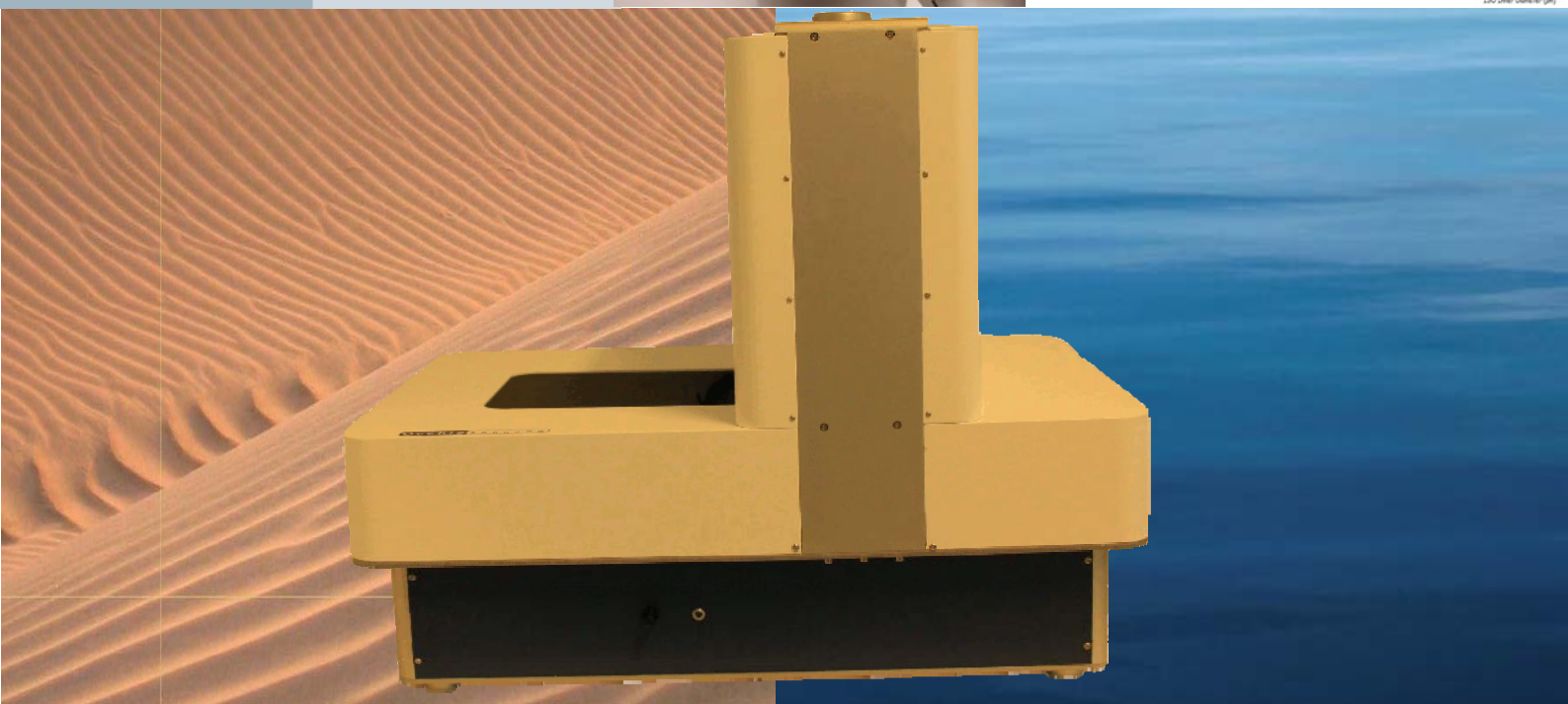
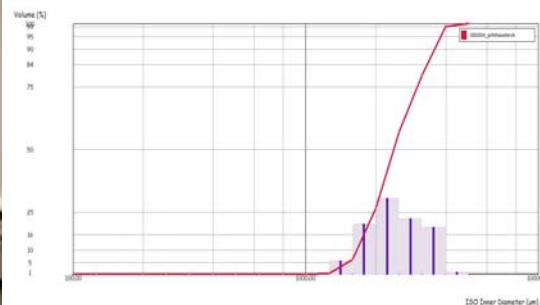


# Occhio

Imaging particle analyzers

200 nm – 3 cm



## OCCHIO 500nanoXY

*Particle size & shape analysis DRY/WET mode*



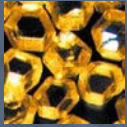
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Occhio SA, 4 rue des chasseurs ardennais BE4031 Angleur (Belgium) Tel:+32 (0) 4 372 93 30

8 rue de la malorne 28120 Bailleau le pin (France) Tel :+33 (0) 2 37 25 41 53

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# 500nanoXY: Particle size & morphology

OCCHIO SA: Since 2001, your partner in imaging particle analysis

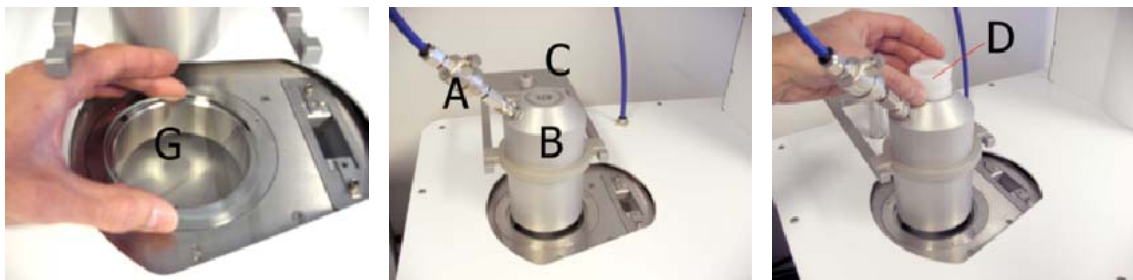
Since 2001, through the efforts of an international and multidisciplinary **team of engineers**, **OCCHIO** offers you a **complete range of imaging particle analyzers**, starting from **200 nanometers up to several centimeters**. Whether it is for laboratory instrumentation, « AT LINE » or even « ON LINE » solutions, OCCHIO is prepared to be your partner in high-level powder characterization. OCCHIO bring you accuracy, profit and innovation.

## OCCHIO 500nanoXY technology

**OCCHIO 500nano XY** is an **automatic imaging particle analyzers** dedicated to **powder quality characterization**. You can analyze **powders, suspensions, emulsions** in particle size range **0.4 microns -3000 µm**

The system combines an **integrated vacuum dispersion** device and a **high resolution optical bench** (Camera 10 Mpixels + specific LED light); The blue light allows to detect smallest particles

### DRY MODE



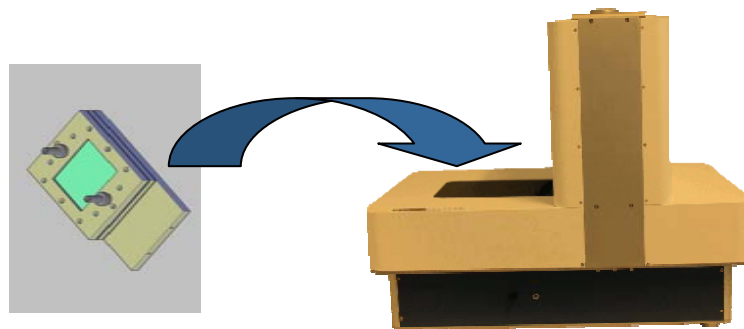
*G: Glass plate ; A: Vacuum check valve ; B: Vacuum chamber ; C: Vacuum chamber holder; D: Sample cup*

**This patented disperser** provides perfectly prepared slide glass. **Without any sample contamination or damage**, this vacuum disperser will gently deposit **millions of individual grains** of powder on a slide glass within a few seconds.

With the new automatic X-Y plate, the device allows analyzing automatically all particles to bring particle size measurement and shape characterization

### WET MODE

**OCCHIO 500nanoXY** offers possibility of making a **real analysis in wet mode**. With « **O-Flowcell** », user can make **particle size** measurements, **particle shape** analysis and also **particle counting** (Number of particles / mL)



A **specific pump** allows to **control perfectly flow rate** in order to have the best accuracy on particle counting.

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# 500nanoXY: CALLISTO™

## CALLISTO™ : Software for particle analysis

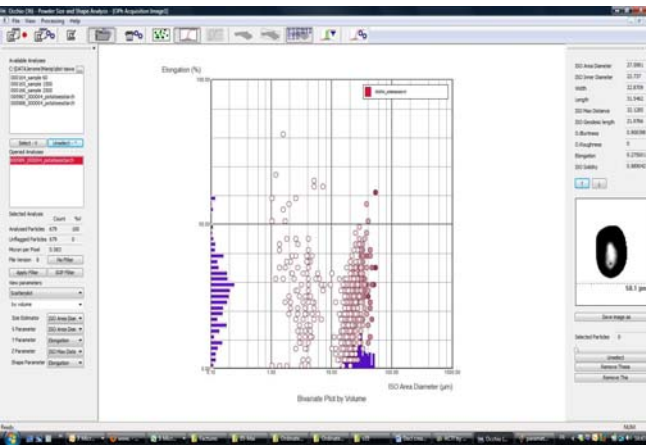
Since 2001, OCCHIO develops revolutionary systems by image analysis technique to study all particles types (powders, suspensions, emulsions and foams). These new systems, associated to the **powerful software CALLISTO™**, allow particle size measurements, shape analysis & particle counting. Now, more than 43 parameters are available ...

### PARTICLE SIZE PARAMETERS

**Area diameter** (diamètre équivalent en aire);

**Inner diameter** (Diamètre inscrit) **Length** (longueur)

**Width** (largeur) **Geodesic length - Mean diameter**



### PARTICLE SHAPE PARAMETERS

**O. Aspect Ratio and Elongation:** The Elongation is defined as  $1-AspectRatio$  with  $AspectRatio$  being the ratio between the width and the length of the particle

**ISO Straightness:** For very elongated particles, the straightness is ratio between the maximal distance and the Feret Length

**ISO Compactness and ISO Roundness :** Compactness and roundness are related to the degree to which the particle is similar to a disc. Roundness is less robust than compactness

**ISO Circularity:** Degree to which the particle (or its projection area) is similar to a circle

**ISO Solidity:** Solidity is the object area divided by the area enclosed by the convex hull (perfect to detect aggregates )

**O. Bluntness :** The Bluntness Index is the expression of a “maturity in the abrasion process”

**O- Roughness:** Amount of material to be removed from the shape before getting a smooth surface

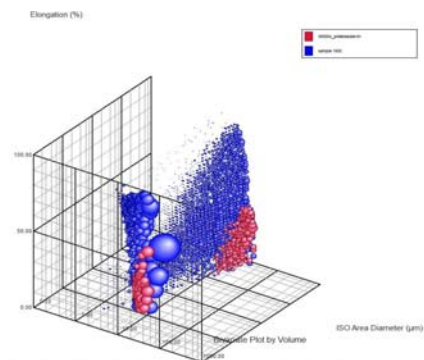
**Luminance:** The luminance is the mean greyscale level of the particle

**O-Porosity;** Porosity estimator

**SCATTERPLOT:** Possibility of **having a representation** of the **particle size parameters** versus morphologic estimators. According to the particle size classes chosen by the operator, all plots are corresponding to particles. Operator can visualize each particle in clicking on each plot.

**MICROSCOPE MODE:** Display of each parameters and picture for selected particle on Scatterplot or live pictures. Operator can save picture for individual particle in Bitmap format.

(Particle size & shape distribution, trends, Excel export, sieves correlation...)



## 500nanoXY Options

### SURFACES ANALYSIS

OCCHIO 500nanoXY allows to analyze surfaces as polymers, membranes, filters, fibers... with a dedicated module.

Other options in development to give you solutions for all your applications

**Do not hesitate to contact us...**

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# Data sheet

Model	500nano XY
Particle size range	0.4microns – 3000 microns
Measurement time	2 up to 10 minutes (sample depending)
Parameters	<p><b>ISO 9276-6; 7; 8 norms + OCCHIO parameters</b></p> <p><b>SIZE:</b> ISO Area diameter; ISO Inner diameter; Mean diameter; Perimeter diameter; Crofton diameter; Half Crofton diameter; Width; Length; Ellipse Width; Ellipse Length; ISO Max Distance; ISO Geodesic Length;</p> <p><b>SHAPE:</b> Occhio Bluntness; Occhio Roughness; Elongation; ISO Aspect Ratio; Ellipsoid Elongation; Ellipsoid Roundness; Ellipse Ratio; ISO Eccentricity</p> <p>ISO Straightness; ISO Roundness; ISO Compactness; ISO Extent; ISO Solidity; Convexity; ISO Circularity, Luminance mean</p> <p>Luminance var.</p>
Dimensions and weight	54 (L) x 54 (l) x (H)72cm, 38.5 kg (21.2 in x 21.2 in x 28.3 in)
Disperser	Patented vacuum disperser
Optics and imaging device	C-Mos 10 Mpixels, ; Blue light ; Autofocus; Adjustable magnification
Validation	IQ,OQ,PQ in option
Option	Wet module, surface analysis module ...
Computer specifications	Windows XP, VISTA, 7, , Intel Core i5-650 @3.2GHz, 4MB cache ; 4 GB @ 1156MHz , HD 500GB Thanks to contact OCCHIO to check computer specifications
Power supply	110-240 V 50/60 Hz
Working conditions	Temperature 5 °C – 45 °C, HR 35-80 %
Images format	Bitmap
Data storage	‘.oph’ binary Occhio files format contains:Full size distribution valuesShape and size percentiles Outline and greyscale levels of each particle
Statistics tools (distribution in number & volume)	Acquisition info (short overview of the used SOP) ; Size distribution; Size percentiles; Shape percentiles; Shape distribution; Mean shape by size; 2D scatter-plot (fully selectable particles map); 3D scatter-plot (include animation); Percentiles sample images; Sample images (BMP exportable format); Id card for each particle (BMP exportable format); Morphological and size filtering procedure ; Raw data export (text format); Table distribution export (text format); Table distribution and percentile export (Excel format); Automatic or custom reporting; Full image export (bmp format); Single particle image export (bmp format); Figure and graph export(bmp format)

Do not hesitate to contact us for more informations and to know about new developments

YOUR DISTRIBUTOR

\* Spécifications pouvant évoluer

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