

COMPLETE SAMPLING TRAIN FOR B.F.E. TEST BACTERIAL FILTRATION EFFICIENCY



- Compliant with EN 14683:2019
- Andersen multistage impactor 6 stage cut points
 7,00 μm
 4,70 μm
 3,30 μm
 2,10 μm
 1,10 μm
 0,65 μm
- Syringe pump for precise dosages
- Nebulizer with 4 direct jets without collision to guarantee the bacterial solutions viability
- Possibility to test differential pressure on face masks with the same instruments (optional)

BFE Medical face mask



CARE FOR THE ENVIRONMENT

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The sampling train for B.F.E. test (Bacterial Filtration Efficiency) realized by Mega System is proposed as a complete solution for the analysys of filtration efficiency of surgical masks and other filter materials, in compliance with EN 14683:2019.

Ease of use and complete control of process parameters through simple adjustments allow to save time and guarantee the repeatability of the test.

The sampling train is complete and includes: nebulizer, nebulisation chamber with air filter and removable cap, filter holder, Andersen multistage impactor 6 stages, water condenser with discharge flask, suction pump and syringe pump for a precise dosage.

The software is specially developed for B.F.E. test and provides features such as leak and flow test, automatic regulation of suction flow rate, export of recorded data to USB and nebulisation electronic control through air compressed regulation and feed rate with syringe pump.



NEBULIZER



SYRINGE PUMP



ANDERSEN MULTISTAGE IMPACTOR



PRESSURE REDUCER WITH SOLENOID VALVE

METHODOLOGY OF THE BFE TEST

The BFE (Bacterial Filtratio Efficiency) test is a test performed on materials and devices that are designed to offer protection against biological aerosols such as surgical masks and air filters. The aim of the test is to check for the presence of bacteria at the various levels of filtration after passing through the device under tests.



The procedure consists of the following stages:

- The bacterial suspension (2) is injected by the syringe pump (1)
- The compressed air (6) passes through a pressure regulator with an attached solenoid valve in the nebulizer (3)
- The pump (13) sucks in the air (28.3 lpm as required) and continue through the line
- In the chamber (5) the nebulized bacterial suspension comes into contact with the filtering material under test (7)
- The unfiltered suspension passes through the various stages of the impactor (8) where it is deposited on the Petri dishes.
- The air reaches the condenser (10) where it is cooled by water
- The circuit ends with the pump (13) and its flow regulation system (12)

DIFFERENTIAL PRESSURE

Using the appropriate option is possible to execute the differential pressure test for face masks according to the Appendix C of the standard UNI EN 14683:2019, using the same instruments of the B.F.E test.

The mechanical support provided by Mega System is very easy to use and it guarantees no system leakage with the metal on metal contact, in accordance with the standard: it's possible to make a test in less than 30 seconds!

The mass flow integrated controller of the regulation system allows a fast control of the flow at 8 L/min, while a special sensor for low pressure guarantees a high precision of the measures (+ - 1%).



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LIFETEK B.F.E.

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DIFFERENTIAL PRESSURE ACCESSORY



TECHNICALSPECIFICATIONS.

Lifetek B.F.E. performances	
Pump	Double head membrane 4 m³/h
Operative range	1÷50 l/min
Maximum vacuum	> 600 mmHg
Volumetric counter/ Resolution/Accuracy	G 2,5 / 0,2 l / ±2%
Flow rate	Automatic regulation
Syringe pump performances	
Min. flow rate	0,73 µL/h
Max flow rate	208,3 mL/min
Functionality	Stall detection
Andersen multistage impactor performances	
Cut points	7,00 - 4,70 - 3,30 - 2,10 - 1,10 - 0,65 μm
Interface, data archiving	
Display	LED Alphanumeric (40x2)
USB HOST (on Pen Drive)	\checkmark
Features	
Compressed air solenoid valve	✓
Pressure regulation with pressure gauge	✓
Glassware in compliance	\checkmark
Weight	11 Kg
Options	
Differential pressure sensors for the breathability, mass flow controller and accessory	
PC software for quick and easy drafting of the test report in compliance with EN 14683:2019	
Supplied with	
Punch for easy sample cutting	

Filter holder with analysis area compliant with the regulation Technical manual