Full sampling train for B.F.E. test
Bacterial Filtration Efficiency

Description

The sampling train for B.F.E. test (Bacterial Filtration Efficiency) designed by Mega System is proposed as a **complete solution for the analysis 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, sucking 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.

Technical specifications

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

Syringue pump performance

Min. –Max. Flow rate	0,73 µL/h - 208,3 mL /min
Functionality	Stall detection

Andersen multistage impactor performance

Cut points	7,00 – 4,70 – 3,30 – 2,10 - 1,10 – 0,65 µm

Interface, data archiving

Display	LED Alphanumeric (40 x 2)
USB Host (on Pen Drive)	

Options

Differential pressure sensor for determination of breathability
PC software for quick and easy drafting of the test report in compliance with EN14683:2019

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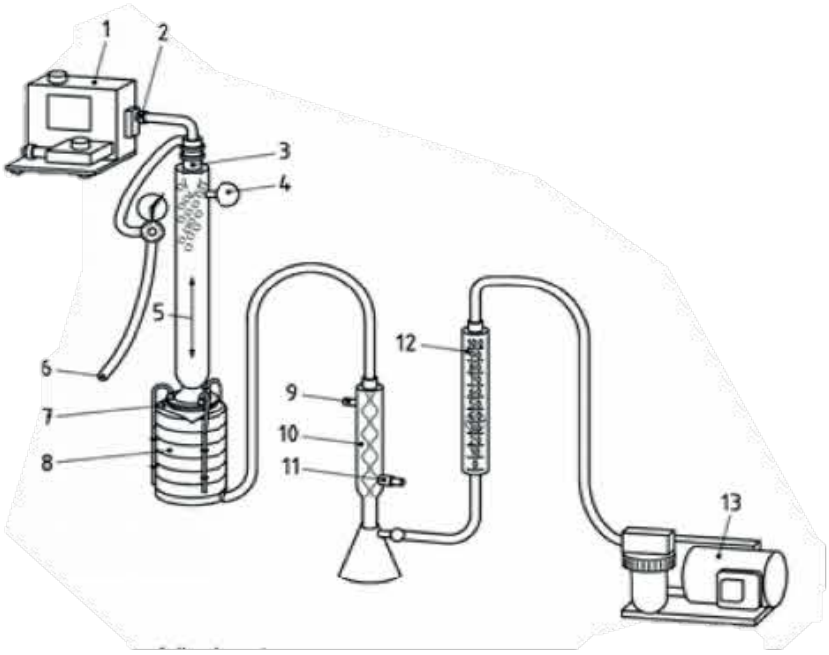
METHODOLOGY OF THE BFE TEST

The BFE (Bacterial Filtration 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 test.



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)

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