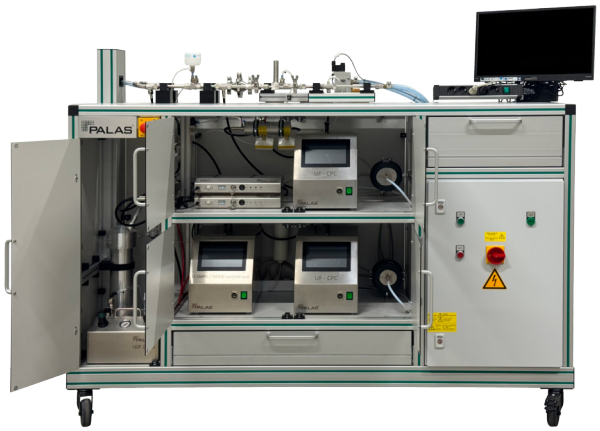
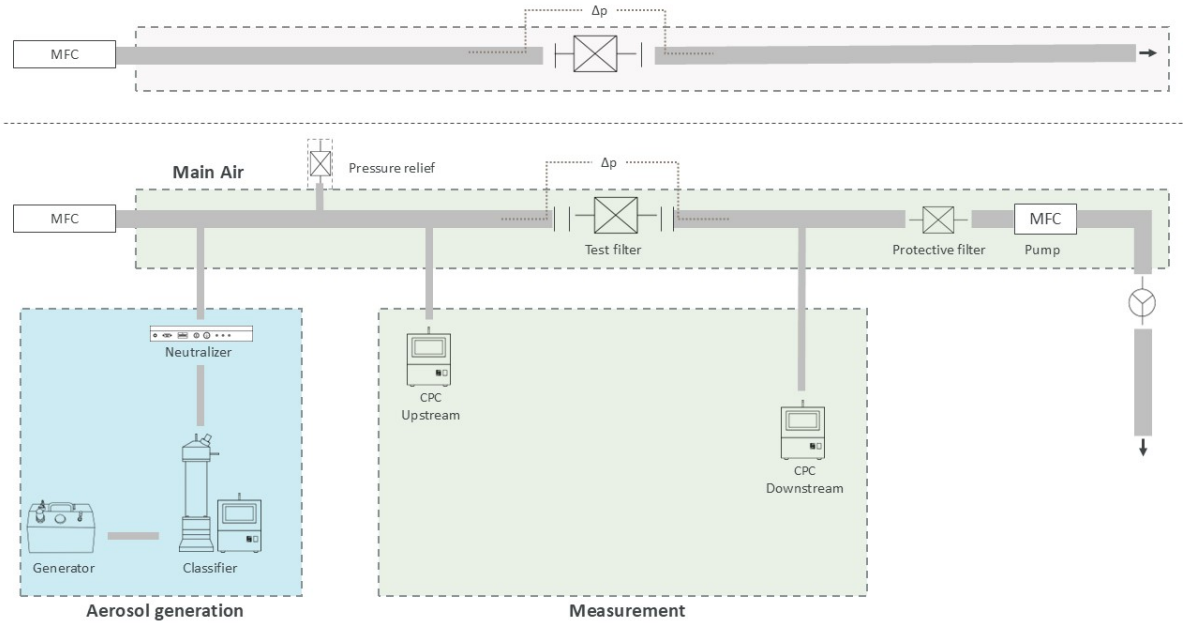
SCFT 4000



The SCFT 4000 consists of two independent test ducts, designed to cover the full range of filter testing requirements for semiconductor applications. Duct 1 enables differential pressure and flow testing at pressures up to 5 bar overpressure. Duct 2 delivers high-precision filter efficiency measurements for particle sizes down to 50 nm — making it suitable for the most demanding ULPA filter applications. Both ducts are designed for quick and easy filter sample exchange.

OPERATION PRINCIPLE



Duct 1 — Differential Pressure & Flow Testing

Duct 1 operates in pressure mode using nitrogen or compressed air. Gas flow is precisely controlled via Mass Flow Controllers, while absolute pressure is automatically adjusted to the required value — from ambient conditions up to 5 bar overpressure. Once flow conditions have stabilized, the differential pressure across the test sample is recorded.

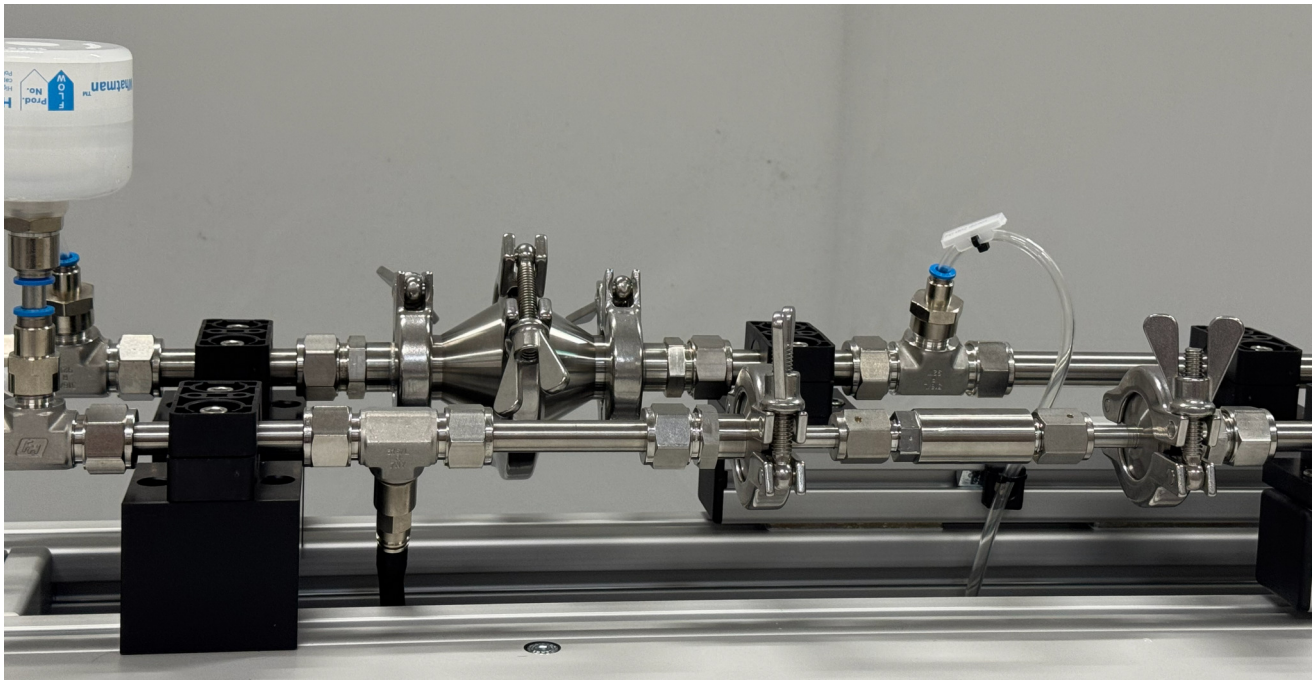
Duct 2 — Filter Efficiency Testing

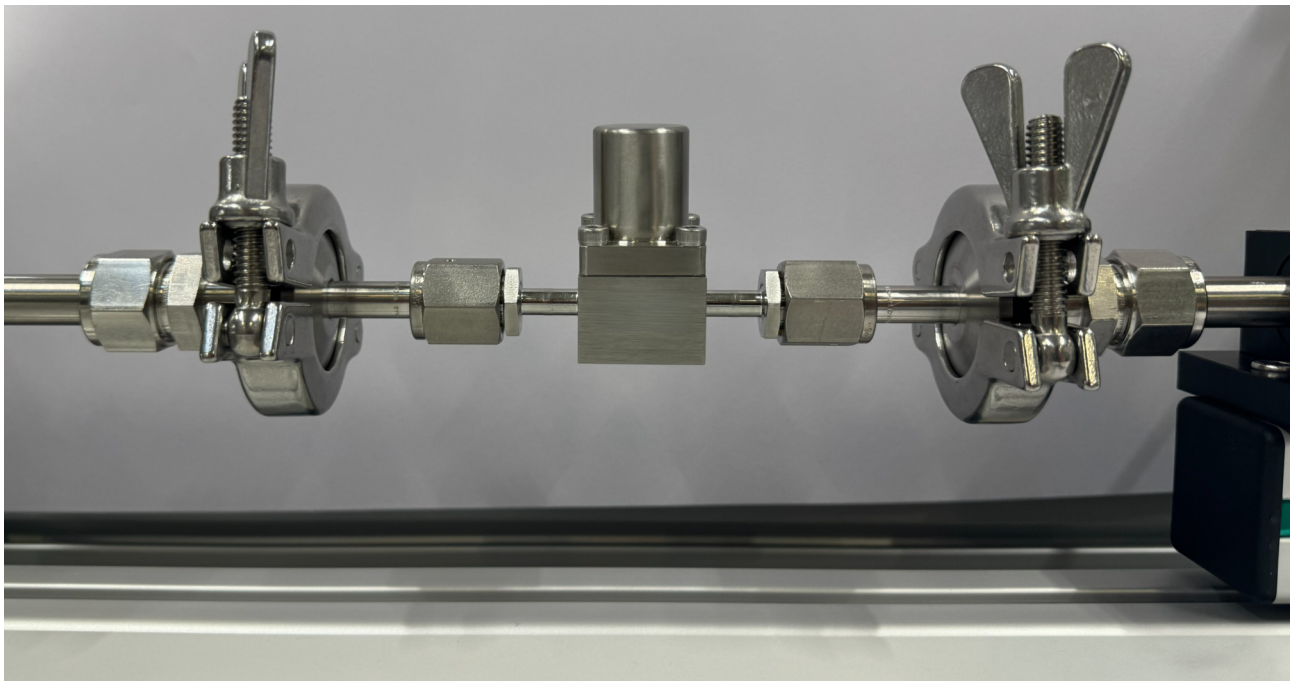
Duct 2 operates in suction mode. After installation of the filter sample, air is drawn through the filter. On the upstream side, a test aerosol is introduced via the Aerosol Generator UGF 2000. Monodisperse test particles are classified using the Palas DEMC 1000, and two X-Ray sources (XRC 049) ensure electrically neutral test particles prior to entering the test duct.

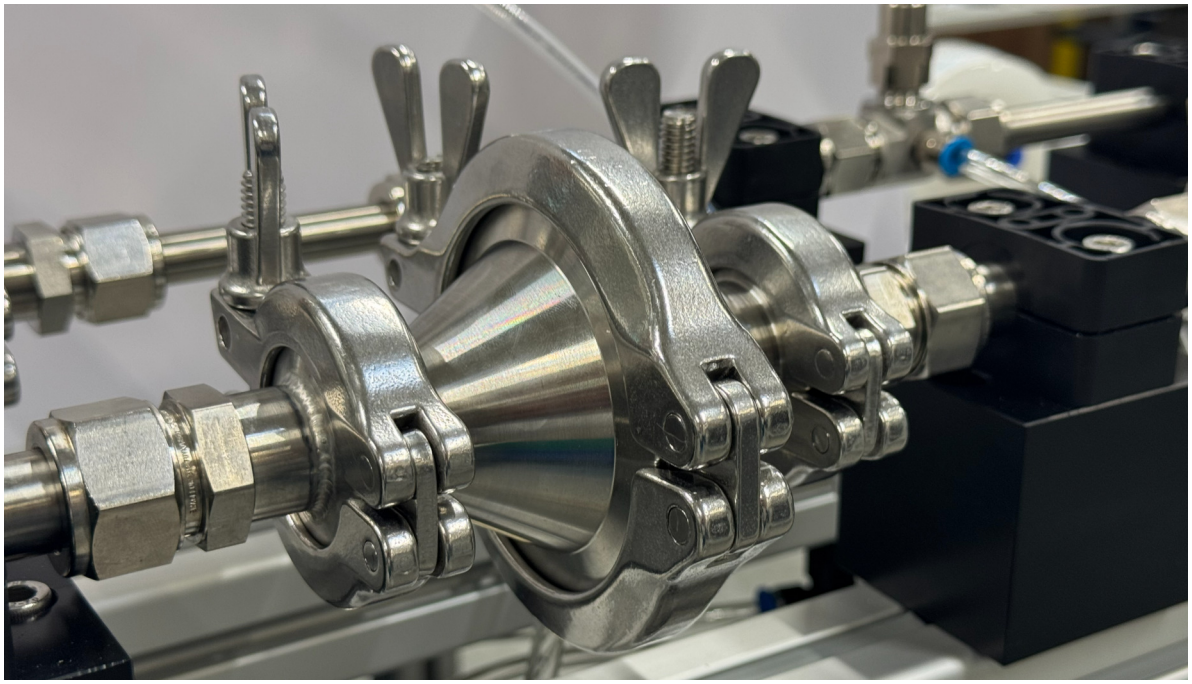
Particle concentration is measured simultaneously upstream and downstream using two Condensation Particle Counters (CPC/CNC): a UF-CPC 100 (up to 100,000 P/cm³) for upstream and a UF-CPC 50 (up to 10,000 P/cm³) for downstream. This simultaneous measurement approach is essential for reliable efficiency results — particularly for ULPA-grade filters where downstream concentrations are extremely low.

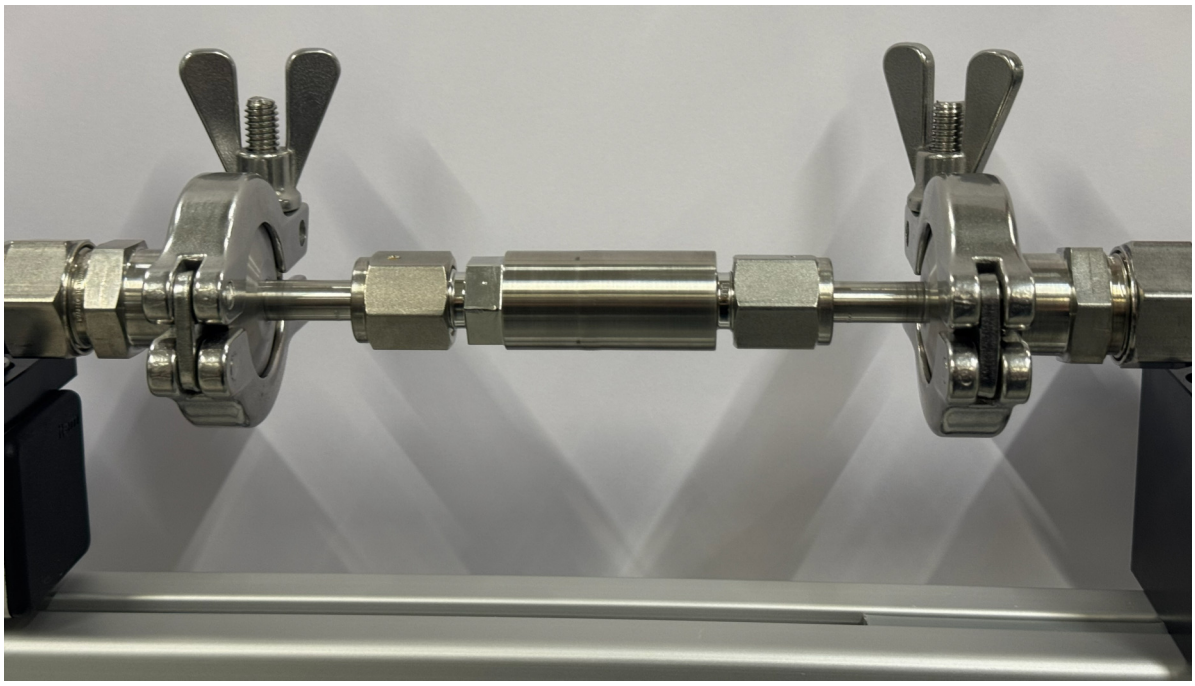
Test reports are generated and printed automatically upon completion of each measurement.

Different filter types and geometries can be mounted in the test stand using the appropriate holders:









BENEFITS

- Quick filter installation
- Automated measurement process
- Various filter types and materials can be tested

NORMS AND CERTIFICATES

ISO 29463-3, F38-0720

DATASHEET

Aerosols	NaCl
Volume flow	Duct 1: 0.5 l/min up to 200 l/min; Duct 2: 1 l/min up to 50 l/min
Power supply	115 – 230 V, 50/60 Hz
Carrier/dispersion gas	Compressed air or nitrogen (6-8 bar)
Differential pressure measurement	Duct 1: 0 - 200.000 Pa; Duct 2: 0 - 18.000 Pa
Dimensions	1620• 2,140 • 650 mm (H • B • T)

Applications

- Semiconductor & Microelectronics: Qualification of HEPA/ULPA filters for cleanroom environments in chip manufacturing
- Pharmaceutical & Biotech: Testing of sterile filters for aseptic processes and cleanroom applications
- Battery & Energy Technology: Filter qualification for the growing demands of lithium-ion battery cell production
- Nanotechnology & Advanced Materials: Filter testing for ultrafine particles in research and production environments
- Medical Devices & Life Sciences: Filter validation for medical-grade and sterile manufacturing environments
- Research & Development: Development and certification of new filter materials and filter media

Mehr Informationen:
https://www.palas.de/en/product/SCFT4000