



Product Overview

The **100X Automated Filter Tester** is designed for test and quality control validation of filter media, cartridges and masks used in medical and industrial hygiene applications. Designed to meet NIOSH 42 CFR Part 84 and MILStd 282 standards, the 100X is the high capacity automated filter test and validation solution ideally suited to meet the precise and rigorous requirements of R&D, quality control, and production environments.

Applications

- Flat Sheet Filter Media
 - HEPA / ULPA Grade
 - Electret media
- Filtering Face Pieces
- Medical Device Filters
- PAPR Filters

Key Features & Benefits

- 100% Sampling Aerosol Detection System
- Most accurate pressure measurement available
- Best-in-Class Aerosol Flow Rates

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- Aerosol Detection to 99.9995%
 - Patented Aerosol Replenishment System Eliminates Production Down-time.
 - Automatic, Hybrid & Manual Configurations

100X Automated Filter Tester, Delivers Best-in-Class Performance & Low Cost of Ownership

The 100X is a highly accurate, flexible test rig for a wide-range of filter media types designed to optimize production yields while delivering the lowest cost of ownership.

100% Sampling Aerosol Detection System

The 100% Sampling Aerosol Detection System is capable of testing a wide range of HEPA and ULPA filters, up to 99.9995% efficiency. The innovative design provides a single source of truth, reduces potential sampling errors inherent in legacy designs and, with fewer, more robust parts, reduces serviceability costs while increasing equipment uptime.

Most Accurate Pressure Management Available

The 100X can be configured with pressure transducers specific to your needs, providing best-in-class accuracy, repeatable results that minimize false failures, while increasing both production yields and confidence in the test results.

Automatic, Hybrid & Manual Configurations

The 100X can be configured at time of order to operate three ways:

- A **Manual** version is ideal for lab use or production lot testing and requires an operator to engage a test using ergonomic photo-electric actuators. Included is a manual test fixture and standard 100cm² flat sheet media fixture.
- The **Automatic** version integrates seamlessly with a customer designed, PLC-driven, automated production line and is ideal for 100% in-line non-destructive product testing. The unit is controlled via communication ports and becomes a client device to the automated production line.
- The **Hybrid** version provides the versatility to operate in manual mode using the local test fixture or can be switched to become an Automatic version in the automated production environment.



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OPERATING MODES		
#	Name	Description
1	Manual	Lab, R&D, QC For Hybrid or Automatic versions, additional aerosol lines run to a remotely operated PLC-controlled test fixture
2	Automatic	Production
3	Hybrid	Production; QC

Wide Range of Aerosol Flow Rates

The 100X is capable of best-in-class air flows between 5-120 liters per minute (and up to 180 liters per minutes with the high-flow 100Xp oil aerosol model), providing a highly flexible test that can test a wide range of filter resistance types.

Oil or Salt Aerosol Generation

The 100X is available in either an Oil (DOP, PAO) or Salt (NaCl) aerosol generation models. The patented **Aerosol Solution Replenishment System** is a separate 4-liter reservoir tank that increases productivity by eliminating the need to shutdown production to refill the generator. For salt-based test systems, the replenishment system mitigates aerosol concentration and size / distribution shifts due to dynamic salinity.

Other Features include:

- LCD touch screen user interface.
- USB; PLC-Controls (for Automatic, Hybrid version).
- Compartmentalized design, with easy access for filter replacement and serviceability.

PERFORMANCE & PRODUCT SPECIFICATIONS		
	100Xp (Oil)	100Xs (Salt)
Reagents	DOP, PAO-4	NaCl
Primary Aerosol Reagent		4% NaCl solution by weight
Replenishment Reagent		0.9% NaCl solution by weight
Controls	Available in Manual, Hybrid and Automatic configurations	
Aerosol Generation	Count Median Diameter (CMD) 0.18 μ m \pm 0.02	Count Median Diameter (CMD) 0.075 μ m \pm 0.02
Particle Size	Mass Mean Diameter (MMD) 0.3 μ m	Mass Mean Diameter (MMD) 0.26 μ m
	Geometric Standard Deviation (GSD) < 1.6	Geometric Standard Deviation (GSD) < 1.86
	80 – 120 mg/m ³ concentration	18 – 25 mg/m ³ concentration
Flow Rate through Media	5 – 120 L/min (0.18 – 4.2 SCFM) (Standard) 5 – 40 L/min (0.18 – 1.4 SCFM) (Low-Flow option available)	
	5 – 180 L/min (0.18 – 6.3 SCFM) (High-Flow option available)	
Aerosol Flow Accuracy	accurate to \pm 0.4% of reading, plus + 0.2% full scale	

Communication Ports	USB; Data Connection; PLC-Controls (Automatic, Hybrid version)
Utilities	Power: 110VAC, 5.5A; or 220VAC, 2.5A (50/60 Hz)
	Compressed Air: 311 Lpm at 6.55 bars +/- 0.35 Bar (655KPa +/- 35KPa) or 11 SCFM at 95 psig +/- 5.0 psig
	Air Supply Line ID: >9.5 mm (0.375")
Dimensions (L x W x H)	100X: 71 cm x 69 cm x 89cm (28 in x 27 in x 35 in) Optional Base: 71 cm L x 69 cm W x 76 cm H (27 in x 28in x 30 in)
Weight	100X: 75 kg (165 lbs) Base: 38.6 kg (85 lbs)
Compliance	CE, RoHS, FCC, CSA

Common Applicable Standards

- NIOSH 42 CFR Part 84: Respiratory Devices
- EN143: Respiratory Protective Equipment
- EN149: Filtering Face Pieces
- ISO 23328: Breathing System Filters for Anesthetic and Respiratory Use
- ISO 16900-3: Respiratory Protective Devices
- IEST RP-CC001, RP-CC021 (HEPA/ULPA Filters and Flat Sheet Media)
- MilStd 282: Flat sheet media, Respirator Cartridges, Collective Protection