

# Filter Test Machine/Air Permeability Tester

FNM's filter test machines (FT150PA, FT200PO and FT200PS) can determine the efficiency, pressure drop and air permeability of different flat sheet filter media using oil / salt aerosols or atmospheric dust. Our filter test machines can be employed for testing different flat sheet media which are used to produce respiratory face masks and air filters.



## Technical Specifications of Air Permeability Tester Machine

Specification	Acceptance Criteria
Tests	1. Pressure drop (respiratory resistance) 2. Air permeability Flat sheet with maximum area of 5 cm <sup>2</sup>
Aeration measurement range	1..... 1666 l/m <sup>2</sup> /s @ 2 cm <sup>2</sup>
Displayable units	l/min, CFM, l/m <sup>2</sup> /s, cm/s, ft <sup>3</sup> /ft <sup>2</sup> /s
Calibration method	Manual
Aerosol generator flow	Adjustable from 1 – 20 l/min through the panel
Design	Minimum leakage, ergonomic
Sensors	Temperature, relative humidity, pressure
Sample fixture (cm <sup>2</sup> )	Flat sample (circular holder with area of 1, 4 and 5 cm <sup>2</sup> )
Differential pressure sensor range (Pa)	0 – 1000 Pa
Control	PLC
User interface	HMI (7" touch screen)
Data report	Display on the HMI screen, the machine is able to print the reports (printer is optional)
Presentable information	Flow rate, temperature, relative humidity, pressure drop, air permeability
Chassis	Steel profile with electrostatic paint
Body	Steel sheet with electrostatic paint
Time of the first test	Less than 1 minute
Continuous test operation cycle (hours)	24 hours / 7 days
Compressed air source requirements	Air compressor (tank capacity: 50 l)
Input power	110-240 V, single phase, 50 – 60 Hz

Filter test machines are equipped with a high precision particle counter (four-channel particle sizes: 0.3, 0.5, 1.0 and 3.0  $\mu\text{m}$ ) for counting the particles generated by oil / salt particle generator or atmospheric dust in order to calculate filtration efficiency. The software calculates the aerosols penetration (P (%)) and media filtration efficiency (E (%)). Additionally, this machine can calculate air permeability and pressure drop of flat sheet media automatically.

Filter test machine uses a particle counter that counts upstream and downstream particles. Data can be saved automatically and also test reports can be printed by an installed printer on the machine.

FNM's filter test machines can measure the efficiency and pressure drop of flat sheet media according to BS EN 143, BS EN 149, BS EN 779, US 42 CFR 84, ISO 16890, ISO 16900-3, ISO 11155-1 and ISO 5011 standards.