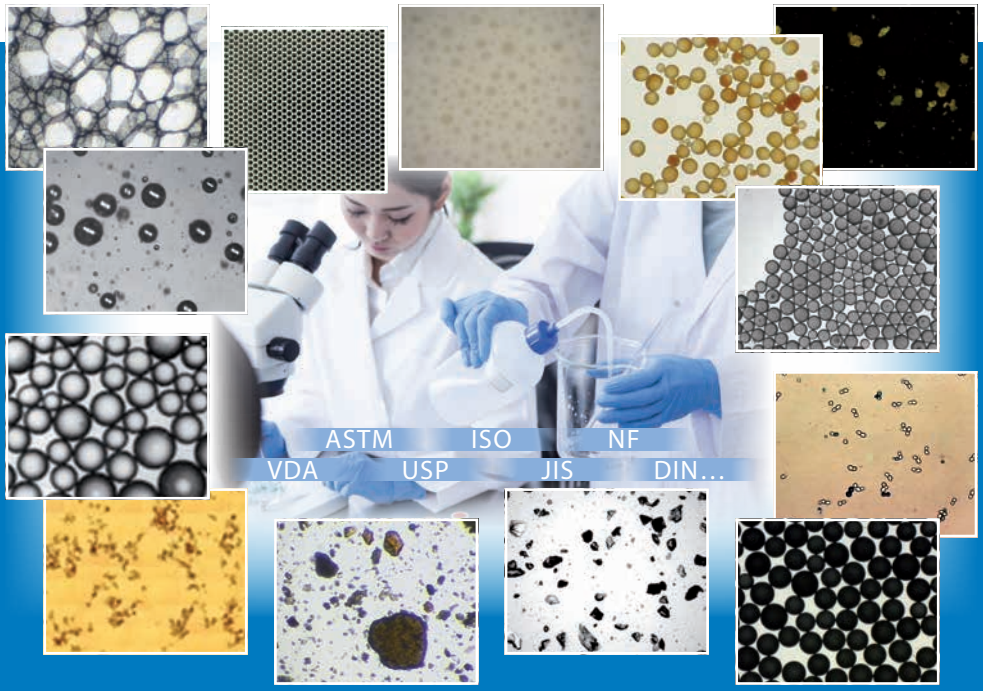
Vision Granulometry

MICROVISION INSTRUMENTS

Granulometry, shape, grain index…

Macroscopic or microscopic analysis by image processing



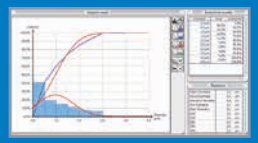
Vision Granulometry
Turnkey systems dedicated to material analysis in your development and production laboratories. Vison Granulometry systems are deployed in chemistry, metal, pharmacy, automotive, cosmetics, food processing industries:

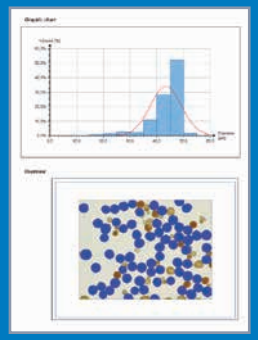
- **Granulometry by opening**
  Non-contact electronic sieving
- **Size and shape distribution**
- **Grain index**
- **Particulate contamination analysis**

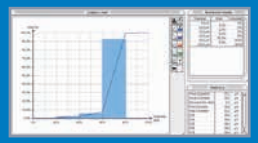
- Modular and upgradeable turnkey systems - from millimeter down to submicron scale
- Compliant with international industry standards: ASTM, ISO, NF, VDA, USP, JIS, DIN…
- Automated, customizable reports, data export
- Secure settings by access levels
- User friendly interface and easy to use
- Accurate, reliable and reproducible results

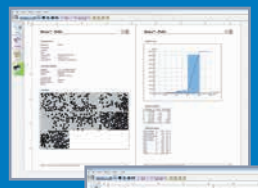
Vision Granulometry

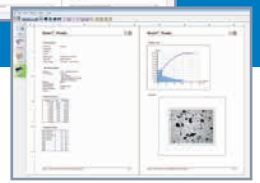
Turnkey systems for all your granulometric analyses

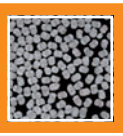
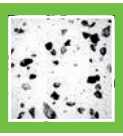


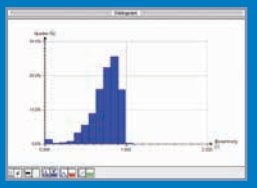


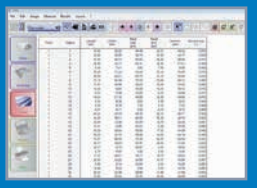


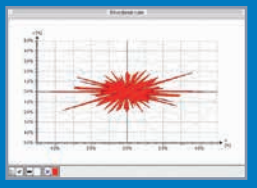


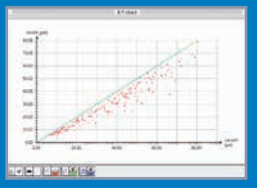


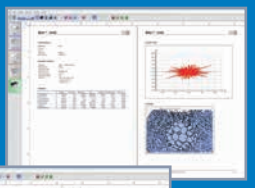
	Granix Granulometry by opening - NF X 11-696 Non-contact electronic sieving 	Ellix Characterization of object size distribution depending on their shape 
Acquisition	▶ Calibration function, background correction for brightfield illumination ▶ Integrated acquisition equipment steering and setting, image enhancement ▶ Analysis from direct acquisition (scanner, zoom, microscope…), or based on archived image, video or mapping (image mosaics) issued from external acquisition systems (SEM, optical microscope, scanner…)	
Features	▶ Creation of study templates ▶ Measurements beyond the camera field of view	▶ Secured operating modes - 3 levels ▶ Automatic or step-by-step exploration
Detection methods	▶ User-defined or predefined (plugin) detection methods • Thresholding adapted to the contrast of the images, to the size of the objects, to the homogeneity of the lighting • Artifacts removal through standard or user-defined filtering ▶ Field analysis processed in 2 seconds	▶ User-defined or predefined (plugin) detection methods • Thresholding adapted to the contrast of the images, to the size and color of the objects, to the homogeneity of the lighting • Artifacts removal through standard or user-defined filtering • Agglomerates unbunding • Size and shape filtering applied to detected objects ▶ Definition of categories based on geometrical criterion (length, area, perimeter…) ▶ Restriction according to minimum-size and maximum-size criteria
Measurement	▶ Mean diameter, mode diameter, standard deviation, min diameter, max diameter, undersize, separation limit, D10, D25, D50, D75, D90 ▶ Standardized or user-defined diameter classes (standard sieves): ISO 565, NF X11-501, ASTM E11, DIN 4188, BS410, GOST 3584, UNI 2331, JIS Z8801	▶ Objects position (X, Y) and angle, major/minor axis, thickness, $Feret_{min}$ $Feret_{max}$, area, perimeter, equivalent diameter, orientation ▶ Length, width, elongation of the models ▶ Aspect ratio ▶ Models: elliptical, rectangular, rhomboidal, circular, square
Representations	▶ Histogram, cumulative undersize and oversize curves, normal distribution, statistical and digital values	▶ Counting tables, distribution histogram, scatter plot diagram and directional rose, statistical values
Results and reports	▶ Creation of automatic and customized reports ▶ Data export to spreadsheet software or simply by Copy/Paste; reports recorded in MVR and pdf format ▶ Keep the images form each field and include them in the report ▶ Global mappings (image mosaics) and individual images (field by field) export	











➔ ***To go further,*** **discover our specific systems**

Filtrex
Particle & fiber counting and granulometry
▶ ISO 16232, VDA 19, USP 788, ISO 4406, NF L41-101 compliance

Tamlab
Granulometry of sieve aperture
▶ NF ISO3310-1, ISO 3310-2, ISO 9044 compliance

GrainSizer
Automated grain size measurement
▶ NF A04-102, ASTM E112 compliance

Vision Granulometry **turnkey systems** are offered as complete systems (**optics**, video and **processing**) but also integrates easily into both your existing acquisition equipment and your computing system.

1 µm — 10 µm — 1 mm

ULTRA FINE

- Counting from 2.5 µm
- Motorized XYZ microscope and camera
- Motorized or encoded stage - option
- Brightfield or darkfield illumination / reflected or transmitted light

Sample and virtual mapping review (overviews, picture mosaics) with a joystick

SUPER FINE

- Counting from 10 µm
- Zoom microscope and camera
- Motorized or encoded stage - option
- Brightfield or darkfield illumination / reflected or transmitted light

Compatible with Zeiss, Nikon, Olympus, Motic, Optika devices…

FINE

- Counting from 100 µm
- High resolution A3/A4 scanner
- Transmitted light

Pictures acquired and saved in **full resolution**

Future analysis or comparison without loss of data

FILE

- All resolutions - from millimeter down to submicron
- Images issued by your own acquisition system (optical or electronic microscope, photos…)

OS: compatible with Windows 7, 8, 8.1 and 10

RAM: 8 to 16 GB

Processor: iCore 7 minimum

Peripherals and interfaces: USB3 port and/or PCI express slot

By choosing Microvision, you can rely on:

- Our expertise in object characterization on microscopic and macroscopic scales - over 25 years serving the industry and life sciences
- User friendly systems developed in partnership with the key industrial players
- Strong network of resellers and international tech support

Support and services

- Maintenance contract, Technical assistance
- Advice and expertise, Training

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