TOPAS®
Technologie-orientierte Partikel-, Analysen- und Sensortechnik

HEPA Filter Element Quality Control Test System

AFC 132 QC HEPA

Filter test system AFC 132 / QC HEPA

Operating Principle

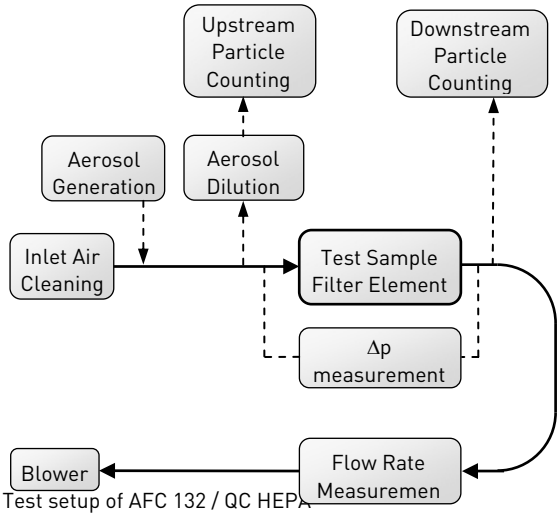
This air filter test system is designed to meet requirements of EN1822-4 Appendix E "efficiency leakage test for particle sizes from 0.3 µm to 0.5 µm". This part of the standard is related to filter elements which cannot be scanned due to its geometrical design. In this case determination of integral filtration efficiency is sufficient for quality control.
In comparison to the alternative oil thread test procedure this method gives much more reliable and much faster results on defective filter elements. Furthermore filters are much less loaded by test aerosol from the test procedure.
The required test aerosol is produced by a special aerosol generator (ATM 221) using standard DEHS test liquid. For upstream concentration measurement an second optical particle counter is used in combination with cascaded self-adjusting dilution systems (DIL 540/C). A parallel optical particle counter determines downstream particle number concentration. Resulting integral filter efficiency is compared to nominal filter efficiency giving a final "pass" or "fail" result to each tested filter.

Special Advantages

- Free configuration of target filter efficiency and pressure drop
- Customized filter adapter for different small HEPA filter elements, easy to change (5 min)
- Compact test system design
- High degree of automation for minimum operator interactions
- Designed for 24/7 production operation
- Fast cycle time (30 s) for short test time per filter
- Safety features for use in production
- Retraceable test data handling and documentation

Applications

- Efficiency testing of not scannable HEPA filter elements
- According to EN1822-4 Appendix E
- Confirmation of nominal HEPA filter class
- Suitable for integrated filter production control



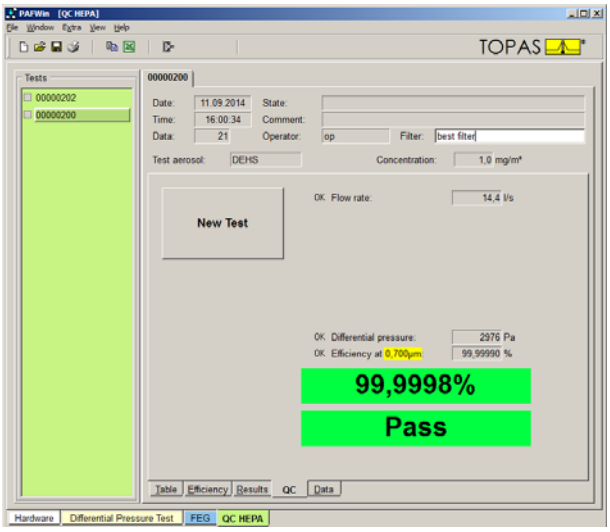
Test setup of AFC 132 / QC HEPA

Specifications

Software

The control of all implemented aerosol instruments including data acquisition is supported by a state-of-the-art AFCWin software. It reliably guides the operator through the complete test procedure and finally generates the test report. All tests are stored in a database which enables a retraceable quality assurance during filter production.

- Two basic human-interface operation modes
  a) touchscreen operation
  b) standard operation with keyboard/mouse
- Automatic test procedures and test protocols of
  a) fractional efficiency measurement (pass/fail)
  b) differential pressure measurement
- Integrated automatic test system self-check routines (test system OK / NOK)
- Manual control and data logger for service, calibration, maintenance
- Database system for filter samples, test results
- Data transfer via the clipboard and Dynamic Data Exchange to Excel
- Network integration capabilities



AFCWin operator interface

Technical Data

Air flow rate	7 ... 35 l/s (25...126 m³/h)
Maximum filter adapter dimension	300 x 300 x 300 mm
Test cycle time	30 sec
Filter cross section	*Customer specific*
Face velocity	*Customer specific*
Differential pressure	3000 Pa ±1%FS
Climate sensors	Temperature, relative humidity, air pressure
Test aerosol	DEHS
Aerosol generator	ATM 221
Dilution systems	DIL 540/C (3 x 1:100/1:10)
Particle counter with vacuum pump	1:10 ... 1:100.000 4 channel 0.3/0.5/0.7/1.0 µm OR 4 channel 0.1/0.2/0.3/0.5 µm OR 8 channel 0.1/0.15/0.2/0.25/0.3/0.5/0.7/1.0 µm *Optional particlemeasurement technology on request*
Power supply	3x 400VAC, 50/60Hz, 16A
Dimensions (HxWxD)	1500 x 2000 x 1000 mm
Weight	approx. 600 kg

*) individual configuration on request

QMS certified to
DIN EN ISO 9001.

12 100 11908 TMS

For more information please visit our website at www.topas-gmbh.de

Specifications are subject to change without notice.

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