PALAS®

PMFT System

# RESPIRATORY MASK TESTING

## Reliable and Precise

*Made in Germany*

# Quality Control for Masks: PMFT System

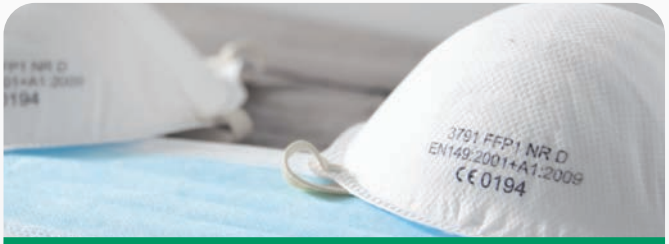
**The filter test rigs PMFT System enable a reliable control of masks and filter material. This allows you to effectively ensure the quality of your products. Palas test instruments test better than required by EN 149, EN 13274-7 and GB 2626 standards for face masks, and 42 CFR 84, ISO 16900-3 and EN 143 for full face mask filters.**

The PMFT Systems does not only test overall penetration and breathing resistance/ pressure drop, but also fractional efficiency in the size range between 100 nm and 5 µm.

The PMFT System includes three models for different needs:

- PMFT 1000 for development and production monitoring of half masks
- PMFT 1000 M for reliable continuous operation in routine monitoring of half masks
- PMFT 1000 F as an all-rounder in the testing of almost all mask and filter types

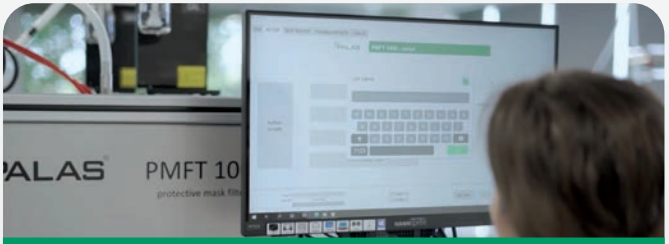
# Application Examples




FACE MASK MANUFACTURER

FULL PROTECTION
MASK MANUFACTURER

FILTER MEDIA MANUFACTURER




TESTING INSTITUTES

REGULATORY AUTHORITY

MEDICAL FACILITIES

# Principle of Operation

Palas proven technology allows the counting of particles of very small sizes. The device can detect and measure in the size range of viruses and bacteria. Both total penetration and fractional efficiency are tested e. g., the efficiency in the whole size range respectively the particle size-dependent penetration.

The **PMFT System** is future-proof: It works with salt, oil and latex aerosols when measuring penetration. It is also capable of measuring differential pressure at various breathing resistances.

Thanks to the individual filter adapter, **PMFT System** can be used for all kinds of protective masks and is also easy to handle.

# PMFT System

The photometric total penetration for the size range is determined according to standard. A best comparability with the standards EN 149, EN 13274-7, 42 CFR 84, ISO 16900-3, ASTM F2299-3, ASTM F3502-21 and GB 2626 exists.

In addition, the breathing resistance is determined by differential pressure measurement.

**PMFT 1000** FOR DEVELOPMENT AND PRODUCTION MONITORING OF HALF MASKS

- Exact analysis of filter mask efficiency from 100 nm up to 3 µm (size range photometer: from 100 nm up to 40 µm)
- 8 size channels for efficiency from 100 nm up to 180 nm

**PMFT 1000 M** FOR RELIABLE CONTINUOUS OPERATION IN ROUTINE MONITORING OF HALF MASKS

- Exact analysis of filter mask efficiency from 145 nm up to 5 µm (size range photometer: from 145 nm up to 40 µm)
- Long-lasting and robust LED light source

**PMFT 1000 F** AS AN ALL-ROUNDER IN THE TESTING OF ALMOST ALL MASK AND FILTER TYPES

Additional to PMFT 1000 M

- Testing of respiratory filters with an efficiency of up to 99.9995 % and a penetration of 0.0005 % respectively
- Comparability with standards EN 143 and ISO 16900-3

# Special Advantages and Benefits

### Flexibility

- Verification of production easily in-house based on defined standards
- Continuous optimization of the R&D process and production
- For comparability with other standards to measure fractional efficiency by size and to export as text file, e. g., for ISO 29463-3, ISO 11155-1, ISO 16890-2, please contact us for more information

### Speed of testing

- Reliable quality assurance due to easy operation
- Uncomplicated changeover due to supplied mask and filter adapters
- No waiting for test results from external institutes

### Safety

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

# Technical Features

| | |
|---|---|
| **Measuring range (total penetration)** | 0.0005–100 % |
| **Measuring range (size) particle size dependent penetration** | 0.1–3 µm (PMFT 1000), 0.1–40 µm (aerosol photometer)<br>0.145–5 µm (PMFT 1000 M, F), 0.145–40 µm (aerosol photometer) |
| **Aerosols** | Salts (e. g., NaCl, KCl), liquid aerosols (e. g., DEHS),<br>latex particles (PSL) |
| **Test area of the medium** | 100 $cm^2$ |
| **Volume flow** | 1–27 $m^3/h$ (pressurized operation) |
| **Inflow velocity** | 1.5–70 cm/s (others on request) |
| **Differential pressure measurement** | 0–1,200 Pa |
| **Compressed air supply** | 6–8 bar |
| **Dilution factor** | 1:27 (PMFT 1000, 1000 M)<br>1:27 / 1:700 (PMFT 1000 F) |
| **Discharge** | Integrated (PMFT 1000 F)<br>optional (PMFT 1000, 1000 M) |
| **Dimensions (H • W • D)** | 1,800 • 600 • 900 mm |

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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