Filtrex

Particulate contamination control

Particle and fiber counting

MICROVISION INSTRUMENTS

Filtrex, a turnkey system designed to analyze particulate contamination for automotive, pharmaceutics, 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 µm
- Particle extraction
- Matte and shiny particle counting, fiber measurement
- Automated, customizable reports, data export - link with your LIMS
- 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 µm
- Motorized XYZ microscope
- Transmitted and reflected illumination
- Darkfield mode

▸ ***For the most demanding standards***

Filtrex OPTIMIZED

- Counting from 10 µm
- 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 µm
- 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

Native 64

Images acquired and stored in **full resolution**

No data loss in case of future analysis or comparison

OS: Windows 7, 8, 8.1, 10

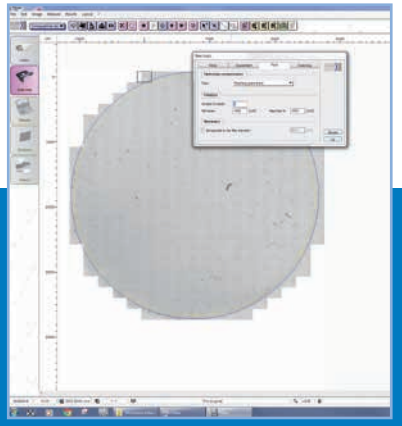
RAM: 8 GB to 16 GB

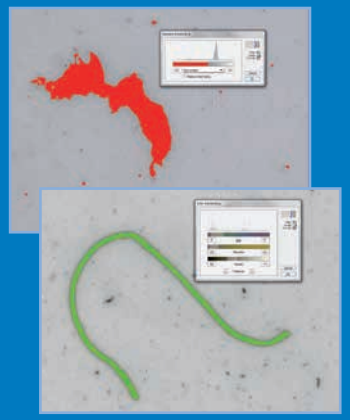
Processor: iCore 7 minimum

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



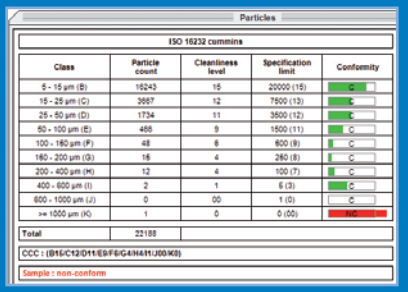


Acquisition - Measurements

- 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 fiber, shiny and matte particle according 3 modelings: elliptical, ISO 16232:2017 or advanced
- 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



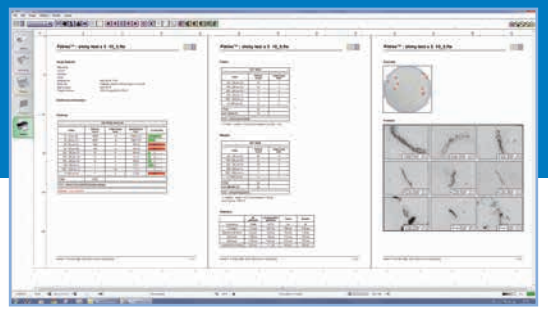
Particles

ISO 16232 cummins

Class	Particle count	Cleanliness level	Specification limit	Conformity
5 - 15 µm (B)	16243	15	20000 (15)	C
15 - 25 µm (C)	3667	12	7500 (12)	C
25 - 50 µm (D)	1734	11	3500 (12)	C
50 - 100 µm (E)	466	9	1500 (11)	C
100 - 160 µm (F)	48	6	600 (9)	C
160 - 200 µm (G)	16	4	260 (8)	C
200 - 400 µm (H)	12	4	100 (7)	C
400 - 600 µm (I)	2	1	6 (3)	C
600 - 1000 µm (J)	0	00	1 (0)	C
>= 1000 µm (K)	1	0	0 (00)	NC
Total	22188			

CCC : (B15/C12/D11/E9/F8/G4/H4/I1/J00/K0)

Sample : non-conform



Reports

- Customizable (logo, contents…)
- Automatic sorting from the largest to the smallest particle
- Automatic display of the largest particles
- Automatic generation of custom files for your LIMS - on demand

The modular and user-friendly Filtrex Systems allow 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 automotive, pharmaceutical, aeronautics and space industries (ISO 4406, NF L41-101, ISO 16232, ISO 16232:2017, 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 Filtrex 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

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