to the water exchanger, where it is heated or cooled, depending on operating mode. The air jet is then transported into the room via a swirl diffuser or long-range nozzles.

The recirculation and air supply devices with a **K rooftop module (2)** can work with recirculation air and with fresh air. After filtering, the air jets mix behind the recirculation damper. The air is then heated or cooled and discharged into the room.



Cube O configuration

1. Rooftop module – Enables fresh air supply and use of a gas heater.

2. Axial fan module – Axial EC fans enable variable adjustment of air flow. Depending on the configuration and air flow of the device, one or two fans are used.

3. Water cooler module

C2 – 2-row water cooler
C3 – 3-row water cooler

Gravity drainage of condensate from the drip tray is performed by an external siphon.

4. Radial fan module – radial EC fans with variable capacity adjustment. The power of the fan is selected depending on the device configuration.

5. Water heater module

W2 – 2-row water heater
W3 – 3-row water heater

6. Air supply module

D – Swirl diffuser with an actuator
V – Duct connection module
J – Long-range nozzle module

Cube O
K rooftop section

Cube O devices can be equipped with a K rooftop section. This module provides access to fresh air and enables installation of a gas heater. In addition, the K section can be equipped with a system for adjusting the fresh air ratio, which is realised by the recirculation damper and the external air filter.

Easy access

Because the gas heater is installed inside the roof section, service access is very simple. There is no need to stop production during operations related to maintenance of the gas burner.

No gas piping in the room

For a gas burner installed in the rooftop section, there is no need to route gas pipes within the room. All necessary gas pipes can be installed outside the building.

Versatility

The rooftop module makes it possible to use four different sizes of modulating gas heaters, which ensures an appropriate fit for every facility.

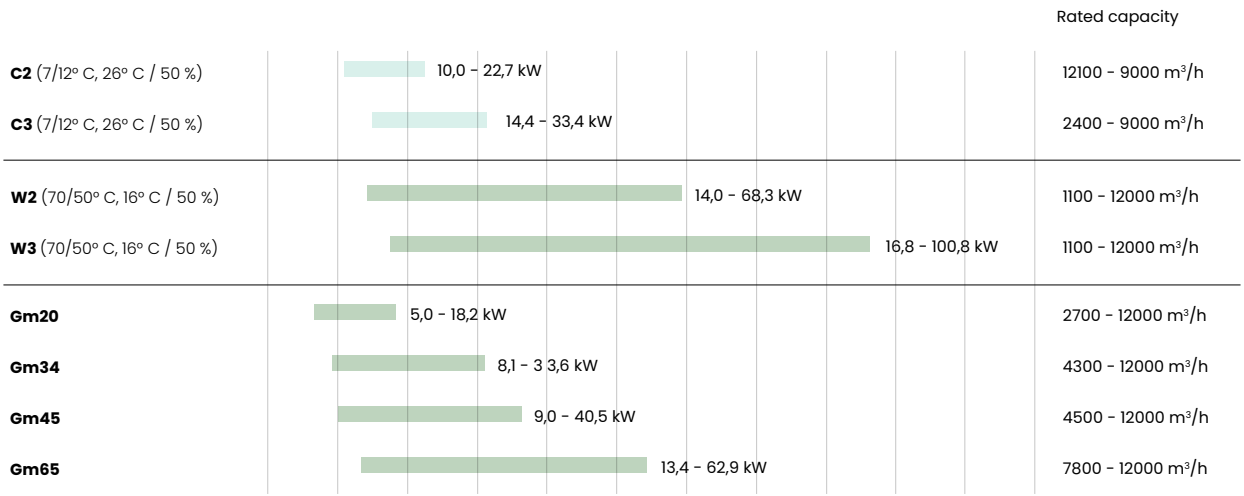
No gas detection system

The fact that there is no gas piping in the room entails further savings, as it means that a gas detection system is not required as well.

Technical data and control system

Cube O devices can use various sources of heating and cooling capacity. The heating function can be performed by a modulating gas burner or by a water heater. The water exchanger also enables cooling mode operation, using chilled water as the medium.

Depending on the device configuration, the following heating and cooling capacities can be supplied:



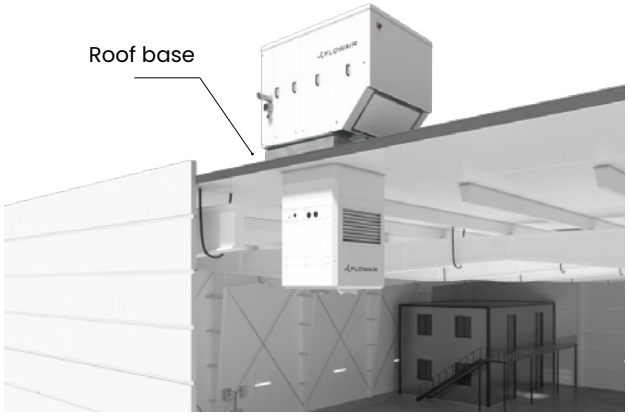
Cube O installation

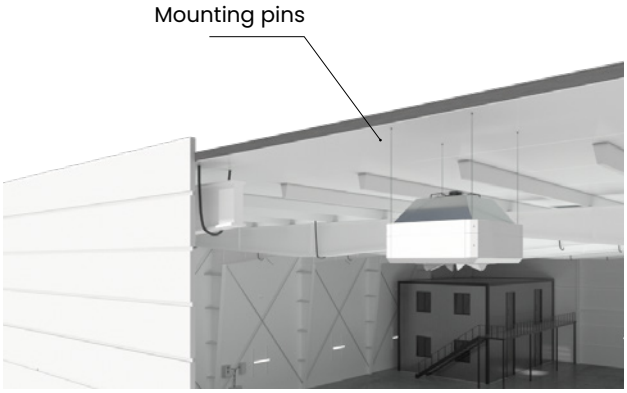
Configuration with a rooftop module

Installation requires preparation of an opening in the ceiling and a basic substructure. The device's power supply and possible water connection are located within the building. Gas piping, on the other hand, must be routed to the rooftop section.

Configuration without a rooftop module

Units without a rooftop section should be mounted under the ceiling, to horizontal partitions. Installation is done via four threaded pins. The device is equipped with integrated mounting brackets.





Cube O control system

The Cube O devices are equipped with a complete power and control automation system. The built-in Climatix controller provides a wide range of options for communicating with the device. **Cube O devices can be integrated with the SYSTEM FLOWAIR**, which means that 31 different devices connected to a single smart T-box Zone controller can work together.

Functions

- automatic adjustment of the direction of air discharge
- variable adjustment of the capacity of EC fans
- interoperability with gas detectors and fire alarms
- optional automatic adjustment of the recirculation damper
- can operate in a constant discharged air temperature mode
- can be connected to a remote monitoring system
- can be connected to external control systems
- automatic fan speed adjustment which ensures a constant air flow

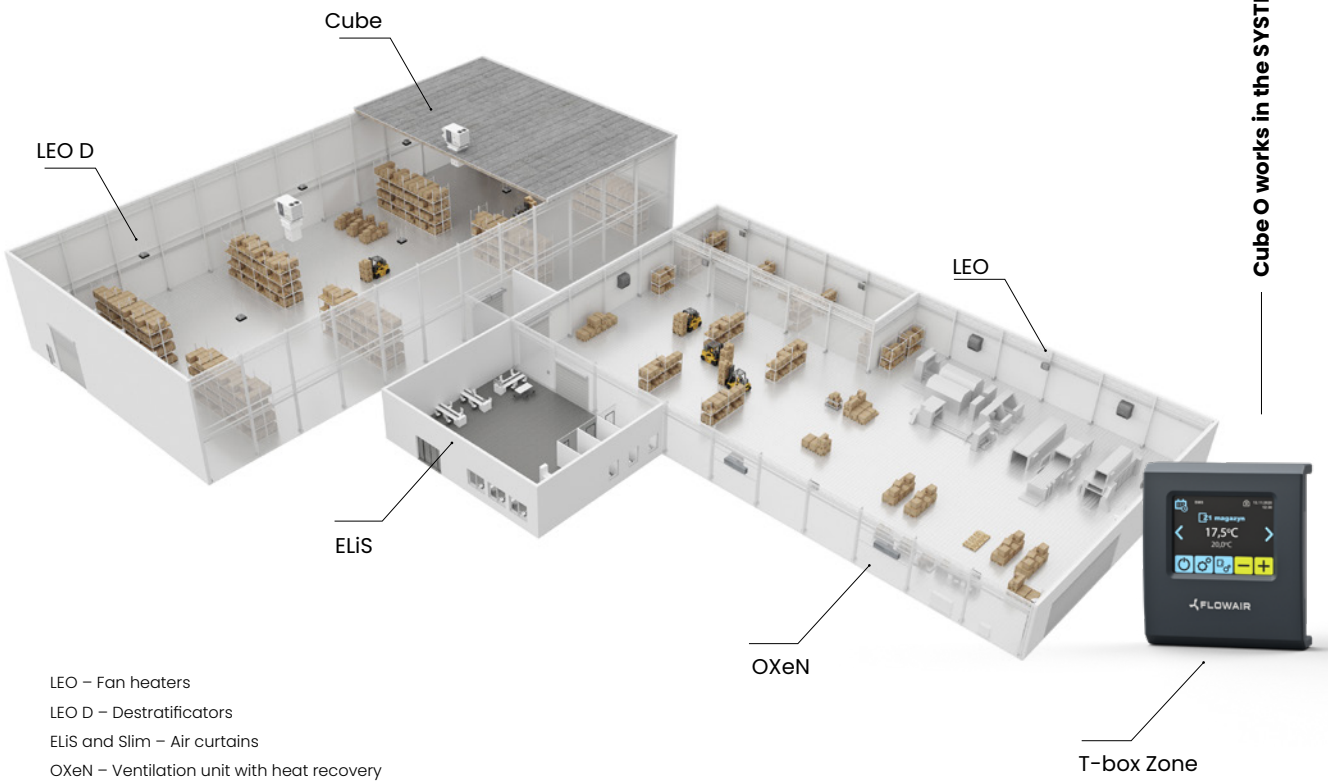
Zoned temperature adjustment

For facilities where at least two zones which differ in their use (e.g. factory floors with an office part, car dealerships with a workshop or shopping centres with a food court) can be distinguished.

SYSTEM FLOWAIR

The SYSTEM FLOWAIR is a complete range of heating and ventilation devices integrated by a single controller. The T-box Zone controller allows up to 31 devices from the range to work together in 31 independent zones.

Cube O works in the SYSTEM



LEO – Fan heaters
LEO D – Destratificators
ELiS and Slim – Air curtains
OXeN – Ventilation unit with heat recovery
Cube – Rooftop devices

Control of device operation with a single controller

Local adjustment of device operation

Advanced control of ventilation and heating devices

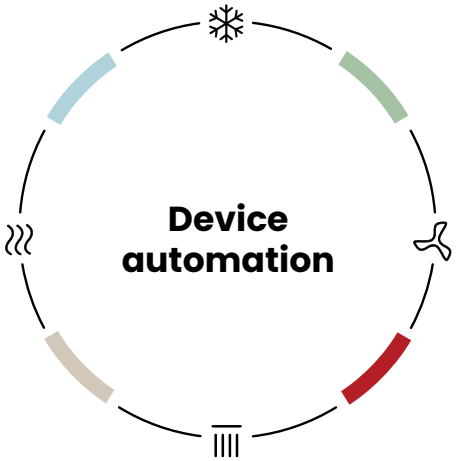
Adjustment of device operation schedule to individual needs

Antifreeze – Protection of the building and equipment against excessively low temperatures

Integration and interoperability of devices

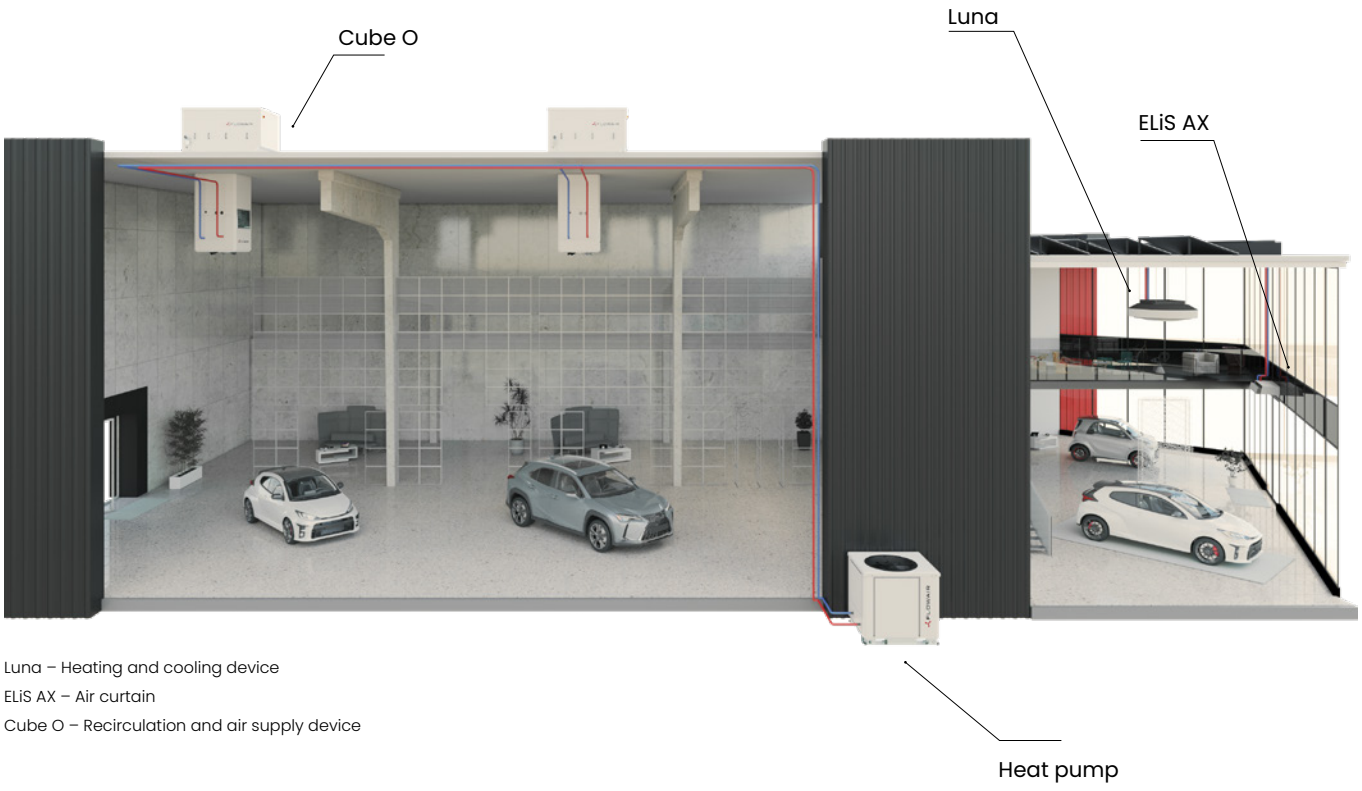
The T-box Zone smart touch controller has a number functions necessary to effectively manage the operation of the heating and ventilation system that until now were restricted to extensive Building Management Systems (BMSs).

The SYSTEM enables devices to work together to ensure a higher thermal comfort and energy efficiency. The combined operation of heaters and destratificators makes it possible to effectively utilise heat from the upper parts of the room, while saving the heat energy supplied by the heaters.



Cooperation with heat pumps

All Cube O devices are equipped as standard with high-efficiency exchangers which ensure comfort in the room even when working with low-temperature heat sources. Advanced control ensures service-free interoperability with heat pumps. Another advantage of the solution is that it uses water or glycol solution as the heating or cooling medium, which increases safety and decreases the impact on the environment.



Luna – Heating and cooling device
ELiS AX – Air curtain
Cube O – Recirculation and air supply device

FLOWAIR
intelligent air flow

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