

MASTER FILTER TEST

THE INNOVATIVE SYSTEM ABLE TO AUTOMATICALLY TEST AND CALCULATE THE FILTERABILITY INDEX OF A LIQUID, MEASURE THE CLOGGING INDEX AND CREATE A FILTRATION MODEL.

WHAT IS IT?

Ionex Master Filter Test is a compact, flexible instrument for the experimental measurement of the filterability index of a liquid. With its simple, intuitive program, the system is easy to use, whilst still making use of a scientific method which can provide accurate indications which can be reproduced during the operational filtration process.

In order to obtain an objective assessment of the "critical points" of a production process in a short space of time, Ionex has developed a fully automated **filterability measuring unit** which is able to quickly and realistically identify the filtration sequence and calculate its dimensions and micrometry.

Master Filter Test is able to accurately simulate the conditions of a liquid passing through a filter at a constant pressure and enables the creation of a rigorous mathematical model based on reliable data in a laboratory.

HOW DOES IT WORK?

The measurements are taken by weight using a highly sensitive integrated analytical device, whose accuracy reaches a hundredth of a gram. The machine automatically excludes the volume of fluid needed to dampen the filter disk as this is known to alter the final outcome.

A gas/air inlet has been designed in order to calibrate the pressure at which the test is carried out, and there is a water inlet for washing the system after the test.

As standard, the instrument comes with a **special disk holder** which can hold a matrix or filter diaphragm with a diameter of 25 mm. A 47 mm disk holder is available on request. The wiring supporting the disk has been designed not to reduce the effective free surface area of the filter and to influence performance as little as possible.

It is, however, possible to use disposable disk holders such as **SyringFilters**.



EVALUATION INDICES

Three different evaluation indices have been programmed based on various interpretations of the clogging of a filter:

FILTERABILITY INDEX

The test is carried out at a constant pressure (**Constant Pressure Test**) and represents the graphic curve of the volume filtered in relation to the time taken. Gradual clogging leads to filtration blockage.

MODIFIED FILTERABILITY INDEX

A correction index is introduced that takes into account the presence of non-deformable solids that are deposited on the filter, forming a filter cake. Clogging decreases as filtration progresses.

VMAX

This measures the volume that can theoretically be filtered (**Maximum Volumetric Output**) per surface area unit of a filter matrix, whatever the micrometry, and then identifies the total surface area required to complete a process and possibly extrapolate the cost.

The acquisition of 20 items of data per second allows the instrument to assess the linear regression of a sufficiently large number of measurements and create a graph with a particularly accurate angular coefficient.

While the Filterability Indices are helpful in evaluating the feasibility of the daily process in standard filtration line conditions, the **VMAX index** can be used to measure the volume that can be filtered by the system and its size.

PLUS

MASTER FILTER TEST:

- This connects directly to a PC (not included) via a **USB cable** and is supported by **analytical software** that can interpret data with extreme precision and produce results in both graph and table format.
- It acquires and stores information on the **hard drive** to create a laboratory log which is necessary for traceability purposes (as defined in 21CFR Part 11).
- It complies with **EC** standards (Certificate of Conformity).

TECHNICAL DATA

Dimensions (nominal)

Weight	12 kg (26 lbs)
Height-Width-Depth	180x330x500mm (7.1"x13"x18.7")

Power supply

Voltage	220-240V AC
Frequency	50 Hz

PC connection

Port	USB
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Functions

Filterability Index	FI
Modified Filterability Index	MFI
Maximum Filterable Volume	VMAX

Filter

Flat disk	25 mm/47 mm (optional)
SyringFilter	25 mm

Precision

Measurement in weight	0.01 g
Pressure	0.1 bar
Diaphragm absorption calculation	YES

User Manual

English (US) – Italian (I)	CD
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IONEX MASTER FILTER TEST:

- è **facile** da utilizzare
- è **preciso**, si basa su metodi scientifici
- è **compatto** e flessibile
- è **tecnologico**, si collega a qualsiasi pc tramite porta usb

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