

PA2000i, Particle Size & Shape Analyzer



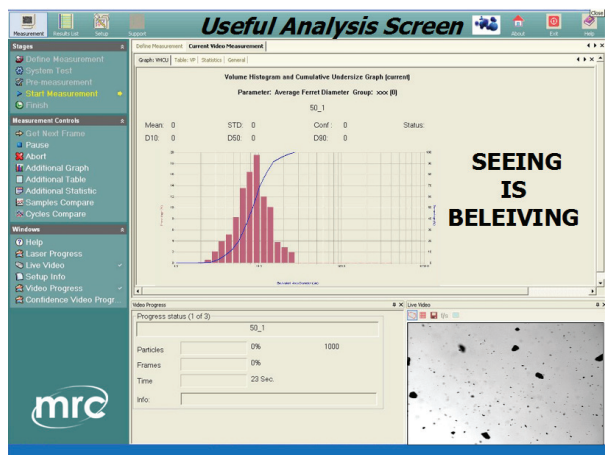
Video Channel - Dynamic Image Analysis

The PA2000i Video Channel performs 2-D particles Dynamic Size and Shape Analysis in a wide size range (1 - 5,000 microns).

Acquired images are displayed and analyzed by powerful image analysis software and are automatically processed and analyzed while dozens of useful analytical parameters of the sampled particles are efficiently determined.

User friendly software provides automated and advanced Image Analysis features that assist in optimizing sample measurement.

Software algorithms enable automatic pre-programmed calculation for all of the available parameters including Ferret diameter, area, perimeter, circularity, aspect ratio and many other useful size and shape analytical parameters. This remarkable S/W can be used also in a stand-alone microscopy application, when a compatible CCD camera is mounted on an optical microscope, and the captured images are being analyzed accordingly.



Real images of the measured particles can be easily saved and printed separately or added directly into the analysis report document.

Laser Channel - High Resolution & Accuracy

The PA2000i Laser Channel is a straight-forward technique for determining micro-particle size distribution (0.1 - 3,600 microns), without any assumptions or sample pre-knowledge.

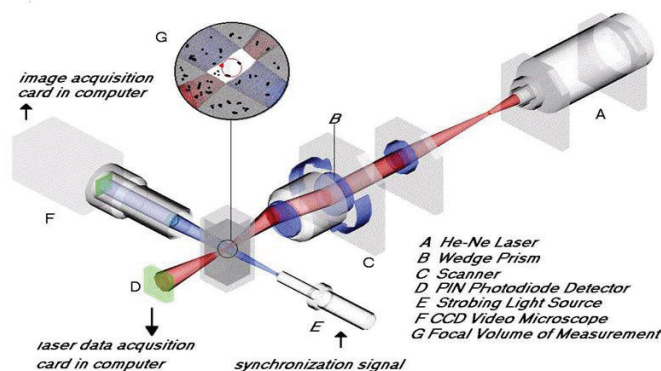
This unique analytical technique is called "Laser Obscuration Time" (LOT).

The major advantage of direct particle size measurement over other laser used techniques is its higher resolution obtained by the individual particle measurement approach that allows minor fraction detection and better measurement accuracy.

Main benefit of using the LOT is that the analysis results aren't affected by any physical or chemical property of the particle or its medium, enabling reliable results. State-Of-The-Art software analyses the obscuration time as multiple pulses algorithm complex, providing within seconds clear and accurate particles size distribution results.

Measurement Cells:

Magnetic Stirring, Mechanical Stirring, Liquid flow-through, Fibre flow-through, Aerosol flow-through, Micro Flow-through, Slide, Heated, Free Fall.



PA2000i Measuring Channels

The PA2000i On-Line measurement offer analytical solutions for a wide variety of applications and processes in-line, in-situ, in pilot plants, in reactors or in the lab: grinding, crystallization, polymerization, homogenization, filtration, separation, drying, dispersion and so on.

PA2000i Image Analysis software includes many procedures such as:

- Pre-Processing Procedures
- Image Quality Filters
- Region of Interest Determination
- Out-Of-Focus Rejection
- Morphology Operations
- Grouping according to size/shape
- Re-Processing of captured images and movies
- Manual Lens Calibration for External Installations

Specifications:

Model	PA2000i
Measured parameters	Particle Size and/or Shape
Total particle size range	0.1–5000 µm
Concentration range	Up to 10 ⁹ particles/cc (for 1µm particles)
Particle presentation phases	Liquid, dry and airborne phases
System dimensions & weight	740L x 420W x 240H (mm), 14 Kg
Laser	2mW HeNe, 632.8 nm, Silicon PIN Photodiode Detector
Laser resolution	0.33% of full scale, up to 0.2 µm
Video illumination	Synchronized strobe light, adjustable intensity & duration
Video resolution	B&W CCD camera, NTSC 640x480 pixels, PAL 768x572 pixels
Software Packages	Windows XP, MS Office, PA2000i compatible S/W package
FDA	21 CFR part 11 compliant
ISO	Compliant to numerous ISO-methods
Modular measurement cells	Liquids, emulsions, dry powders, fibers, magnetic particles, heated liquids and aerosols
Available Accessories	Automatic liquid flow controller, dry powder disperser, dry powder feeder, temperature controller, aerosol controller and compatible PC
Electricity	100–130V, 205–240V, 50/60Hz, 100VA

Application Examples:

Model	PA2000i
Geology	Soil, clay, sand, kaolin.
Environmental	Ocean water, tap water, waste water, dust, membrane filtration, flocculation.
Pharma & Bio-tech	Powders, suspensions, syrups, emulsions, pastes, micro-carriers, injectable solutions, collagen, microcapsules, drug powders.
Chemicals	Pesticides, dispersants, catalysts, resins, emulsions, preservatives.
Ceramics and Metals	Alumina, silica, magnetic powders, tungsten, sintered products, stainless steel, strontium, cobalt.
Energy	Coal, fuels, slurries, shale oil emulsions, fly ash.
Food Products	Emulsions, fine powders, beer, coffee, chocolate, ground products, agglomerated crystals, flour, peanut butter, corn-flakes.
Heavy Industry	Polymers, oil droplets, wear particle, chalk, fillers, toners, pulp & paper, coatings, pigments, PVC, paint.
Life Science	Bacteria, smears, yeast, inhalation toxicology, cell research, algae growth, blood analysis.