



FET SYSTEM

TEST RIGS FOR FILTER ELEMENTS

Flexible and precise

Made in Germany

Quality control for filter elements: **FET SYSTEM**

The test rigs of the **FET SYSTEMS** enable a reliable control of complete filter elements up to a size of 610 • 610 • 610 mm. This allows you to effectively and reliably ensure the quality of your products.

Our test equipment tests better than required by numerous standards, e. g. ISO 16890, ISO 11155, ISO 5011, ASHRAE 52.2, ISO 29463-3/-5 or EN 1822-3/-5.

In addition to total penetration, pressure drop across the filter elements and loading, the **FET SYSTEMS** test rigs determine fractional collection efficiency over a size range of 0.02 to 40 µm.

The **FET SYSTEM** includes three models adapted to the different sizes of filter elements:

- **FET 100** for small filter elements up to a cross-sectional area of 100 • 100 mm
- **FET 300** for medium filter elements up to a cross-sectional area of 300 • 300 mm
- **FET 600** for large filter elements up to a cross-sectional area of 610 • 610 mm

Application examples



PASSENGER COMPARTMENT FILTER



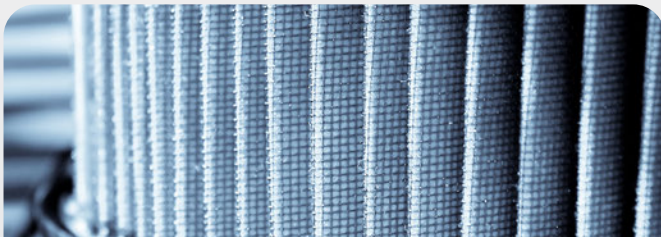
HEPA/ULPA CLEAN ROOM FILTER



ROOM AIR FILTER



CABIN FILTER



ENGINE AIR FILTER



COMPRESSOR SUPPLY AIR FILTER

Principle of operation

With our technology, we can count particles of very small size. The total efficiency is tested as well as the fractional separation efficiency, i. e. the efficiency over the particle size or the particle size-dependent penetration. Differential pressure measurements and loading tests or gravimetric measurements based on different standards are also possible.

For efficiency measurements, the instrument works with different dust, salt, oil as well as latex aerosols over a size range from 0.02 to 40 μm .

Thanks to individual adapters and customer-specific adaptations in the air duct, the **FET SYSTEM** can be used for a wide variety of filter elements. Special designs and special functions are available on request.



FET SYSTEM

The **FET SYSTEM** consists of three models adapted to the different sizes of filter elements being tested.

The test procedures follow relevant standards for e. g. indoor (ISO 16890, ASHRAE 52.2 or ISO 11155), HEPA (EN 1822-3/-5 or ISO 29463-3/-5) or air inlet filters (ISO 5011) to determine filter efficiency and flow resistance.

FET 100 FOR SMALL FILTER ELEMENTS UP TO A CROSS-SECTIONAL AREA OF 100 • 100 MM

- Compact test rig in compressed air mode
- Testing with dust, salt, oil or latex aerosols

FET 300 FOR MEDIUM FILTER ELEMENTS UP TO A CROSS-SECTIONAL AREA OF 300 • 300 MM

- Easy change of filter elements
- Testing with dust, salt, oil or latex aerosols

FET 600 FOR LARGE FILTER ELEMENTS UP TO A CROSS-SECTIONAL AREA OF 610 • 610 MM

- Measurement setup with customized filter adapters
- Testing with dust, salt, oil or latex aerosols

Special advantages and benefits

ACCURATE, VERSATILE TESTING

- Measurement according to ISO 29463-5 and 29463-3, as well as ISO 16890 (ISO ePM₁; ISO ePM_{2.5}; ISO ePM₁₀) in one channel possible (depending on model)
- Dual channels on request
- Particularly wide range of application for separation efficiency measurement from 0.02 to 40 µm
- Measurement of dust holding capacity possible (FET 100, FET 300)

FLEXIBILITY AND EASE OF USE

- Customization of filter adapters, flow channel and measuring ranges possible for optimal test performance
- Modular compact design for small filter elements, low space requirement
- Horizontal design for minimization of particle losses
- Calibration of raw gas/pure gas not necessary, because only one sampling and one measuring device is used

SAFETY

- Logged results based on relevant standards
- Factory tested and calibrated test stands

Technical features

Measuring range (total penetration)	Up to 0.0005 %
Measurement range (size)	0.02 – 40 µm (others on request)
Volume flow	1 – 27 m ³ /h (FET 100) 20 – 200 m ³ /h (FET 300) (others on request) 150 – 1,500 m ³ /h (FET 600) (others on request)
Differential pressure measurement*	Customization possible 0 – 1,200 Pa selectable 0 – 2,500 Pa selectable 0 – 5,000 Pa selectable
Size filter element (H • W • D)	Customization possible 100 • 100 • 100 mm (FET 100) 300 • 300 • 300 mm (FET 300) 610 • 610 • 610 mm (FET 600)
Aerosols	Dusts (e. g. SAE dusts), salts (e. g. NaCl, KCl), liquid aerosols (e. g. DEHS), latex particles (PSL)



As an aerosol technology expert, Palas® Germany is committed to providing users with solutions for the generation, conditioning, measurement and analysis of aerosol particles. Based on the unique advantages of its own technology, Palas® developed a variety of application cases in ambient air quality monitoring, particle filtration performance testing and various scientific research fields. Palas Instruments (Shanghai) Co., Ltd. is a wholly owned subsidiary of Hong Kong Palas (Asia) Limited. As one of the global branches of Palas GmbH, it has legally obtained the Palas trademark authorized by Palas GmbH in Exclusive use rights in China and Asia.

As a company that has passed the ISO 9001:2015 quality management system certification, Palas®'s test rig solutions can execute particle filtration performance tests for filter media and filter elements according to applicable international, national and regional standards. In terms of environmental protection, Palas®'s equipment meets the requirements of multiple environmental monitoring standards (EN 15267, EN 16450, HJ653, GBZ/T 192.6, etc.) for indoor and ambient PM2.5, PM10, particle number size distribution monitoring and analysis.

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