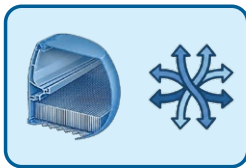


CLEANROOM ENVIRONMENT AIR MANAGEMENT TECHNOLOGIES

Filtration | Controls | Monitoring | Lighting



Fan Filter Unit FF-Series



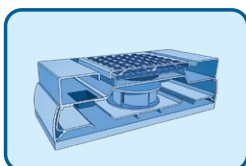
EXCEPTIONAL VERSATILITY

Innovative design for maximum application flexibility



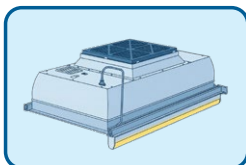
QUICK-FIT RAIL SYSTEM

The next generation of ceiling installation



FULLY WALKABLE DESIGN

Safe full-surface access for installation and maintenance



INTEGRATED CLEANROOM LIGHTING

For a drastic reduction of labor and material costs



SMART CLEANROOM MONITORING

The FFU system can be an intelligent - environmental management platform



Introduction

The latest FFU from FILT AIR Ltd. is designed for versatility and offers an immense selection of dimensions and configurations to meet the most diverse cleanroom requirements. The outstanding innovation of the sophisticated design is the specially

developed, patented aluminum profile of the FFU housing. The many ingenious details of the profile open up an enormous number of configuration variants.

Highlights

- Low-profile design for space-constrained plenums
- Multiple filter integration and service configurations
- Smart control via NFC, Web and BMS connectivity
- Energy-efficient operation with low noise levels
- Versatile integration with lighting and sensors
- Walkable design for maintenance and congested plenums

Construction

The FFU consists of a frame made of aluminum profiles, in whose numerous grooves, recesses and integrated threads the inner parts such as fan attachment, filter and air baffles are attached. Thanks to the large number of attachment options, a suitable variant can be created for every installation situation: integrated filter, separate filter, integral filter with option to change from below, fan exchange from above, fan exchange from below. There are also many installation options: e.g. brackets for mounting from above or with the new Filt Air "Quick-Fit" rail

on a standard T-bar ceiling.

The electrical connection and control options are also possible in many different ways.

The product is a modular system that can be flexibly expanded with, for example, pressure sensors for precise airflow measurement and/or filter status as well as various walkable versions.

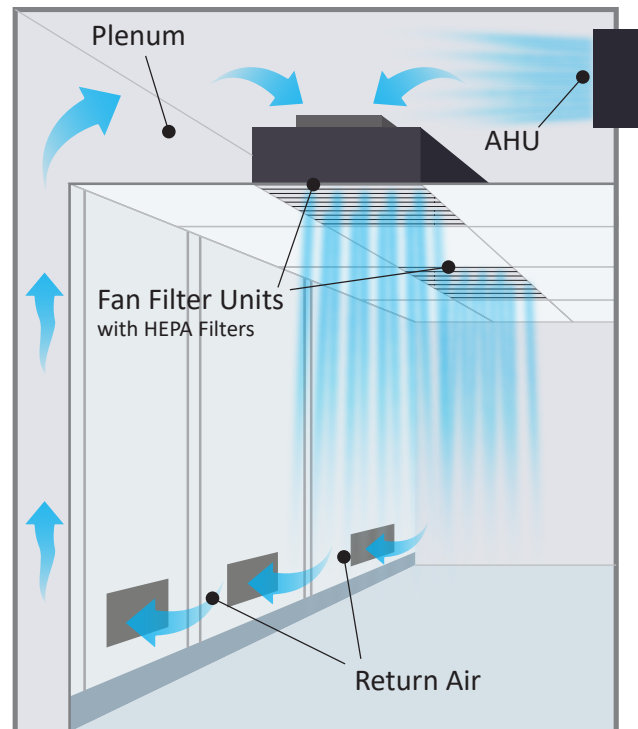


Cleanroom

Industrial cleanrooms are highly controlled environments used in industries such as pharmaceuticals, biotechnology, electronics, and aerospace to manufacture products sensitive to contamination. These rooms maintain extremely low levels of airborne particles, ensuring that even microscopic pollutants, such as dust, microbes, or chemical vapors, do not compromise the manufacturing process or the products themselves. Cleanrooms operate through a specialized air filtration and circulation system that continuously removes contaminants, with air regularly filtered and recirculated to meet strict cleanliness standards.

The importance of clean air in these settings cannot be overstated. Contaminants as small as a single dust particle can compromise the quality and reliability of high-precision products. In sectors like healthcare and microelectronics, the impact can be even more critical, potentially risking patient safety or rendering sensitive devices inoperative. Cleanrooms are often classified according to ISO standards, which determine the acceptable concentration of particles in the air. Achieving these standards requires sophisticated filtration systems that maintain consistent air quality while adapting to varying conditions in the workspace.

To support the evolving needs of modern cleanrooms, FILT AIR Ltd. is introducing a next-generation Fan Filter Unit (FFU), designed to simplify control and enhance cleanroom efficiency. Our latest FFU is engineered with advanced automation and connectivity features to provide reliable, efficient, and flexible air filtration. It supports chaining power across multiple units, reducing the need



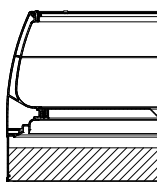
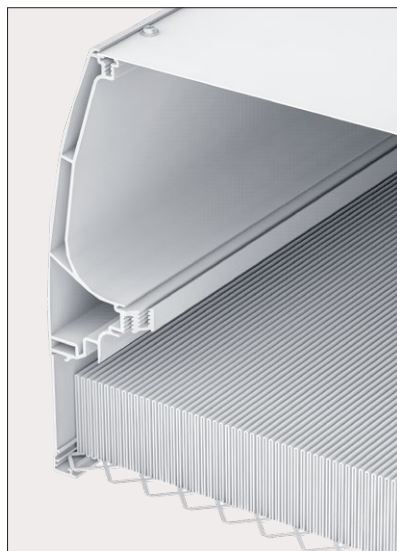
for complex wiring setups and making installation faster and more cost-effective.

Equipped with remote monitoring and control options, including NFC and BMS integration, our FFU enables easy adjustments of RPM, airflow, and velocity. Additionally, a built-in airflow sensor ensures optimal performance by automatically adapting to real-time airflow requirements. This intelligent FFU from FILT AIR Ltd. sets a new standard in cleanroom technology, ensuring that your facility maintains the highest levels of air quality with minimal manual intervention.



Versatile Options for Filter Integration

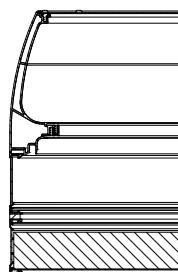
The new FFU offers three distinct filter configurations, each designed to meet specific cleanroom requirements. Whether you prioritize ease of maintenance, cost-effectiveness, or superior sealing performance, our flexible solutions ensure optimal airflow and cleanliness for any environment. Explore the options below to find the best fit for your needs.



Integrated Filter in FFU Housing

For maximum cost-efficiency, the FFU supports filters integrated directly into its housing, eliminating the need for additional filter frames. This streamlined design not only reduces overall costs but also minimizes the unit's height, making it suitable for cleanrooms with space constraints.

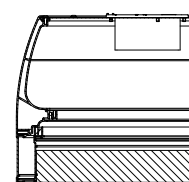
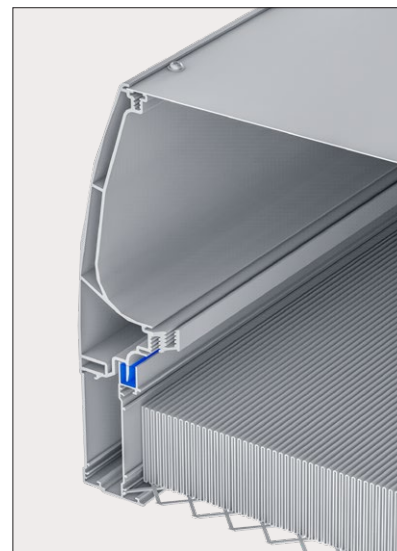
The integrated filter configuration is simple to install, ensuring both an optimized footprint and enhanced performance without sacrificing cleanroom air quality standards.



Panel HEPA Filter (GP Series)

The FFU can be equipped with a versatile and easy-to-install panel HEPA filter, such as our GP series. This configuration allows for quick replacements and offers flexibility in cleanroom environments. Operators can also store replacement filters on-site, enabling fast, efficient swaps during urgent situations.

This setup ensures smooth operation and minimal downtime, making it an ideal solution for dynamic cleanroom conditions.



RSR - Room Side Replaceable

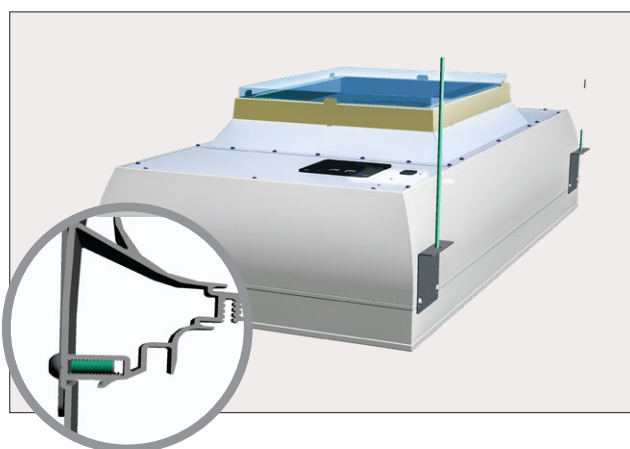
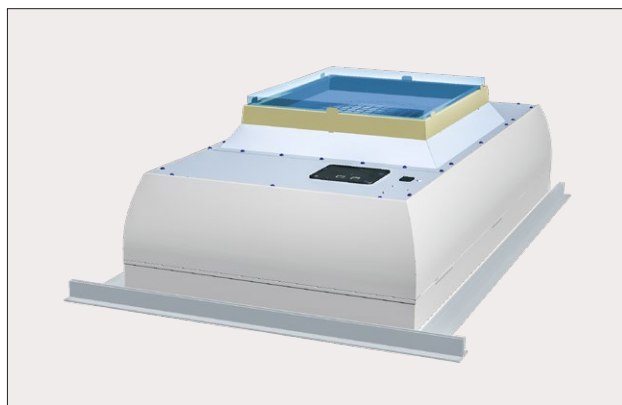
The filter service from the cleanroom side drastically simplifies and shortens the necessary work steps. Without dismantling the FFU and the associated contamination with dirt particles from the plenum, operation of the cleanroom can continue unaffected.

The gel liquid seal ensures maximum tightness. It guarantees an absolutely leak-free fit of the filter and meets the highest requirements. guaranteed.

Installation Option

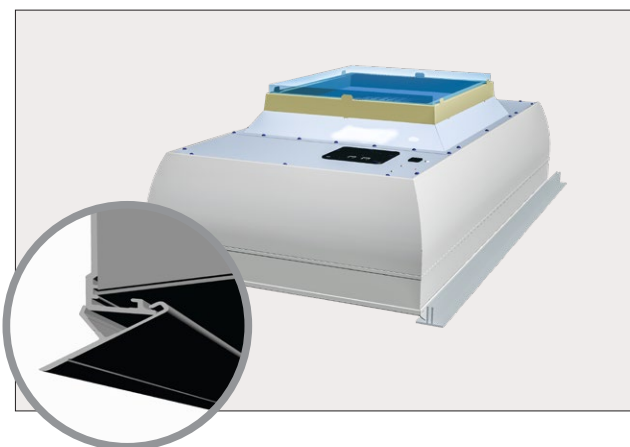
Classic T-Bar Installation

This is the most common and well-known kind of installation process. If you use our integrated version which consists of one part (instead of a separate filter and fan unit), it makes it much easier to remove and re-install.



Bracket Installation

The units can be secured directly to the building ceiling with brackets. The new FFU design allows for a direct screw connection to a dedicated tunnel, as shown in the detail view. In addition, the screw thread comes already integrated within the profile. Another highlight is that a special profile which we have added to the FFU closes and hides the gap in the ceiling around the FFU.



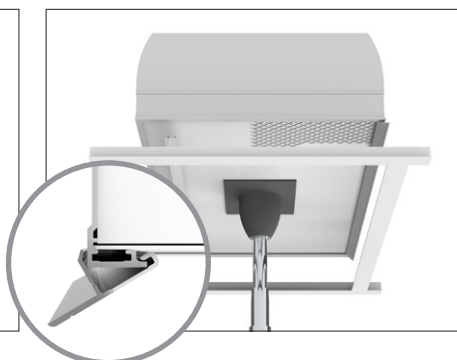
Filt Air 'Quick-Fit' Rail Installation

Another highlight is the newly developed "Quick-Fit" rail system.

It drastically simplifies the installation /uninstallation process for the common T-bar ceiling profiles and avoids filter and usual FFU damage during installation.

How it works

Removing the FFU for maintenance requires only 3 steps:



1. Raise the FFU a few centimeters above the installation position

2. Remove the "Quick-Fit" rails

3. Take the FFU out of the ceiling - done!

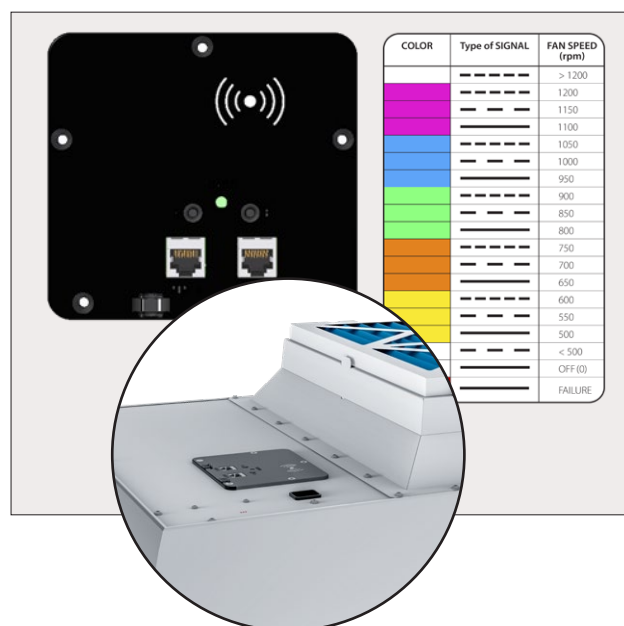
Controlling

One of the highlights of the new FFU series is the large selection of different control options. Even without an FFU controller, there are many ways to access the FFU parameters.

1. Controlling through built-in Connection box

The newly developed connection box offers an integrated user interface with status display and indication of the current speed plus speed setting.

This means, without any additional costs, each FFU is a “stand-alone” unit that includes all the necessary control functions.



2. Control up to 20 FFUs with this smart box

Equipped with all essential functions: Start/Stop, Speed Control and Real-Time status display. Simplify your operations, boost efficiency, and save valuable time.



3. Controlling through NFC Connection with mobile devices

The absolute highlight in terms of “stand-alone” control solutions is the “NFC functionality” developed and integrated by Filt Air.

Together with the Filt Air app for mobile phones, this provides convenient access to all parameters including reading and changing FFU address.

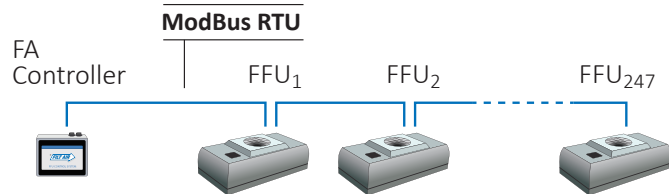
At the same time, it is a powerful tool for maintenance and service.



Controlling

4. Controlling through Filt Air FFU Controller

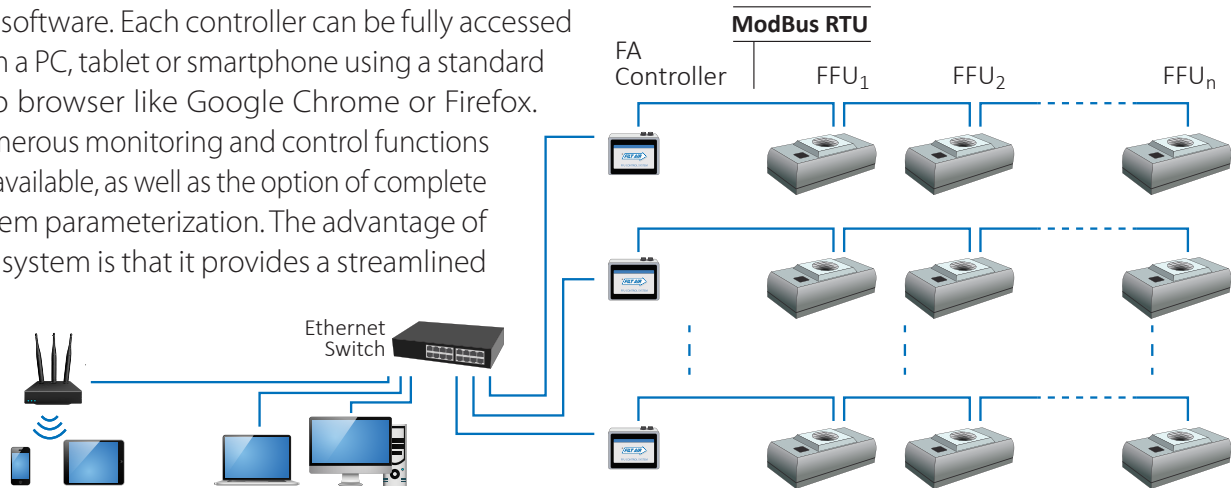
Full monitoring and controlling from a local PLC Controller device Up to 247 units



5. Controlling by using the Filt Air Web Server

In addition to the local controller, the integrated web server functionality enables unlimited remote access to all controllers without the installation of any software. Each controller can be fully accessed from a PC, tablet or smartphone using a standard web browser like Google Chrome or Firefox. Numerous monitoring and control functions are available, as well as the option of complete system parameterization. The advantage of this system is that it provides a streamlined

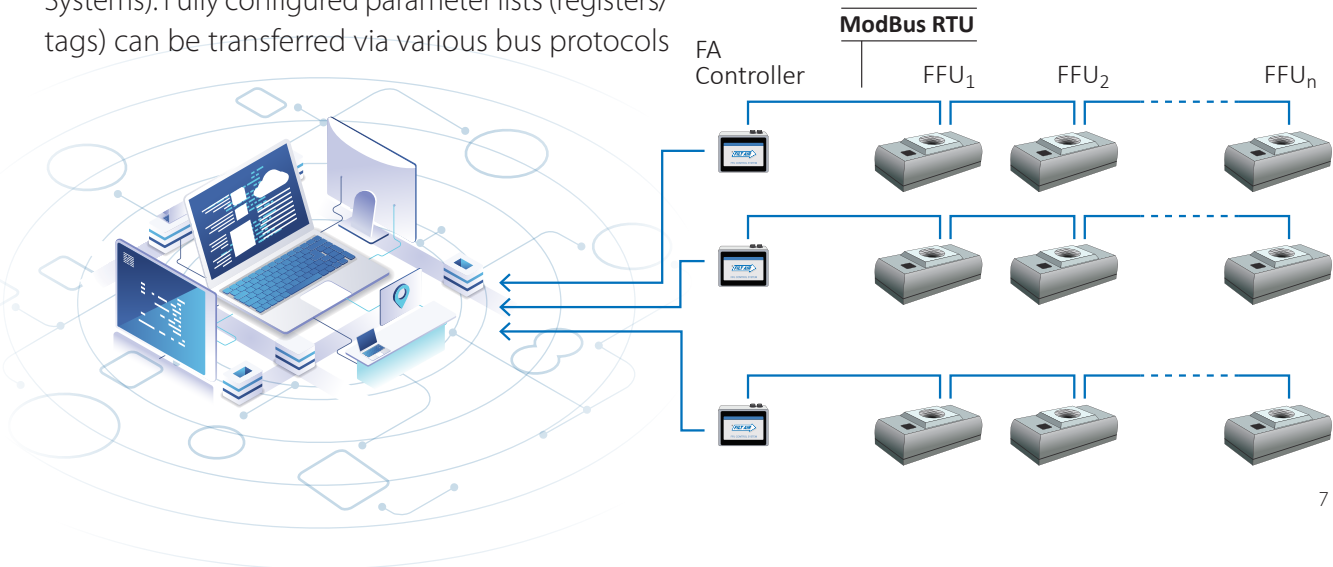
user friendly environment without needing any other configuration.



6. Controlling by connecting to a BMS

The Filt Air controller offers a wide range of options for exchanging data with BMS (Building Management Systems). Fully configured parameter lists (registers/tags) can be transferred via various bus protocols

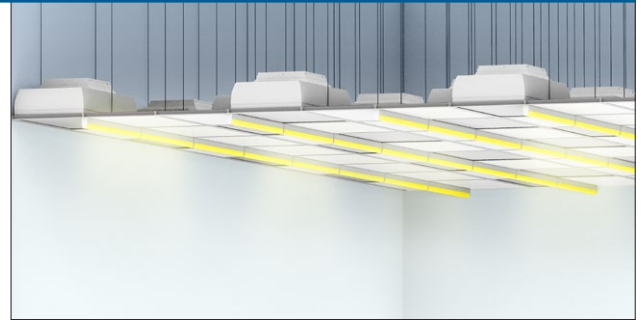
such as Modbus TCP/IP, Modbus RTU, OPC UA and others.



Cleanroom Lighting Add-on (CLA)

Simplify cleanroom installation with integrated lighting solutions

Get a drastic reduction of labor and material costs by adding highly efficient LED lights directly into the FFU systems power and data network.



Savings

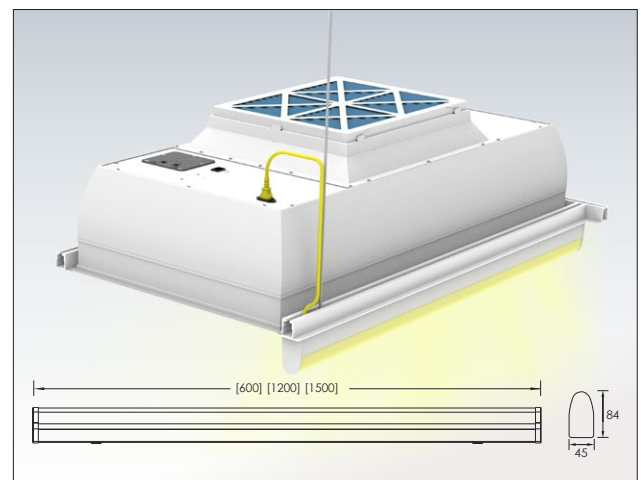
By using the Cleanroom Lighting Add-On	
Installation of Power Cables	No wiring is required for lighting; up to 10 lights can be connected and plugged into one FFU.
Installation of control Cables	No wiring is required for lighting; control is handled via the bus system of the FFU's.
Circuit breakers, Contactors	It's completely needless, the lighting is connected with the FFU's.
Electrical cabinet	By eliminating the switching devices for the lighting, the space required in the control cabinet is reduced drastically.
Lightening Control	The complete lighting control system becomes unnecessary because its functions are taken over by the powerful capabilities of the FFU control system.

The LED Light

The new LED light from Filt Air combines state-of-the-art industrial light design with the specific requirements of a cleanroom. It features a compact and smooth housing design that minimizes dust accumulation in cleanrooms.

Key Features and Benefits

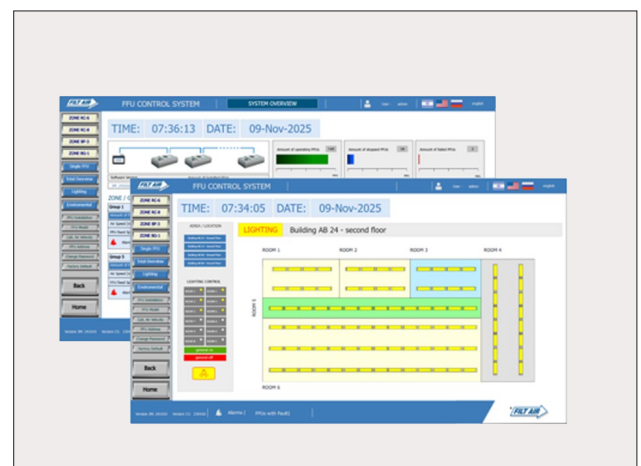
- Ceiling mounting, suitable for clean room class ISO 4 to 8
- Flicker-Free, CRI>80 & SDCM<5
- High lumen LEDs up to 100,000 hours lifespan
- Waterproof (IP65) & Impact-resistant (IK05)
- Easy splice with Patent designed plug-ins
- Compliant to EEC C/D, Directive (EU) 2019/2020



The Lighting Control

The lighting control is completely handled by the FFU control system. This means that all existing functionalities are available without restriction.

- Access via a wide variety of control devices
- Energy-saving and standby functions (night dimming, partial shutdown at night)
- occupancy sensing control
- Integration of manual switching devices



Cleanroom Monitoring Add- on (CMA)

Innovate your cleanroom - upgrade it to a smarter system

Our product idea is more than just connecting a sensor; It enables smarter and more efficient cleanroom operations

by transforming the FFU system from a collection of isolated air filtration units into an intelligent environmental management platform.

Savings

By using the Cleanroom Monitoring Add-On	
Cable Installation	Greatly simplified by plugging it into the next FFU.
Displaying of the Values	No hardware is required by using the existing equipment of the FFU system.
Software	All monitoring, control and data acquisition tasks are handled by the FFU system.
Engineering Time	Savings through the use of standardized and ready-made Program blocks.

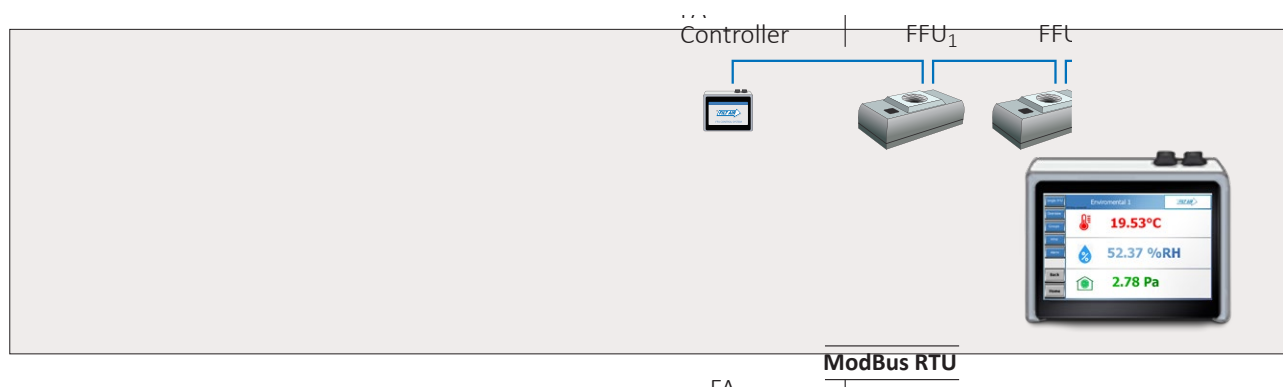
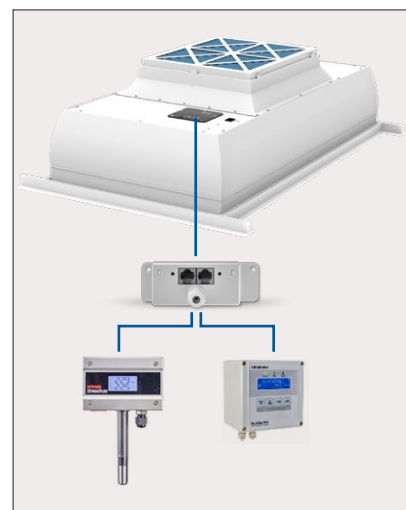
Since the FFU network is already in place, integrating new sensors is straightforward - Simply plug up to 2 sensors into any FFU via the Filt Air sensor adapter.

Alternatively, there is the Filt Air I/O Box, which allows all types of sensors and measuring devices to be connected to the FFU bus system independently of an FFU.

Utilize the capabilities of the powerful FFU Control System

Sensor data – from humidity and temperature to differential pressure – are displayed by the FFU control system and according to the projects requirements logged and time-stamped.

The entire concept makes perfect sense - safe cleanroom operation requires the seamless integration of FFU control and room monitoring.



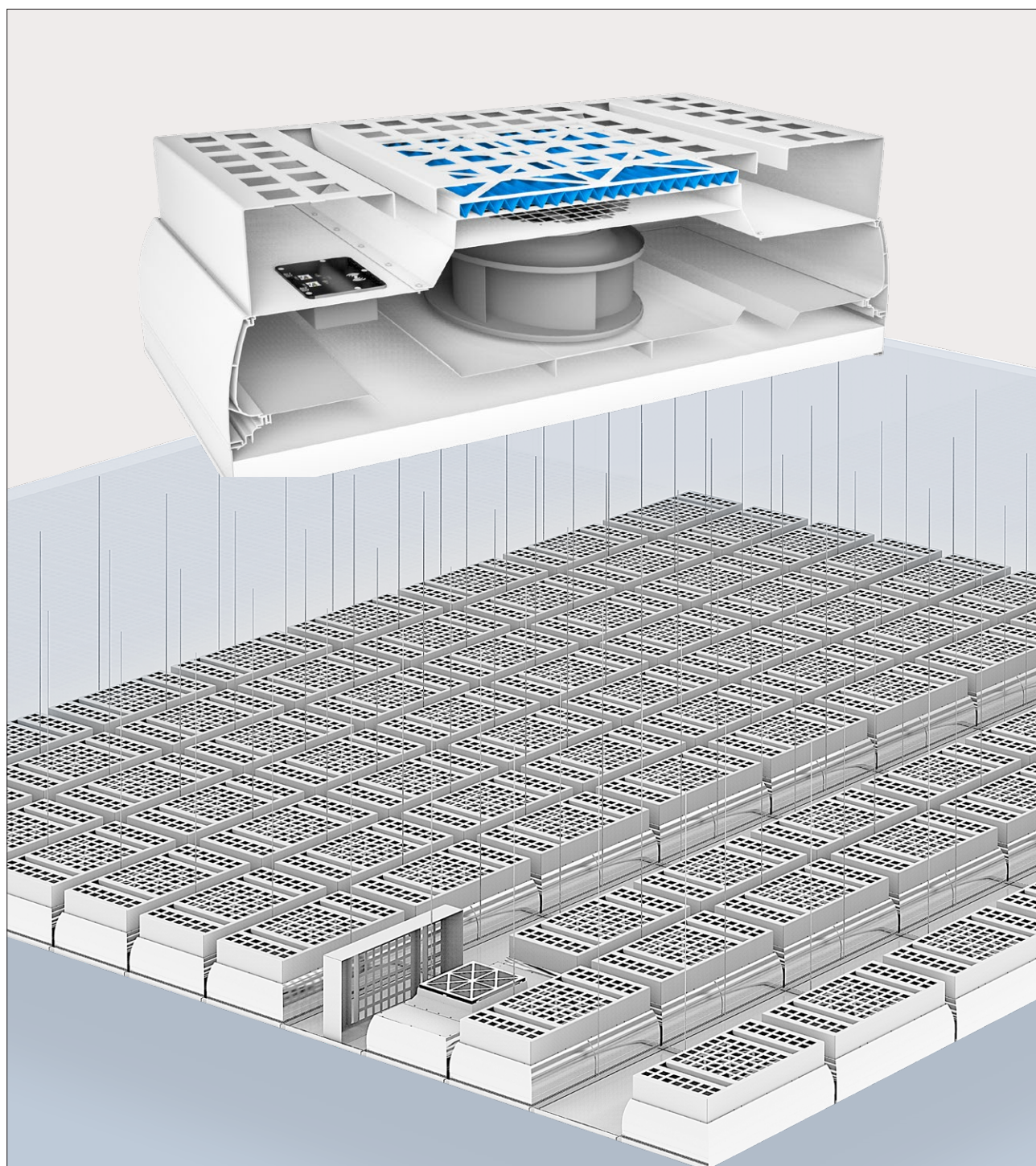
Accessibility during installation & maintenance

Fully walkable access area for installation and maintenance.

Most FFU's are very limited in their access for walkable space. Because of the metal mesh protecting the Pre-Filter, our FFU's allow full area access to walk among

them without damaging the easily damageable filters or electronic controls.

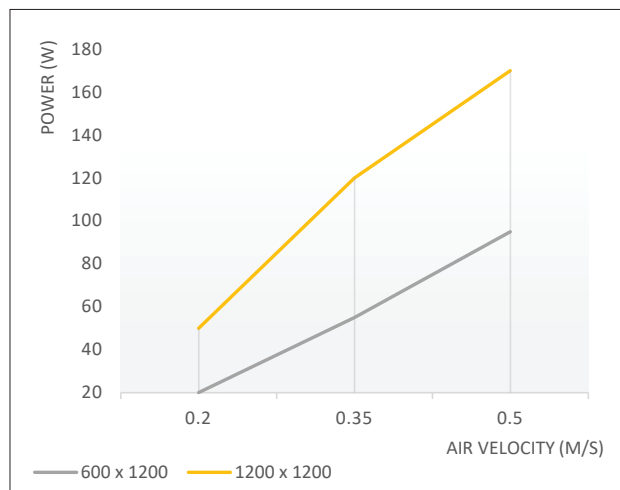
The walkable add-on allows a max. carry weight of 150 kg. Made of AL5052 $t = 2.5\text{mm}$.



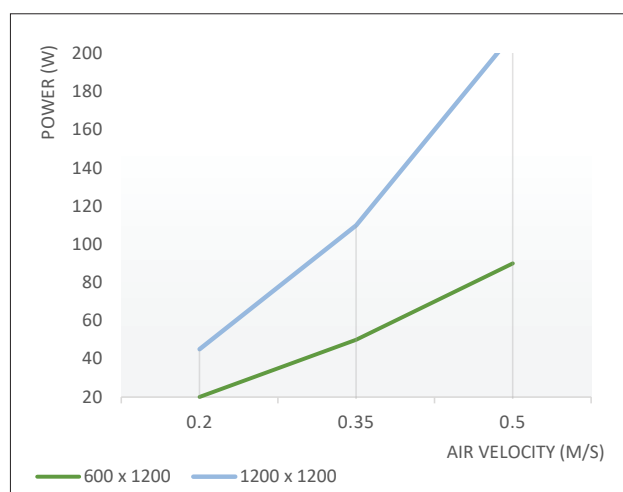
Technical Data

Size	mm	AQ	ID
Housing	mm	1200 x 600	1200 x 1200
Weight	kg	29	57
Standard			
Voltage/Phase	V/ph	230/1	230/1
Frequency	Hz	50/60	50/60
Media Pack	mm	47/56	47/56
Nominal Power Consumption	W	55	120
Rotation Speed Max	RPM	1400	1400
Operation Temp.	°C	0-50	0-50
Nominal Air Velocity	m/s	0.35	0.35
Air Volume	m ³ /h	850	1750
Sound Level	dB(A)	46	49
Premium			
Voltage/Phase	V/ph	230/1	230/1
Frequency	Hz	50/60	50/60
Media Pack	mm	47/56	47/56
Nominal Power Consumption	W	50	110
Rotation Speed Max	RPM	1340	1340
Operation Temp.	°C	0-50	0-50
Nominal Air Velocity	m/s	0.35	0.35
Air Volume	m ³ /h	850	1750
Sound Level	dB(A)	43	47

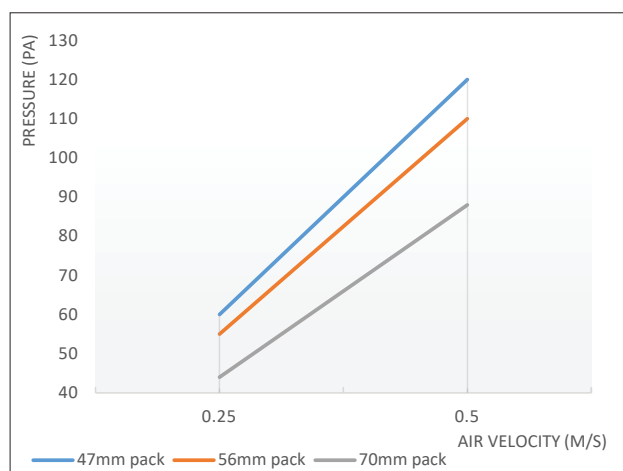
Standard - Power Consumption Chart



Premium - Power Consumption Chart

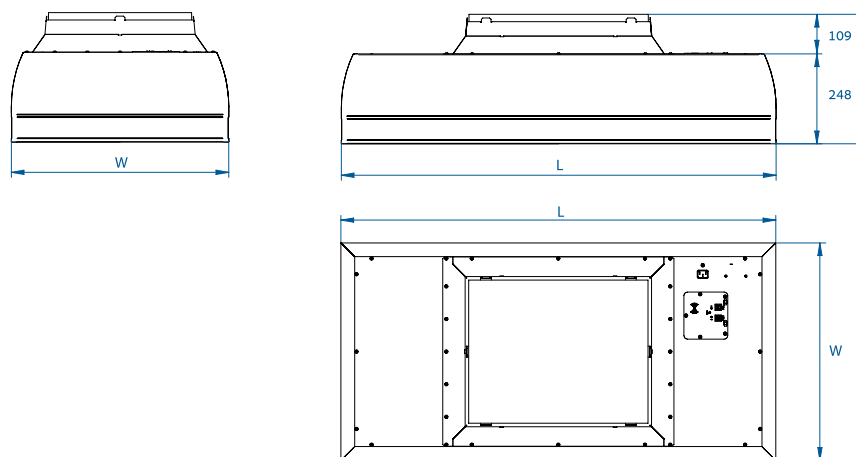


Pressure vs. Air Velocity / H13 eff. Media

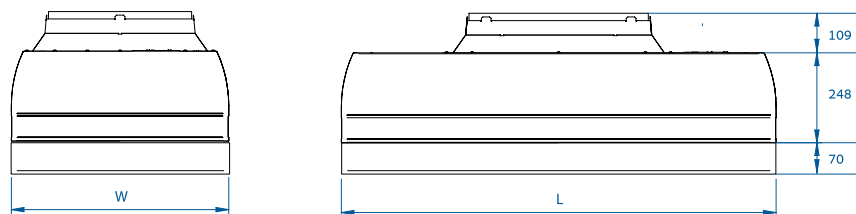


Dimensional Drawing:

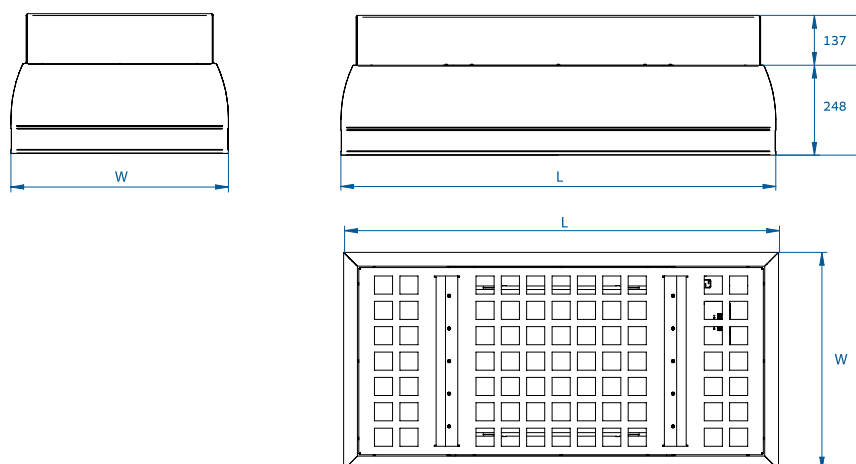
For Integrated Filter and RSR configurations



For Panel HEPA Filter configurations



For Walkable FFU configurations



* Multiple selection allowed (e.g., - WS), Use 0 if no Special Option is selected



Nice to meet you

FILT AIR Ltd. is a global leader in air filtration solutions, specializing in advanced technologies to ensure clean air for industries such as high-tech clean rooms, microelectronics, and pharmaceuticals.

Established in 1998 as a subsidiary of Beth-El Zikhron Yaaqov Industries Ltd., FILT AIR has expanded its product range to serve a wide array of clients, including hospitals, industrial plants, commercial buildings, and power plants equipped with gas turbines.

Our products are designed to meet the highest standards of quality, safety, and reliability, while offering competitive pricing. Certified under ISO 9001 since 2001 (IQNet: IL-24203), FILT AIR upholds a rigorous quality management system that guarantees excellence from raw materials to finished products.

We take pride in our collaborative approach, working closely with customers and suppliers to deliver clean air solutions tailored to specific needs. Our research and development team ensures we stay at the forefront of innovation, focusing on environmentally friendly processes and solutions that meet the latest technological standards. At FILT AIR, customer satisfaction is our top priority.



Whether you need HEPA/ULPA filtration, pre-filtration, or custom-designed systems, our experts are here to help you find the right solution. We are committed to providing high-quality products without compromise, ensuring optimal performance for every application.



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