MultiPlex 2

The next generation of Airvent's modular air handling units

MultiPlex 2 is designed for comfort and industrial applications, offering high flexibility, reliable performance and operational efficiency, ensuring optimal indoor air quality, while aligning with the latest industry standards and technological advancements.

The longevity of MultiPlex 2 air handling units is ensured by the quality of materials, the robust framework foundation and the applied technical solutions.

As a result of the new framework, MultiPlex 2 units comply with the above classifications according to the *EN 1886* standard, **T** thermal transmittance of the casing; **TB** thermal bridging factor; **L** casing air leakage; **D** mechanical strength and **F** filter fixation leakage.

MultiPlex 2 | Highlights

Flexible configurations MultiPlex 2 is available in 20 standard sizes, capable of handling airflows from 0,8 up to 10,5 m^3/s (2800-37,500 m^3/h), with multiple options for connection variability and section arrangements. The proper dimension and functionality of the unit can be selected, using our selection software.

Functional components The modular framework offers high flexibility to freely configure each section to fulfill the requirements in the specific application. Configurations include: Air damper, water- and electric heater, multi-stage air filtration, mixing section, water- or dx cooling and/or heating, sound attenuators, rotary or counterflow heat recovery, run-around coils, EC fans, automatic controller.

Thermal bridge The rigid framework is classified as TB2, resulting in minimal thermal leaks and improved performance in line with EN 1886 standards. Complex profiles provide robustness and resistance to corrosion, ensuring longevity. The high-quality, precise framework ensures safe and convenient access to each section, facilitating maintenance and cleaning.

Thermal transmittance The casing is made from 51 mm panels, resulting in T2 classification according to the EN 1886 standard for thermal transmittance, ensuring energy efficient operation. It features rockwool insulation with a density of 70 kg/m^3 for reduced noise levels, placed between corrosion-resistant steel plates, secured by additional thermal bridging plastic profiles.

Airtight stability MultiPlex 2 features a strong, load-bearing and airtight structure that meets the highest rating classes: D1 for deflection and L1 for air leakage. These are essential for maintaining correct pressure, durability, and system efficiency. The unit's strong framework and panel combination minimize air leakage and protect against damage that could lead to malfunction.

Filtration High efficiency filtration separates pollen, fine dust, bacteria, and other particles from the airflow, greatly improving both the longevity of the unit and the quality of the delivered air. We offer a wide range of high-quality filters that feature large surfaces, low pressure drop, and multiple levels of particulate efficiency. The frame and rail design are compliant with Class F9 for filter by-pass leakage, according to *EN 1886*.

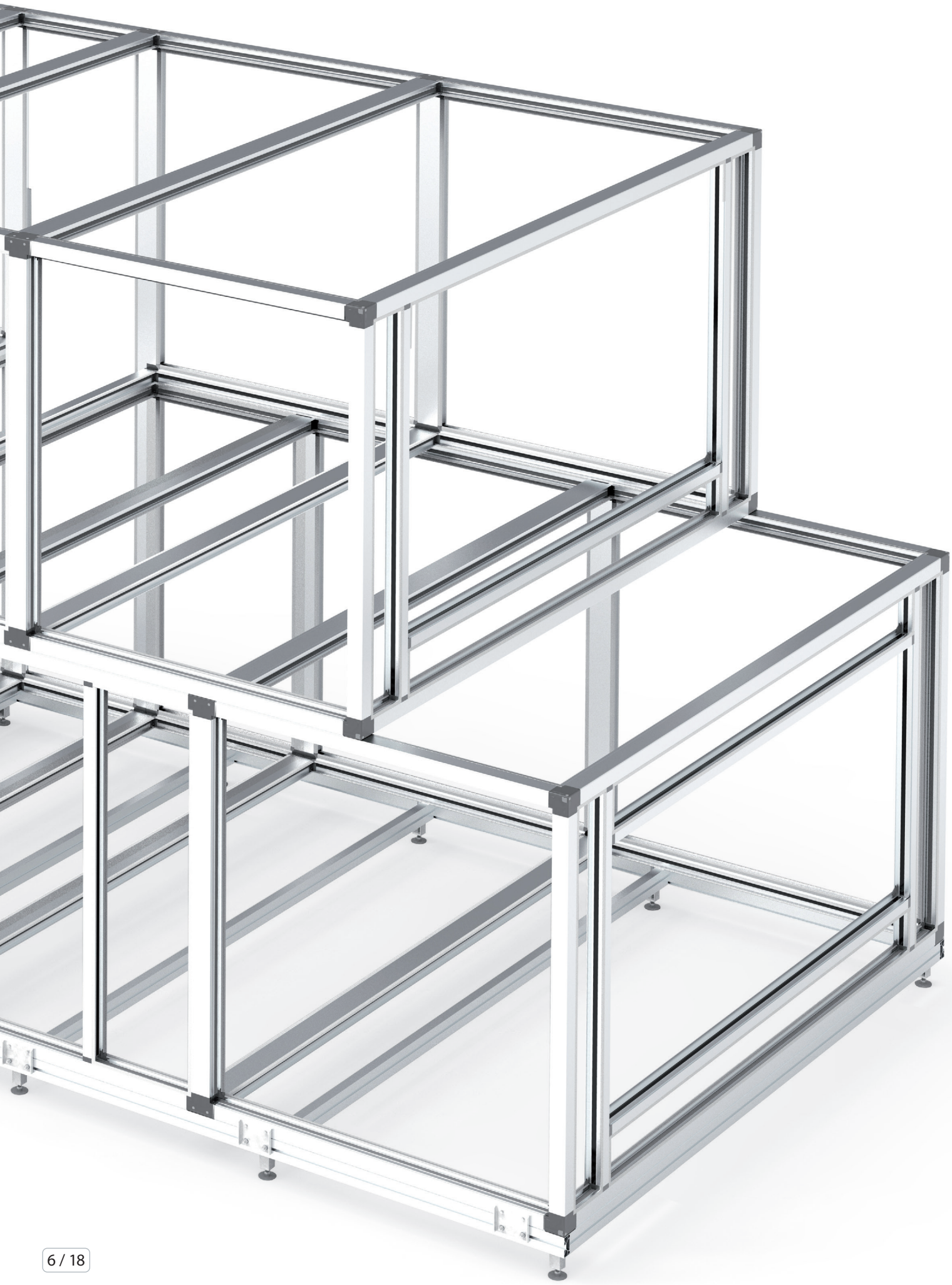
Sustainability

MultiPlex 2 – Elevating sustainability in air handling systems
MultiPlex 2 reflects our practical commitment to sustainability, blending advanced energy-saving functions with a durable foundation and material selection to support optimal indoor air quality, while saving resources.

Efficiency
Developed with sustainability in mind, MultiPlex 2 features smart control functions, efficient filtration, EC fans, and energy recovery modules meeting the highest energy ratings, minimizing operational costs, regardless of the diverse applications the units are deployed in.

Performance
MultiPlex 2 combines performance with durability, resulting in a long-lasting operation. The applied thermal insulation, effective filtration, superior air tightness, and mechanical strength comply with the EN 1886 standard, ensuring optimal air quality and a reduced environmental impact.

Quality
High-quality indoor air starts with a high-quality air handling unit. MultiPlex 2 features corrosion-resistant materials and a wide selection of reliable, first-class rated technical components. With priorities on maintainability and cleanability, these units are designed for longevity.



Framework

MultiPlex 2 is designed with a strong foundation centered around durability, airtightness, the minimization of heat transfer, ensuring an energy efficient performance, with low sound levels.

Framework

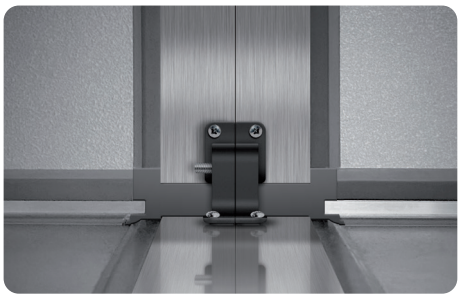
The unit's frame is constructed from rigid, anodized aluminum profiles with thermal break inserts. The modular design allows for flexible configurations and the optimal integration of the various functional components. The profiles are interconnected with the injection-molded glassfiber reinforced plastic corner connectors, providing a secure and stable structure.

Panels

The panel and door design features a 51 mm thick, double-layered shell, equipped with rockwool insulation with a density of 70 kg/m^3, ensuring high thermal and acoustic performance, resulting in T2 thermal transmittance classification, based on the EN 1886 standard. The fix panels connected to the outer aluminum frame are secured without the use of screws, featuring precions-made aluminum profiles and rubber gaskets.

Doors

The airtight doors provide access to the internal components. They are equipped with high-quality door handles that can be fitted with locking mechanisms to offer additional safety, especially for accessing potentially dangerous components such as fans and electrical cabinets. The structure of the doors features a double layered construction, similar to that of the panels.



Assembly

The assembly of each module is facilitated by internal and external connection brackets, ensuring perfectly aligned sections, maintaining the integrity of the enclosure. The applied sealing at the junctions between each section guarantees air tightness and minimal heat loss, while improving the unit's hygienic standards.

Cleanability

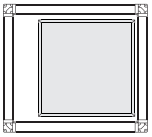
With the exact placements of steel fastening brackets, MultiPlex 2 is able to guarantee uninterrupted, smooth internal surfaces. Additional sealing strips, combined with the correct assembly design of the functional components, prevent dirt accumulation, enhancing maintainability, resulting in a clean unit.

Weatherproof

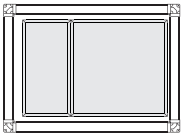
The standard framework includes the ability to withstand changing weather conditions, protecting the internal components. The outer shell is made of C4 corrosion resistant AZ185 aluzinc steel, which guarantees durability, regardless of fluctuations in temperature or humidity. Additionally, an outdoor set with a sloping roof, inlet and outlet hoods or grilles is available.

Cross sections, performance

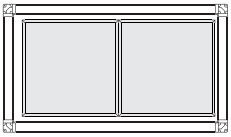
30R 900x800 mm



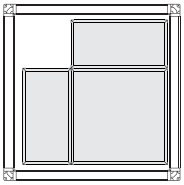
40R 1100x800 mm



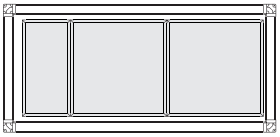
50Q 1400x800 mm



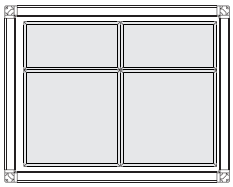
60R 1100x1100 mm



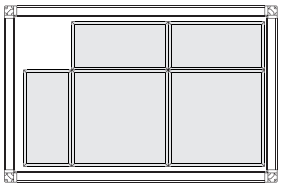
65Q 1700x800 mm



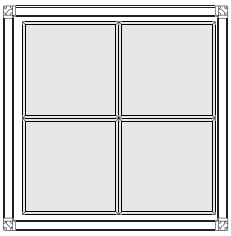
80R 1400x1100 mm



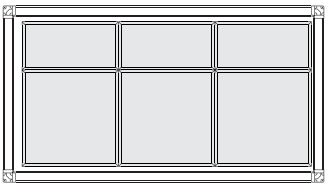
100Q 1700x1100 mm



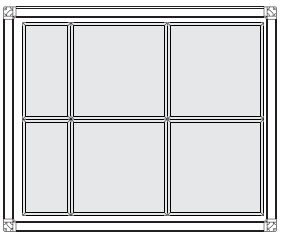
105R 1400x1400 mm



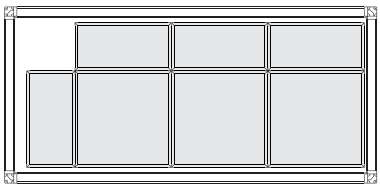
115Q 2000x1100 mm



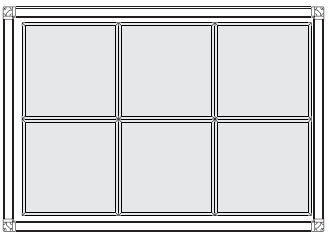
130R 1700x1400 mm



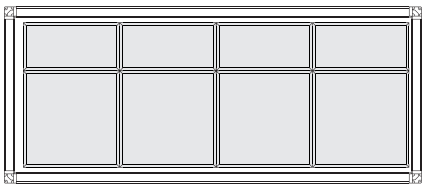
135Q 2300x1100 mm



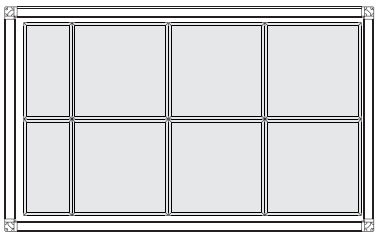
150R 2000x1400 mm



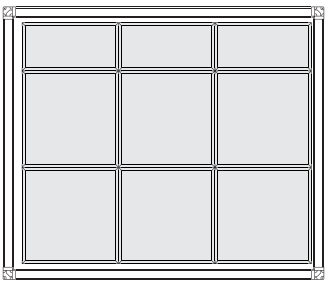
150Q 2600x1100 mm



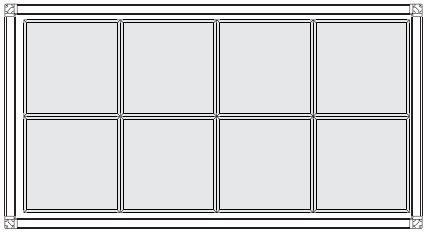
175Q 2300x1400 mm



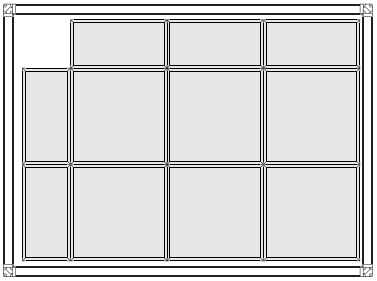
190R 2000x1700 mm



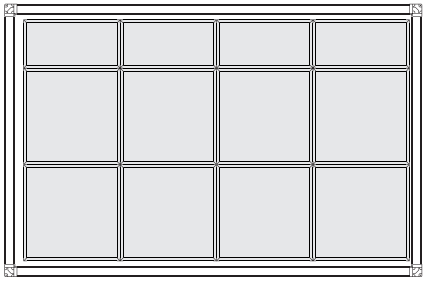
200Q 2600x1400 mm



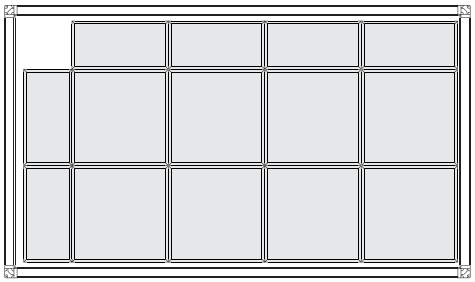
220R 2300x1700 mm



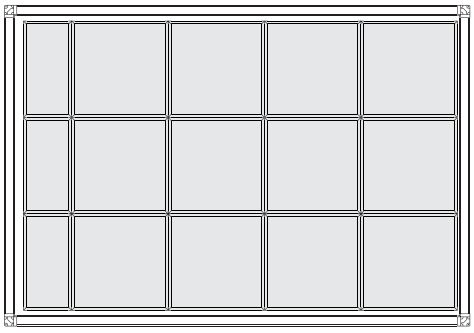
250Q 2600x1700 mm



280Q 2900x1700 mm



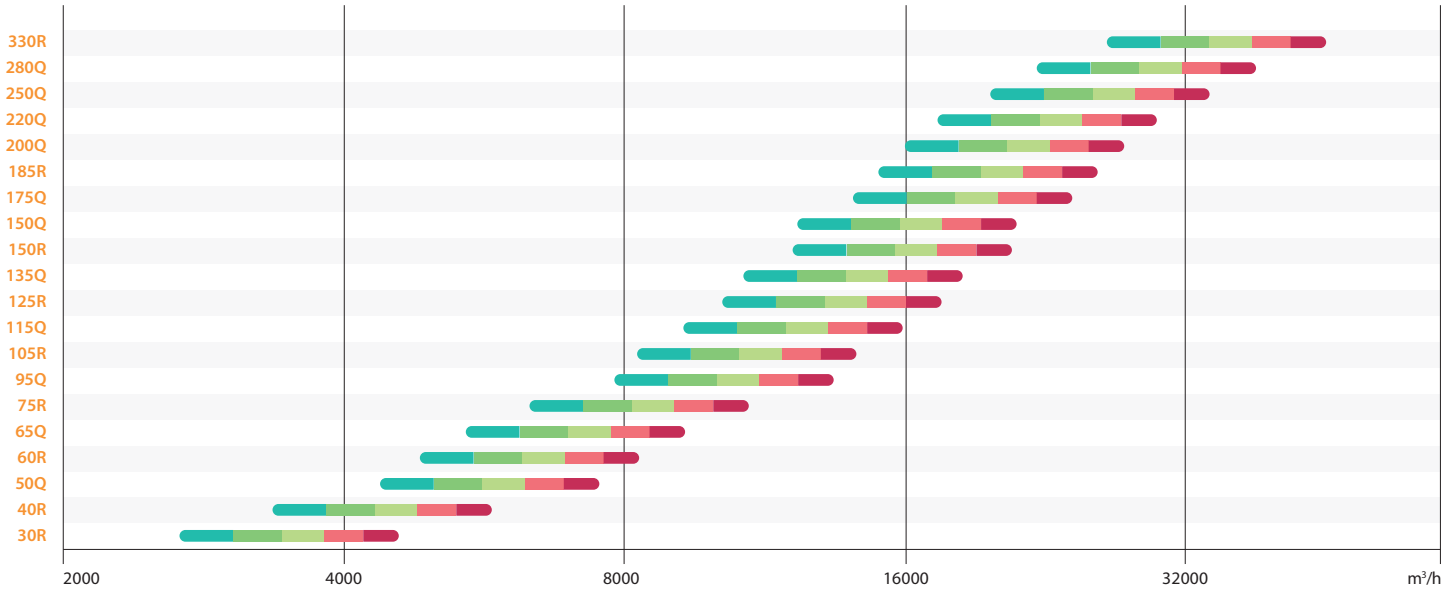
330R 2900x2000 mm



MultiPlex 2 air handling units are available in both square and rectangular cross-section designs, accommodating standard filtration options, and ensuring ample space for easy maintenance. These options are optimized in accordance with ErP directives, resulting in reduced internal pressure drops, higher efficiency.

Cross sections
The deliberate grid concept allows for the selection of an ideal unit size tailored to each specific application..

Q square cross section*; **R** rectangular cross section
* *square cross-section is achieved by stacked modules



Classification and performance *(m/s)*
- V1 ≤1,6
- V2 1,6–1,8
- V3 1,8-2,0
- V4 2,0–2,2
- V5 2,2–2,5

Classification and performance according to *EN13053:2019*

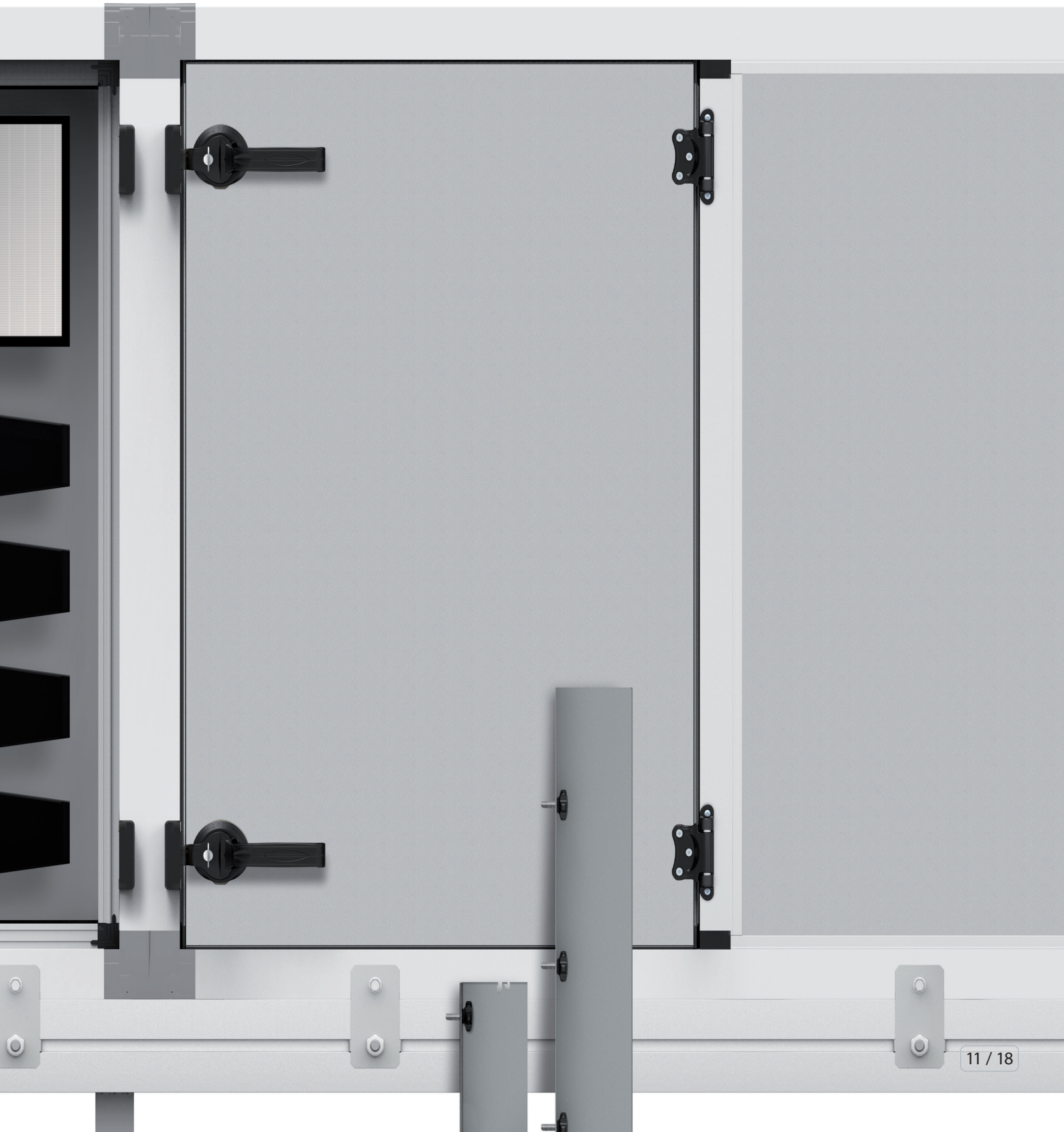
Components

The modular design offers a comfortable flexibility to freely configure each section to fulfill the application requirements. Components include: Louvres, shut-off and/or calibration dampers, water- and electrical heaters, multi-stage air filtration, mixing section, water- or dx cooling and/or heating, sound attenuators, rotary-, cross- or counterflow heat recovery units, run-around coils, EC fans, automatic controller.

Filters

Available with a wide range of filtration options and a frame design developed for durable operational performance of the unit, ensure high ventilation efficiency. Compact, panel or pocket filters offer fine dust, bacteria and particle filtration ranging from coarse to ePM1 90%*. The frame design adheres to Class F9 for filter by-pass leakage.**

* According to ISO16890 standard.
** According to EN 1886 standard.

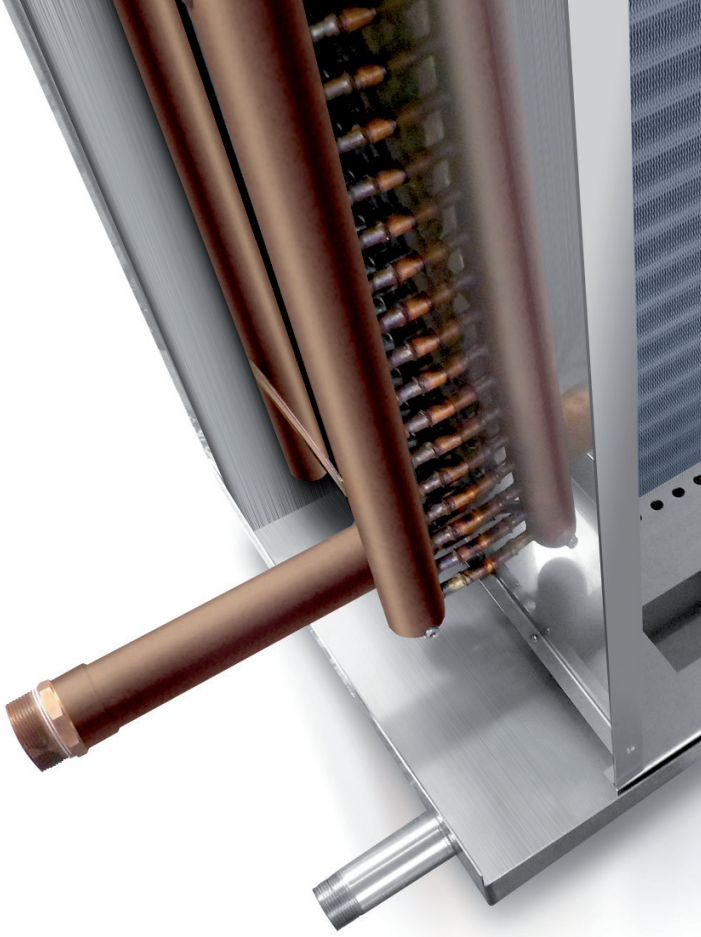


Rotary heat recovery

MultiPlex 2 air handling units can be equipped with rotary heat recovery wheels with optimal efficiency in heat, cold and humidity recovery, ensuring low pressure drop, high performance and temperature efficiency. Due to the compact, short length, rotary heat recovery units are optimal for installations in machine rooms with limited space.

Cross- or counterflow heat recovery

MultiPlex 2 is also available with cross- or counterflow heat recovery units with an all-aluminum build, ensuring optimal energy recovery efficiency for both heating and cooling, with efficiencies reaching up to 90%. These heat exchangers utilize airtight aluminum fins with microchannels to prevent leakage and the return of odors or moisture, with a stainless steel drip-tray underneath for condensed water collection.

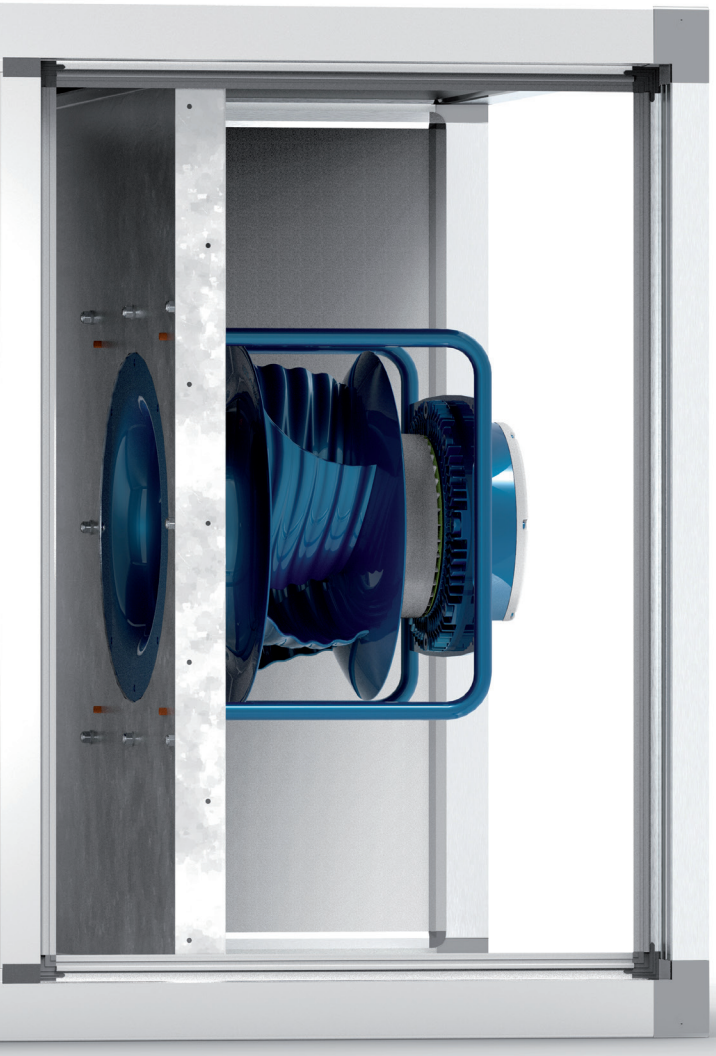


Water, electric or DX heat exchangers

MultiPlex 2 units can be fitted with various cooling and heating options, such as electrical heaters, hot or chilled water coils, and DX refrigerant heat exchangers, or a combination thereof. All heat exchangers are produced in a conventional design.

Sound attenuation

Airvent's absorption-type sound attenuators, designed to effectively reduce noise from the air handling units to the duct systems and exterior environment. The silencers are available in high-quality execution with either fixed or removable, aerodynamically shaped internal baffles, as well as removable panels for easy cleaning and inspection.



EC plug fans

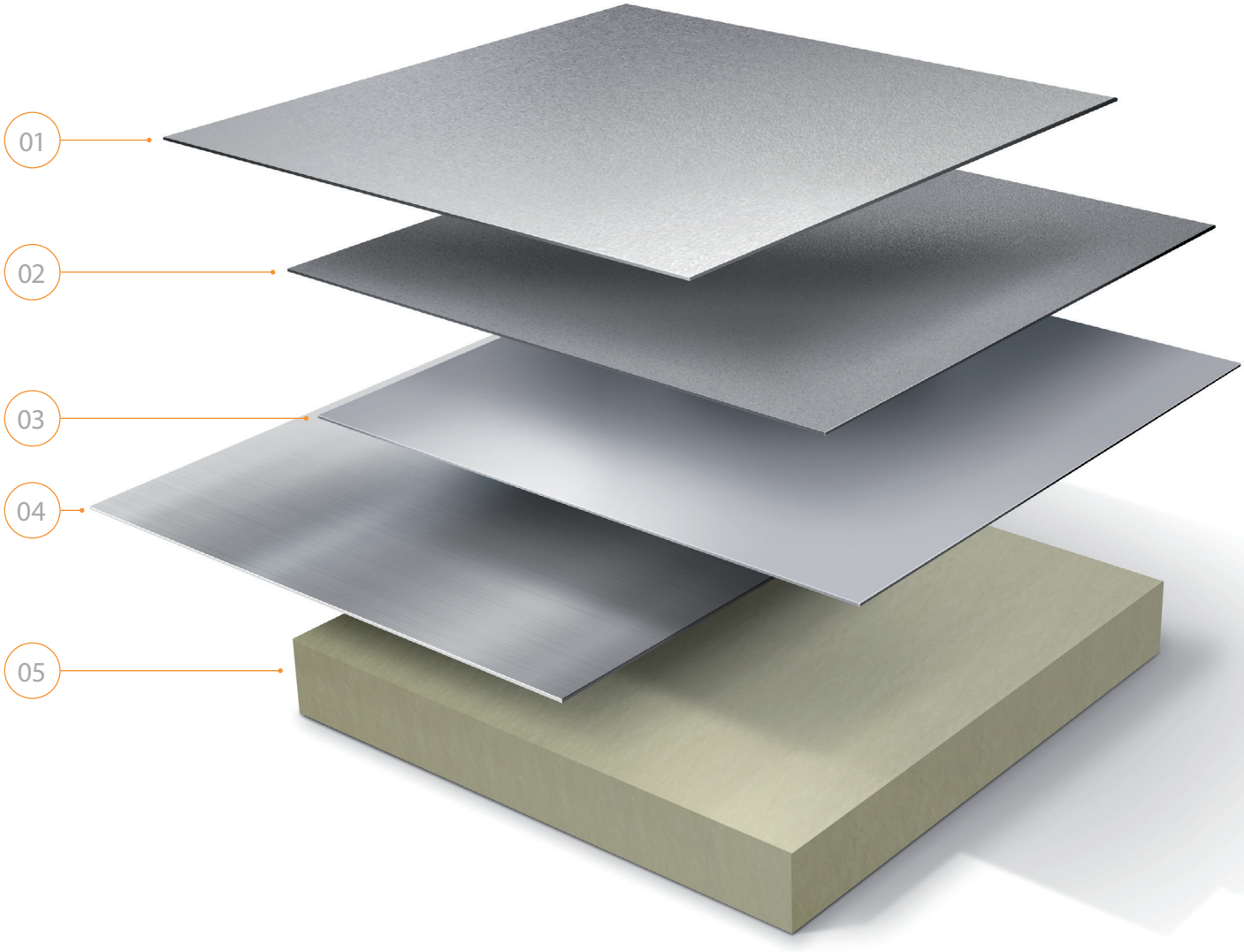
The units feature direct-driven EC plug fans for both supply and exhaust airflows, offering energy efficient operation with low sound levels. The EC motors include integrated variable speed control enhancing efficiency across all speed ranges and minimizing the use of electricity.

Control system

The units are equipped with Airvent's CA-Plex automatic control system, featuring a compact design and user-friendly touch screen display. This system enables operators to easily adjust and monitor pre-set ventilation rates, operation modes, airflow, temperature, humidity, pressure, mixing ratio, and heat recovery value.

Main materials

01 AZ185 Aluzinc steel – *external surface, roof*
02 Z275 Galvanized steel– *internal surface*
03 Aluminum – *framework*
04 Stainless steel – *condensation tray, optional internal surfaces*
05 Rockwool thermal and acoustic insulation – *doors, panels, sound attenuators*



Selection software

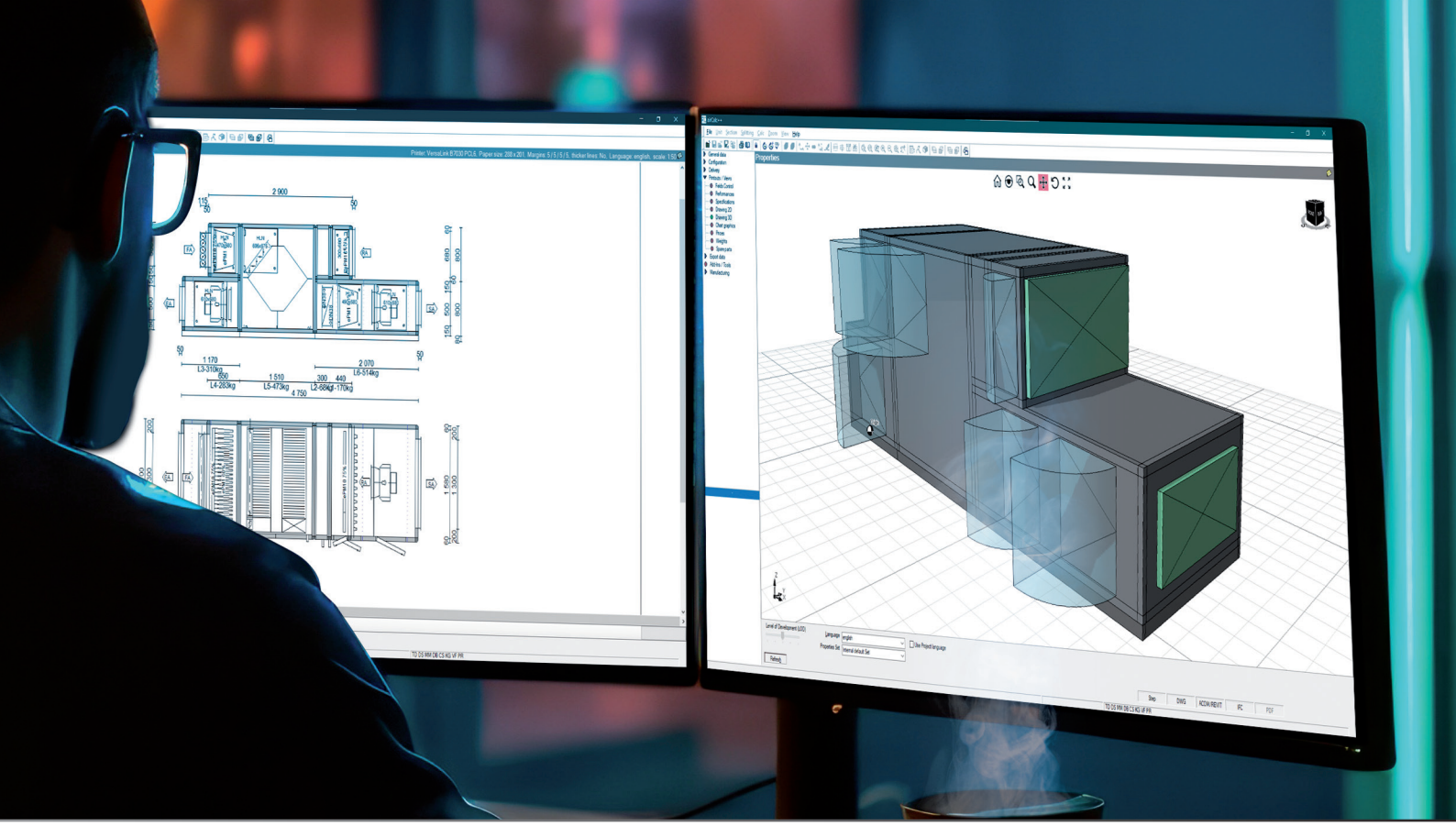
MultiPlex air handling unit configurator
The selection software simplifies the configuration of Airvent's air handling units, streamlining the design process from conception to final documentation. It offers a user-friendly interface for selecting and customizing unit sizes and functions to precisely fit project needs. Users can adjust parameters individually, ensuring accurate calculations for the optimal air handling unit selection. The software allows for the addition of multiple units to a project and enables saving and revisiting designs as necessary.

Customization and optimization
Enables the customization of Airvent air handling units for specific project requirements, considering factors like dimensions, capacity, efficiency, and environmental conditions. The software ensures that the unit is optimized for energy efficiency, performance, and cost-effectiveness.

Simplification of the design process
The selection tool streamlines the design process, simplifying the work of HVAC engineers and designers to specify the right equipment. This includes the ability to quickly compare different configurations and their impacts on performance and cost.

Compliance and standards
Assists in ensuring that the designed Plex air handling unit configurations comply with local and international standards for energy efficiency, air quality, and noise levels.

Technical documentation and reports
Automatically generates detailed outputs and technical documentation, including performance specifications, CAD drawings, and installation guidelines, facilitating communication and the work for each project manager.



Application areas

The MultPlex 2 air handling units are suitable for a wide array of applications, given the modular design, variety of components, and extensive size options, enabling the units to perform their tasks effectively.

Comfort
- Residential buildings
- Offices
- Educational institutions, kindergartens
- Sports facilities
- Shopping centers, retail stores
- Hospitality

Industrial
- Manufacturing plants
- Logistics centers
- Kitchens
- Non-sterile areas of hospitals

Special
- IT/server rooms
- Printing, wood, and paper industries
- Power plant environments

www.airvent.hu