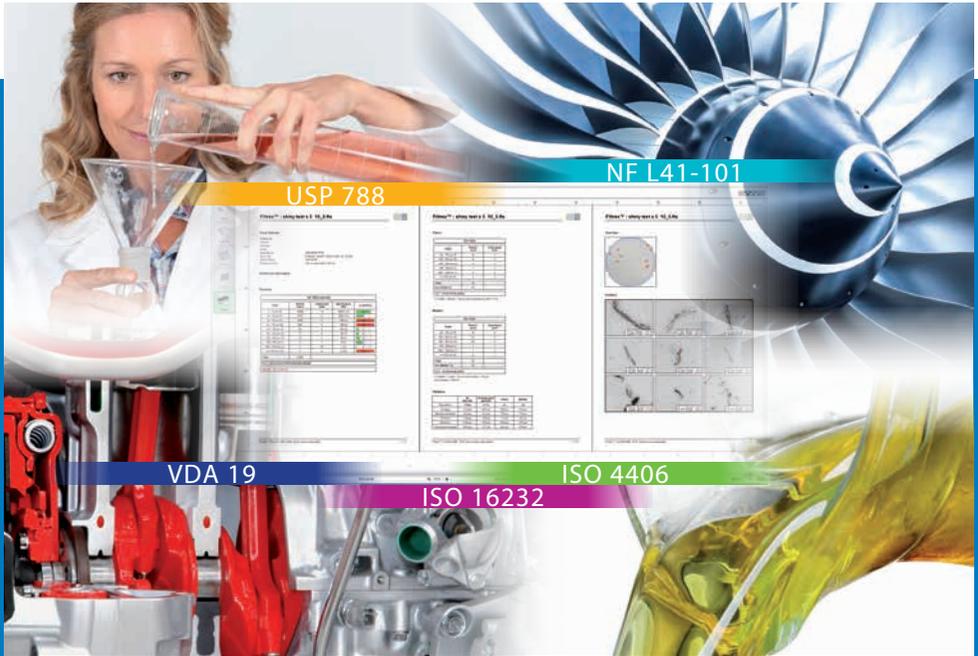


# Filtrex

Particulate contamination control  
Particle and fiber counting



USP 788

NF L41-101

VDA 19

ISO 4406

ISO 16232

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

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

- ▶ Full range of systems - from 2.5  $\mu\text{m}$
- ▶ Particle extraction
- ▶ Matte and shiny particle counting, fiber 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 interface and easy to use
- ▶ Accurate, reliable and reproducible results

# Filtrex

Turnkey systems for particle contamination control



## Filtrex PREMIUM

- ▶ Counting from 2.5  $\mu\text{m}$
  - ▶ Motorized XYZ microscope
  - ▶ Transmitted and reflected illumination
  - ▶ Darkfield mode
- ▶ *For the most demanding standards*



## Filtrex OPTIMIZED

- ▶ Counting from 10  $\mu\text{m}$
  - ▶ Zoom microscope - 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  $\mu\text{m}$
  - ▶ Scanner
  - ▶ Automatic calibration
- ▶ *Economical choice for fast and simple controls*



Virtual membrane images can be reviewed with a joystick



Fully compatible with Zeiss, Nikon, Olympus, Motic, Optika... microscopes and optical precision devices



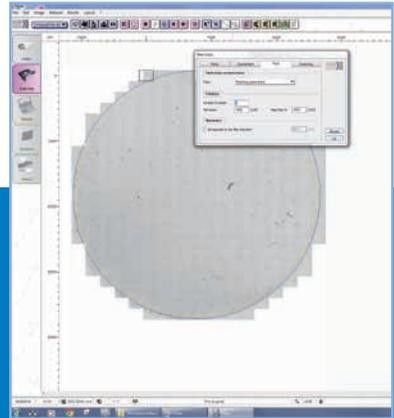
Images acquired and stored in **full resolution**  
No data loss in case of future analysis or comparison



**OS:** Windows 7, 8, 8.1, 10  
**RAM:** 8 GB to 16 GB  
**Processor:** iCore 7 minimum  
**Peripherals and interfaces:** USB3 slot and/or PCI express slot

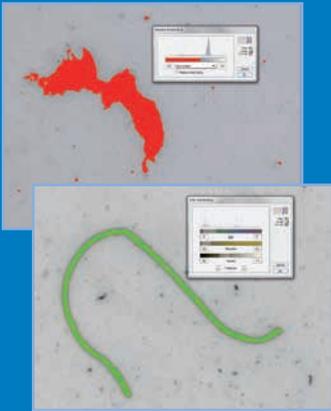
## Parameters

- ▶ Counting type: fluid or washing
- ▶ Standard: predefined or user-defined
- ▶ "Varieties" settings for particulate and fiber identification - thanks to optical properties: intensity, brightness, color, size
- ▶ Membrane diameter and scan area
- ▶ Image settings: contrast, gain, background correction
- ▶ Automatic focusing
- ▶ 3 point predictive focus



## Acquisition - Measurements

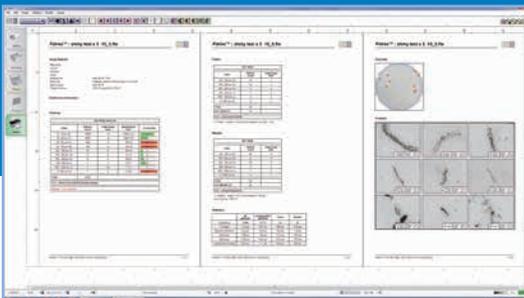
- ▶ Real time scanning and display of the entire membrane
- ▶ 3 point centering to circle the filtered area
- ▶ Detection settings adjustment for fibers and particles
- ▶ Detection and reconstruction of objects intersecting the edges of the images or fields
- ▶ Counting and characterization of fibers,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



## Results display

- ▶ Predefined or user-defined classification
- ▶ User-defined "varieties" tables: metallic fibers, particles, matte fibers...
- ▶ Categories, fiber ratio
- ▶ Cleanliness index - global and class by class
- ▶ Counting table and statistics exportable to Excel

ISO 10232 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)	1734	11	3500 (12)	OK
50 - 100 µm (E)	466	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)	Not OK
<b>Total</b>	<b>22188</b>			
CCC : (B)6(C)2(D)11(E)F6(G)4(H)1(J)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

## The modular and user-friendly Filtrix Systems allow you to:

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

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

*"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 the Filtrix system's ease-of-use, the Microvision team is reactive, listens to our needs and knows our business!"*

Laboratoire Analyse Propreté, PSA

## Sample preparation Particle 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

