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:

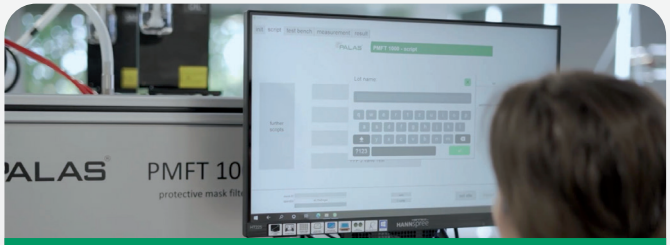
- **PMFT 1000** for development and production monitoring of half masks
- **PMFT 1000 M** for reliable continuous operation in routine monitoring of half masks
- **PMFT 1000 F** as an all-rounder in the testing of almost all mask and filter types

# 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, 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 – 0.1 % |
| **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) |
| **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 |
| **Test area of the medium** | 100 $cm^2$ |
| **Aerosols** | Salts (e. g., NaCl, KCl), liquid aerosols (e. g., DEHS), latex particles (PSL) |
| **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 |

Subject to technical changes

Palas® is a leading developer and manufacturer of highprecision instruments for the generation, measurement and characterization of particles in air.

With more than 30 active patents, Palas® develops technologically leading and certified fine dust and nanoparticle analyzers, aerosol spectrometers, generators and sensors as well as related systems and software solutions. Palas® was founded in 1983 and employs more than 100 people.

**Palas GmbH**
Greschbachstrasse 3 b | 76229 Karlsruhe | Germany
Phone: +49 721 96213-0 | Fax: +49 721 96213-33
**www.palas.de**

Version: December 2021