

Nanoclass FFU Select



Leadership in Filtration

MANN+
HUMMEL

Nanoclass FFU Select

SELF CONTAINED, CEILING-FILTER FAN MODULE

Nanoclass FFU Select combines both ease of use and flexibility, so you can achieve the best possible contamination control in your cleanroom.

Each fan-filter unit can be controlled individually while also integrated into the overall system, meaning that clean zones - even with different cleanliness classes - can be set up easily and flexibly according to your specific requirements.

MANN+HUMMEL fan-filter units are compatible with most common ceiling systems, and integrate seamlessly into cleanroom machines or systems. Nanoclass FFU Select is ideal for use in microelectronics, the optical industry, biotechnology, and the food and beverage industry.



KEY FACTS

- Six standard sizes: 540, 570, 840, 870, 1140 and 1170 mm
- Custom dimensions also available
- Sound-optimized design
- Energy-efficient MODBUS EC centrifugal fans
- Available in filter classes H14 to U17
- Glass fiber and ePTFE filter media



DESIGN AND STANDARD SPECIFICATION

As standard, Nanoclass FFU Select housings are made from 1.5 mm thick untreated aluminum. Other thicknesses and materials – such as stainless steel and powder coatings (e.g. RAL9010) – are also available.

Optimized air flow and integrated sound absorbers ensure a low sound output at all operating points. So much so, that several fan-filter units can be used in combination even in sound-sensitive areas.

Nanoclass FFU Select is available in the six common grid sizes 0606, 0609, 0612, 0909, 0912 and 1212. Our product range includes the common standards 570, 870 and 1,170 mm as well as 540, 840 and 1,140 mm (dimensions include HEPA filters). All data on the sound values of the FFUs and on the initial pressure differences of the HEPA filters refer to the 570, 870 and 1,170 mm configurations.

For easy handling, each unit has two or four handles on top, depending on the size of the housing. Our standard

FFU HEPA filters have a heavy-duty frame made of extruded, anodized aluminum and allow filter change from above. Filters are available in heights of 86, 109 and 134 mm, depending on the desired initial pressure drop. Filter change from below on the cleanroom side is also possible. For further details, please refer to the Options section.

DRIVE TECHNOLOGY

We rely on proven, energy-efficient drives that are made in Germany and use modern, backward-curved EC centrifugal fans – with MODBUS-RTU interface and 0 – 10 V analog input. Here, the setpoint source can be changed from 0 – 10 V (factory setting) to MODBUS-RTU.

Alternatively, we offer MODBUS-RTU units with DCI (daisy chain interface) function for auto-addressing. These units are all shipped with a factory preset identical addresses. The DCI addressing automatically assigns unique network addresses for MODBUS communication.

Nanoclass FFU Select: air filtration

THE HIGHEST POSSIBLE STANDARDS AND SAFETY

Nanoclass FFU Select is equipped with high quality HEPA or ULPA filter elements of classes H14 - U17 according to EN 1822.

To ensure high efficiencies, zero leakage and smooth commissioning, every MANN+HUMMEL HEPA and ULPA filter is factory tested according to all applicable standards.

As an alternative to the traditional glass fiber media, ePTFE HEPA and ULPA filters with extremely low initial pressure drop performance can be specified as an option.

We also offer various prefilters (coarse and fine) and high performance molecular filters for almost any application.



Standard HEPA filter with knife-edge frame (*left*) for filter change from above (plenum side). HEPA filter with gel seal (*above*) for filter change from below (cleanroom side).



Options

- Adapter between the FFU housing and filter element for cleanroom-side HEPA filter change
- Prefilter in coarse and fine dust classifications
- Prefilter frame available in dimensions of 750 x 750 x 80, 500 x 500 x 80 or 450 x 380 x 80 mm
- High performance molecular filters
- Coolers in various designs according to customer requirements
- MODBUS DCI instead of MODBUS / 0-10 V
- EBM Flowgrid to further reduce the sound output level
- Additional sound dampening mat on the air distribution plate
- Stainless steel housing
- Powder coatings, e.g. RAL9010
- Power cables and plugs
- Bus cable e.g. CAT5 in various lengths
- Aerosol inlet and outlet
- 0-10 V potentiometer
- Various control systems



Technical data

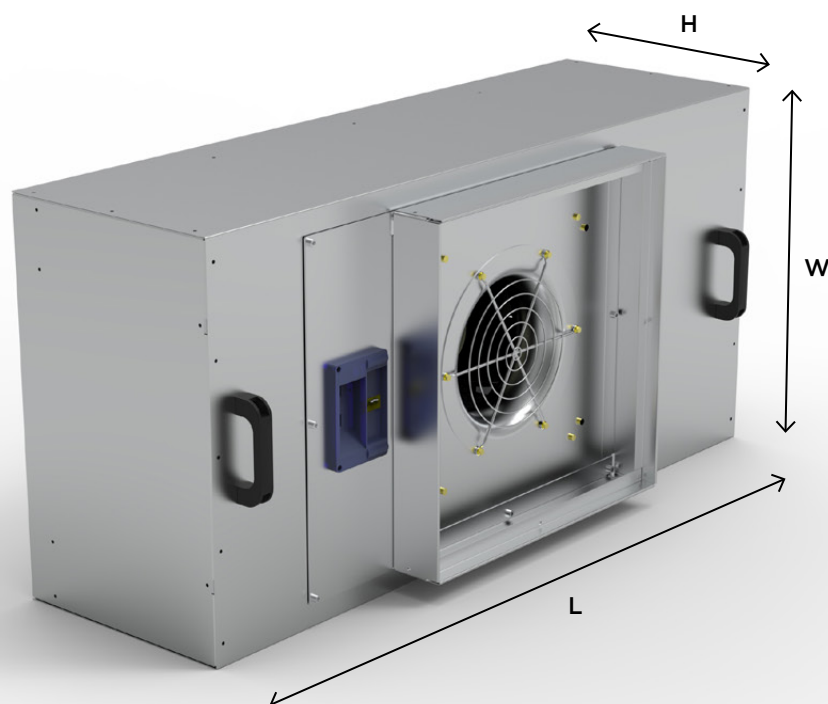
Grid	Grid FFU housing (350 mm) incl. handles (40 mm) L x W x H mm	Incl. 86 mm HEPA filter with knife-edge frame (86 mm)* L x W x H mm	Plus prefilter assembly (80 mm) L x W x H mm	Plus Coarse prefilter with 46 mm frame L x W x H mm	Air volume at 0.45 m/s related to HEPA filter m ³ /h	Air volume at 0.45 m/s related to the grid m ³ /h
606	562 x 562 x 390	570 x 570 x 460	570 x 570 x 500	570 x 570 x 525	526	583
609	862 x 562 x 390	870 x 570 x 460	870 x 570 x 500	870 x 570 x 525	803	875
612	1162 x 562 x 390	1170 x 570 x 460	1170 x 570 x 500	1170 x 570 x 525	1080	1166
909	862 x 862 x 390	870 x 870 x 460	870 x 870 x 500	870 x 870 x 525	1226	1312
912	1162 x 862 x 390	1170 x 870 x 460	1170 x 870 x 500	1170 x 870 x 525	1649	1750
1212	1162 x 1162 x 390	1170 x 1170 x 460	1170 x 1170 x 500	1170 x 1170 x 525	2218	2333

*Remarks

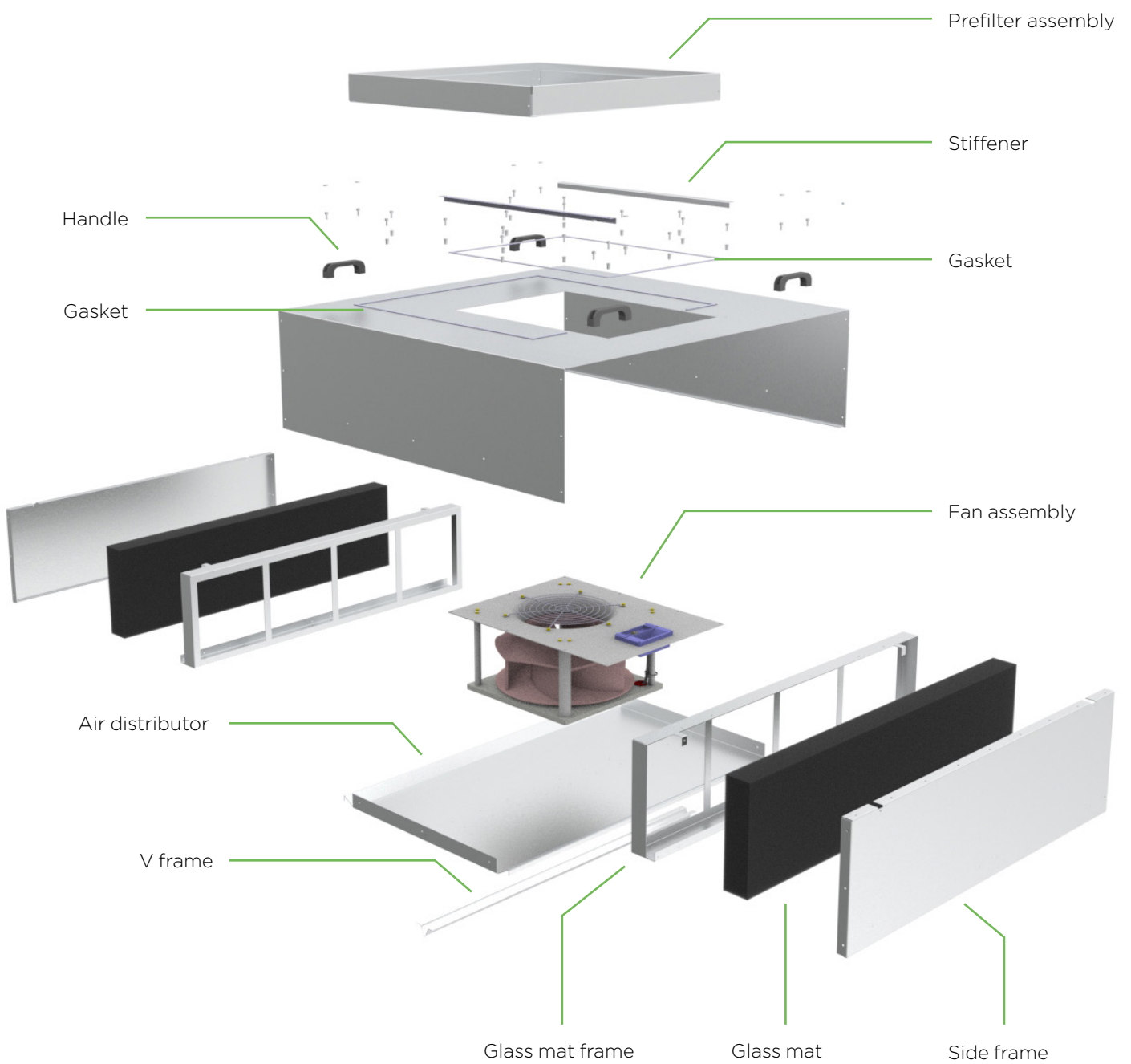
With 109 mm HEPA filter with knife-edge frame instead of 86 mm = overall height + 23 mm

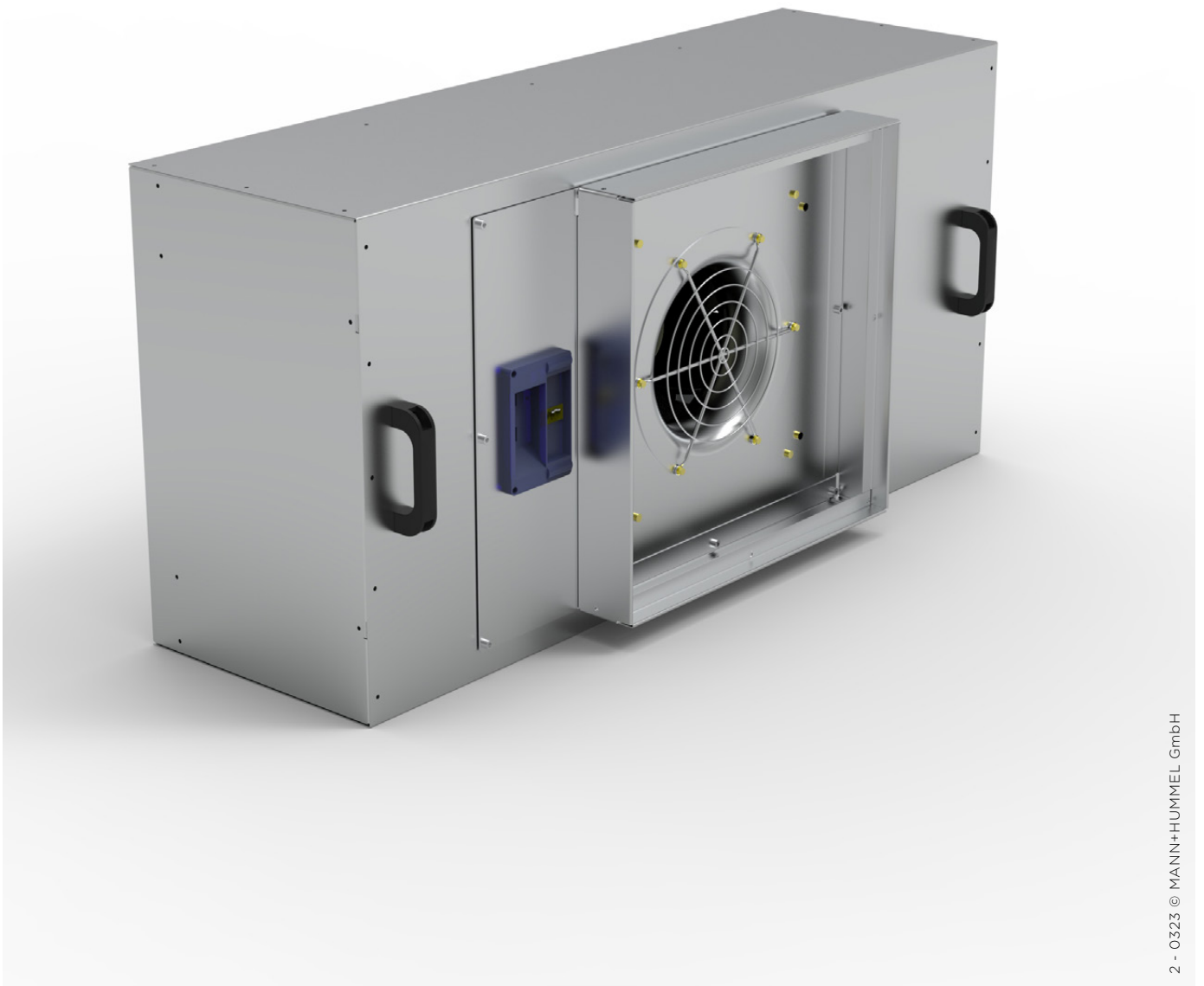
With 134 mm HEPA filter with knife-edge frame instead of 86 mm = overall height + 48 mm

DIMENSIONS



Parts





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