

Modular and user-friendly Filtrex system allows you to:

- ▶ Prepare your samples,
- ▶ Count and analyze particles,
- ▶ Create and store your reports and analysis data.

Filtrex systems are fully upgradeable and follow **cleanliness classes** defined according to current standards in the pharmaceutical, automotive, aeronautics and space industries (ISO 4406, NF L41-101, ISO 16232, USP 788...).

Samples preparation Particles extraction



Qualification and calibration

- ▶ Calibration slide pattern – particles and fibers
- ▶ Certified calibration ruler for calibrating the system

Support and services

- ▶ Maintenance contract, Technical support
- ▶ Advice and expertise, Training



«Microvision Instruments is fully on top of the special requirements in our business. Time after time, the updates in their system have faithfully followed our needs to the letter. The counting results provide significant data that are stable over time.»

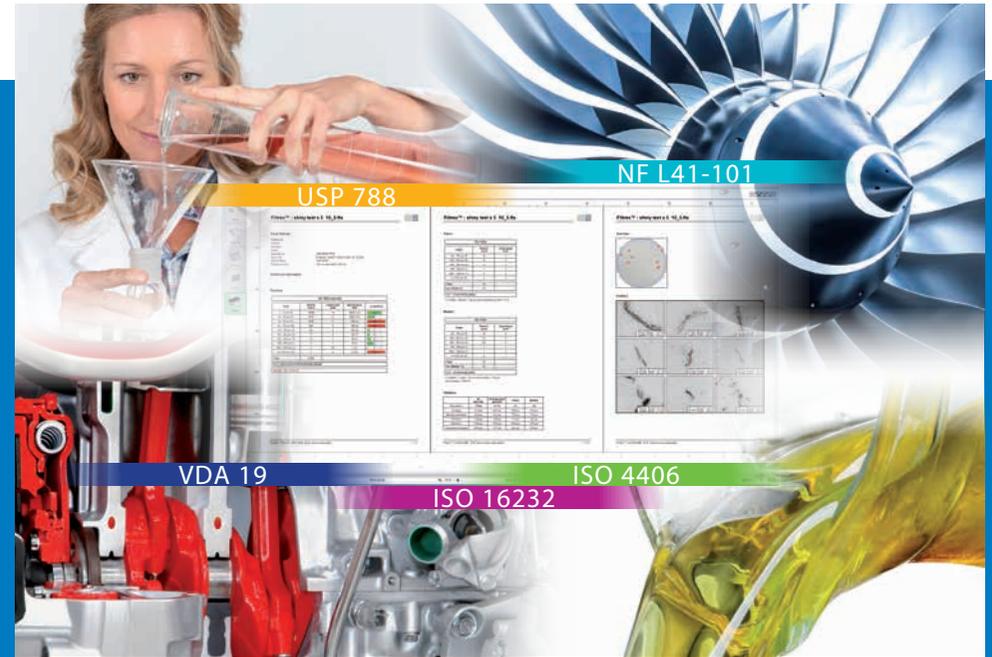
Labo Analyse Propreté, CETIM

«Besides Filtrex system ease-of-use, Microvision team is reactive, listen to our needs and knows our business!»

Laboratoire Analyse Propreté, PSA

Filtrex

Particulate contamination control
Particles and fibers counting



Filtrex, a turnkey system designed to analyse particulate contamination for pharmaceuticals, aeronautics and automotive industries:

- ▶ **Fluids and mechanical parts cleanliness analysis:** fuels, lubricants, hydraulic fluids, solvents...
- ▶ **Particulate contamination control for pharmaceutical parts:** stoppers, bottles, packaging, plastic films...

- ▶ A full range - from 2.5 µm
- ▶ Particles extraction
- ▶ Matt and shiny particles counting, fibers measurement
- ▶ Automated, customizable reports, data export
- ▶ Secure data by access levels FDA compliant
- ▶ Modular and upgradeable turnkey system
- ▶ Compliant with international industry standards: ISO 16232, USP 788, VDA 19, NF L41-101...
- ▶ User friendly and easy to use
- ▶ Accurate, reliable and reproducible results

Conception et impression: PLANETE IMPRESSION 01 69 98 41 00 • Label IMPRIM'VERT®
 Credits photos: @Echidna, @Auramar, @Tommy Wredecker, @Steve Mann, @Egny Benay, @Konstantinos Kokkias, @Orlando Forin Resu, @Hamamonia, @Wolff



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Filtrex

Turnkey system for particle contamination control



Filtrex PREMIUM

- ▶ Counting from 2.5 µm
- ▶ Motorized XYZ microscope
- ▶ Transmitted and reflected illumination
- ▶ «Dark field» mode
- ▶ For the most demanding standards



Filtrex OPTIMIZED

- ▶ Counting from 10 µm
- ▶ Microscope with motorized zoom - option: autofocus
- ▶ Reflected LED lighting + polarized light
- ▶ Motorized or encoded stage
- ▶ Need for speed: under 3 mn for a 47 mm membrane



Filtrex ESSENTIAL

- ▶ Counting from 50 µm
- ▶ Scanner
- ▶ Automatic calibration
- ▶ Economic choice for fast and simple controls



Virtual cartographies managed with a joystick



Images acquired and stored in **full resolution**

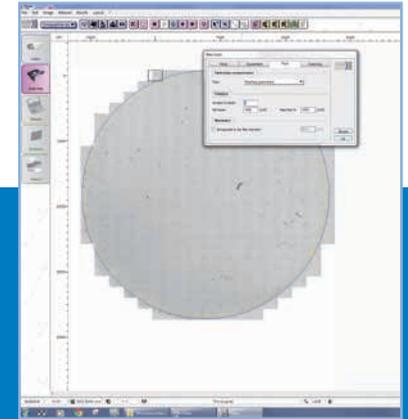
No data loss in case of future analysis or comparison



OS: Windows 7, 8, 8.1
RAM: 8 GB to 16 GB
Processor: iCore 7 minimum
Peripherals and interfaces: USB3 slot and/or PCI express slot

Parameters

- ▶ Counting type: fluid or washing
- ▶ Standard: predefined ou custom (in-house)
- ▶ «Varieties» settings for particulates and fibers identification - thanks to optical properties: intensity, brightness, color, size
- ▶ Membrane diameter and scan area
- ▶ Image settings: contrast, gain, background correction
- ▶ Automatic focusing
- ▶ 3 points predictive focus



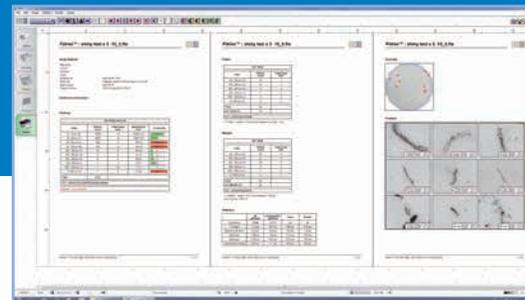
Acquisition - Measurements

- ▶ Real time scanning and display of the entire membrane
- ▶ 3 points centering to circle the filtered area
- ▶ Detection settings adjustment for fibers and particles
- ▶ Detection and reconstruction of objects intersecting the edges of the images or fields
- ▶ Counting and characterization of fibers, shiny and matt particles
- ▶ Point via keyboard or joystick
- ▶ Manual corrections

Results display

- ▶ Pre-defined classification
- ▶ Specific «varieties» tables: metallic fibers, particles, matt fibers...
- ▶ Categories, fibers ratio
- ▶ Cleanliness index - global and class by class
- ▶ Counting table and statistics exportable to Excel

Particles				
ISO 10332 cummins				
Class	Particle count	Cleanliness level	Specification limit	Conformity
5 - 15 µm (B)	16243	15	20000 (15)	OK
15 - 25 µm (C)	3087	12	7600 (12)	OK
25 - 50 µm (D)	1724	11	3500 (12)	OK
50 - 100 µm (E)	465	9	1500 (11)	OK
100 - 160 µm (F)	48	8	600 (9)	OK
160 - 250 µm (G)	16	4	260 (8)	OK
200 - 400 µm (H)	12	4	100 (7)	OK
400 - 600 µm (I)	2	1	6 (3)	OK
600 - 1000 µm (J)	0	00	1 (0)	OK
≥ 1000 µm (K)	1	0	0 (00)	OK
Total	22188			
CCC : (B)6(C)2(D)1(E)F(G)4(H)1(I)00(K)0				
Sample : non-conform				



Reports

- ▶ Customizable (logo, contents...)
- ▶ Automatic sorting from the largest to the smallest particle
- ▶ Automatic display of the largest particles