

PARTICLE CHARACTERIZATION, ISOPLATHIC, MOONILLO, MIE,
0.01UM, 5NM, 0.01846UM, 35.78NM, 9351UM,
35.78NM, 9351UM, 2.8NM, 355NM, TR-LASER DIFFRACTIO
N LASER DIFFRACTION, POLYDISPERSE, PARTICLE ANALYSIS,
RAYLEIGH RATIO, 35.81UM, 3.9885NM, 95NM,
5895.42NM, 2.0562UM, 81NM, 3.4078-10NM, 390NM,
LOGARITHMIC SCALE, BROWNIAN MOTION, RESIDUAL



Total Solutions in Particle Characterization

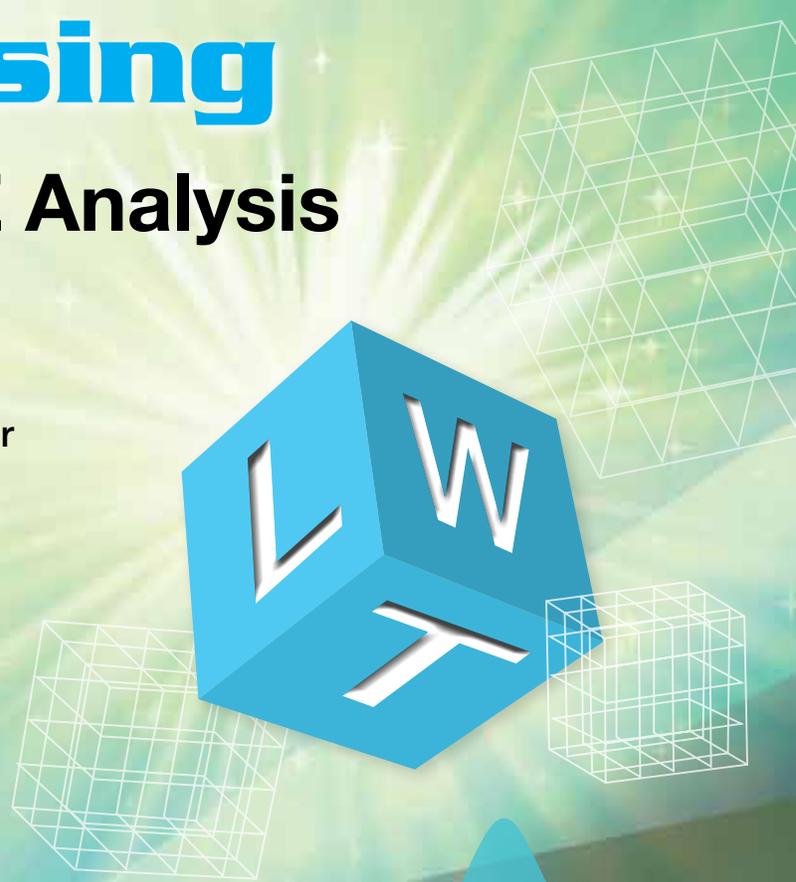
See What You've Been Missing

LxWxT=3D in ONE Analysis

Microtrac Image Analysis PartAn Product Family

Proven technology that provides superior measurement capability including:

- Patented 3D analysis — unique to Microtrac!
- Laboratory and process instrumentation
- Measure materials from 4µm to 127,000µm
- Ability to analyze wet or dry particulate



ACADEMIA



CERAMICS



CHEMICALS



ENERGY



ENVIRONMENTAL



FOOD/AGRICULTURE



LIFE SCIENCES



MINING, MINERALS,
METALS



OIL AND GAS



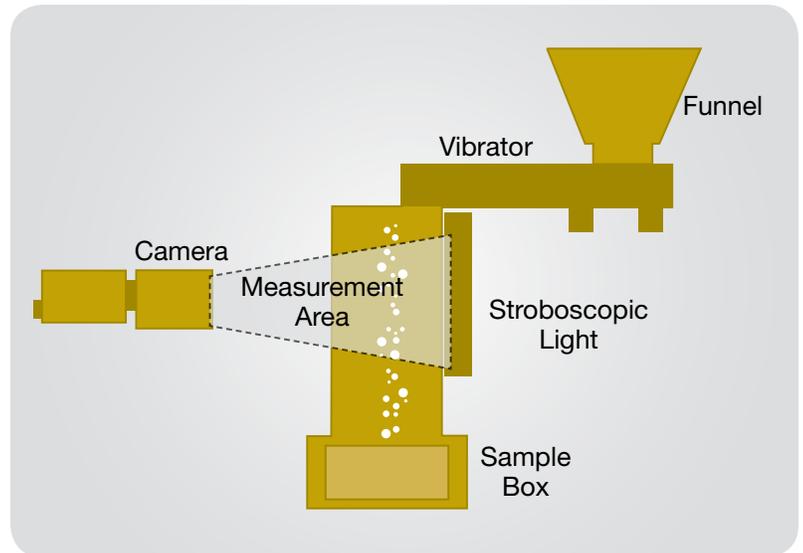
PHARMACEUTICALS



PLASTICS

Dynamic Image Analysis Technology ...Much More, Much Better

Dynamic Image Analysis (DIA) is a technique that characterizes particles in motion by digitizing photos of each particle and storing them in an image file. The images are then used to calculate morphological parameters based on the known size and location of the pixels in each image. DIA can measure either dry material or suspensions and emulsions.



How Our Patented 3D Measurement Works

The PartAn 3D reports all the size and shape parameters that a 2D DIA can with one major addition: Thickness. And because we track particles it is done in one run. Unique to the Microtrac PartAn 3D.

Image Analysis Experts Since 1987!

With over 25 years at the forefront of technological advances in measuring material size and shape in real-time, Microtrac is the established leader in delivering innovative analysis solutions. Here is a look back at the history of the image analysis product line.



1987 First PartAn Online Image Analyzer installed, more than 10 years prior to any other.



1992 Developed first PartAn Lab Instrument for size and shape measurements.

Microtrac PartAn Lab-based Image Analysis Systems

PartAn Mini

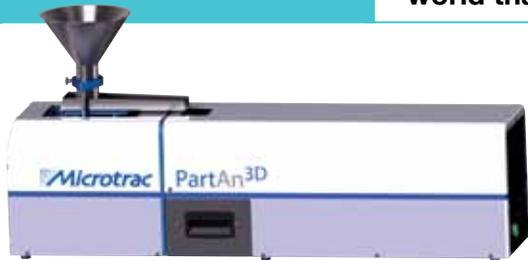


Fine particle size and shape analyzer

- Characterizes >30 morphological parameters
- Measurement of dry particles ranging in size from 4 μ m to 4,500 μ m
- Utilizes compressed air to disperse fine powders
- Analyzes 100 images per second with our high-speed, high-resolution camera
- Rugged design with a compact footprint
- Enclosed optical system which reduces downtime for maintenance

Exclusive 3D technology!

PartAn^{3D}



Only particle size and shape analyzers in the world that measures in 3D

- Characterizes >30 morphological parameters of your material including 3D
- Measurement of dry particles ranging in size from 15 μ m to 35,000 μ m; 3D size and shape for particles ranging in size from 35 μ m to 35,000 μ m
- Analyzes 100 images per second with our high-speed, high-resolution camera
- Enclosed optical system which reduces downtime for maintenance
- Rugged and adaptable for any lab setting

PartAn^{3D} Maxi



Large particle 3D size and shape analyzer

- Characterizes >30 morphological parameters of your material
- Measurement of dry particles ranging in size from 280 μ m to 127,000 μ m
- Customizable sample introduction
- Analyzes 100 images per second with our high-speed, high-resolution camera
- Enclosed optical system which reduces downtime for maintenance
- Rugged and adaptable for any lab setting

PartAn SI

Wet particle size and shape analyzer integrated with diffraction



- Whether your process requires agglomeration or you simply want to avoid it, now you can visually validate your material with the Microtrac S3500 SI
- Proven laser diffraction technology measures size distribution of particles ranging from 0.01µm to 2800µm, while the dynamic image analyzer measures >30 morphological parameters of materials ranging from 5µm to 1500µm
- Sample recirculator has various speed settings and inline sonication providing greater degree of flexibility for sample dispersion

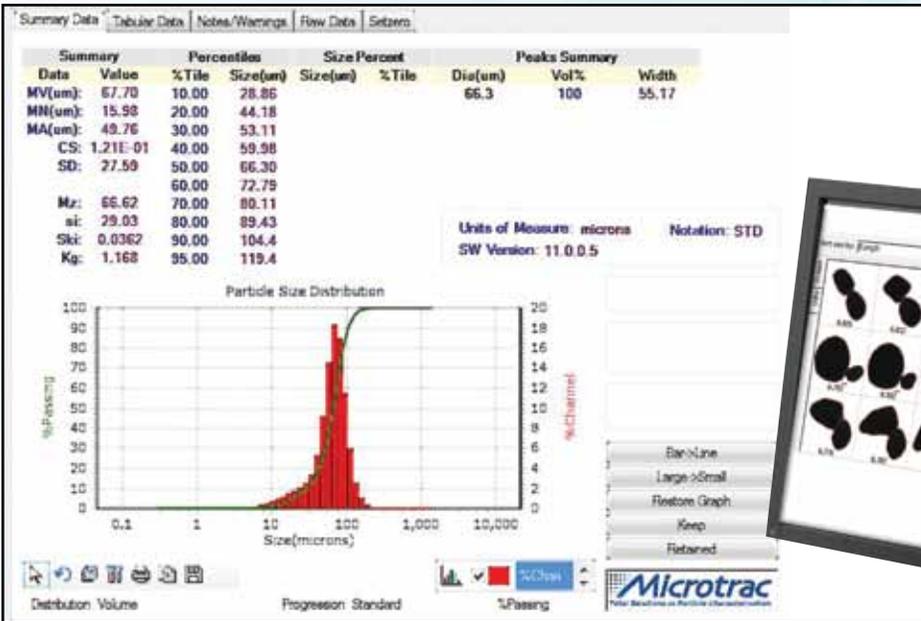


Image validation of agglomeration

DustMon

Measures dust index of granular and powder products



- Health and safety protection for your workforce in dusty environment
- Eliminates risk of excessive dust created by your products
- Uses light obscuration to determine how long it takes dust to settle
- Determines quantity of dust created - even low dust concentrators
- Calculates particle size distribution



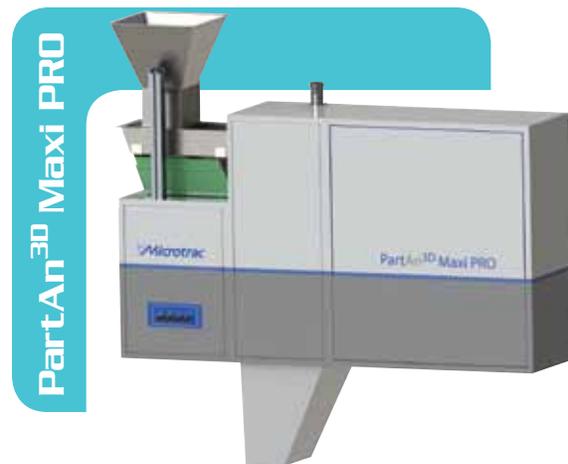
Microtrac PartAn PRO for Process Control

The power of online measurement

Microtrac's lineup of online dynamic image analyzers includes the following wet and dry solutions:

Dry

- **PartAn 3D PRO** – For size range 15 μ m to 35,000 μ m. 3D size and shape for particles ranging in size from 35 μ m to 35,000 μ m
- **PartAn 3D Maxi PRO** – 3D size and shape for large materials ranging in size from 280 μ m to 127,000 μ m



Wet

PartAn SI PRO particle size and shape analyzer for wet dispersions ranging in size from 5 μ m to 1500 μ m. The PartAn SI PRO can be integrated into any process loop and features a proprietary sample extraction process that ensures optimal conditioning of your material. Plus, the PartAn SI PRO sample volume requirement is scalable to fit your analysis needs.



The Microtrac Advantage

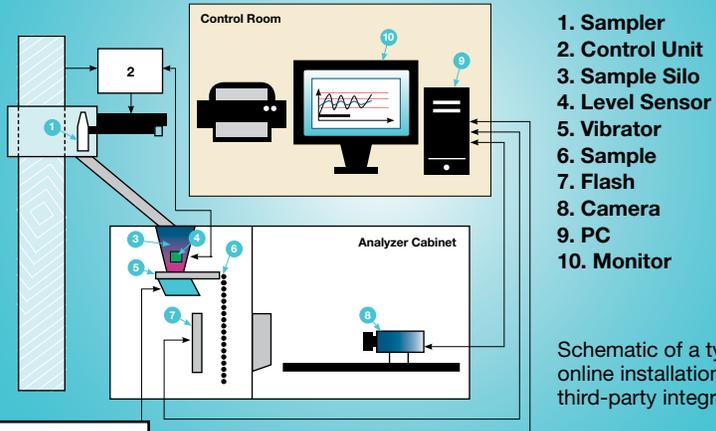
With over 25 years of experience in online particle size and shape measurements, Microtrac understands the needs of the process environment. See what sets us apart from the competition:

- Self-cleaning instruments – The Microtrac PRO series features a self-cleaning mechanism that utilizes compressed air to ensure the optical chamber remains dust-free – reduces downtime and operator intervention.
- Explosion-proof when needed – the PRO series is engineered for ruggedness enabling it to handle the toughest environments.

- The Pro Series ensures that the precise amount of sample is extracted. If measurement requirements change, the PRO can be adapted to meet the needs of constant representative sampling.
- Optimized for control room use

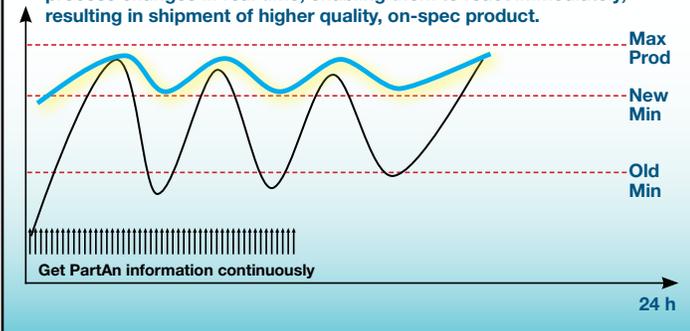
The PartAn PRO Series cleanly integrates with third-party sample systems

One Computer. Multiple PartAns. Endless Possibilities.



Schematic of a typical online installation – third-party integration.

The online measurement gives the operator the ability to see process changes in real time, enabling them to react immediately, resulting in shipment of higher quality, on-spec product.



Depiction of process swing control – **Improved product quality**

Deliver Higher Quality Products with the PartAn PRO Series

- Sample more frequently
- Reduce poor quality product returns
- Ensure top dollar for product you produce
- Increased production capacity

ROI is very quick. Contact us for estimates compared to sieves or other techniques.

See what a Microtrac PartAn PRO customer says about our solutions:

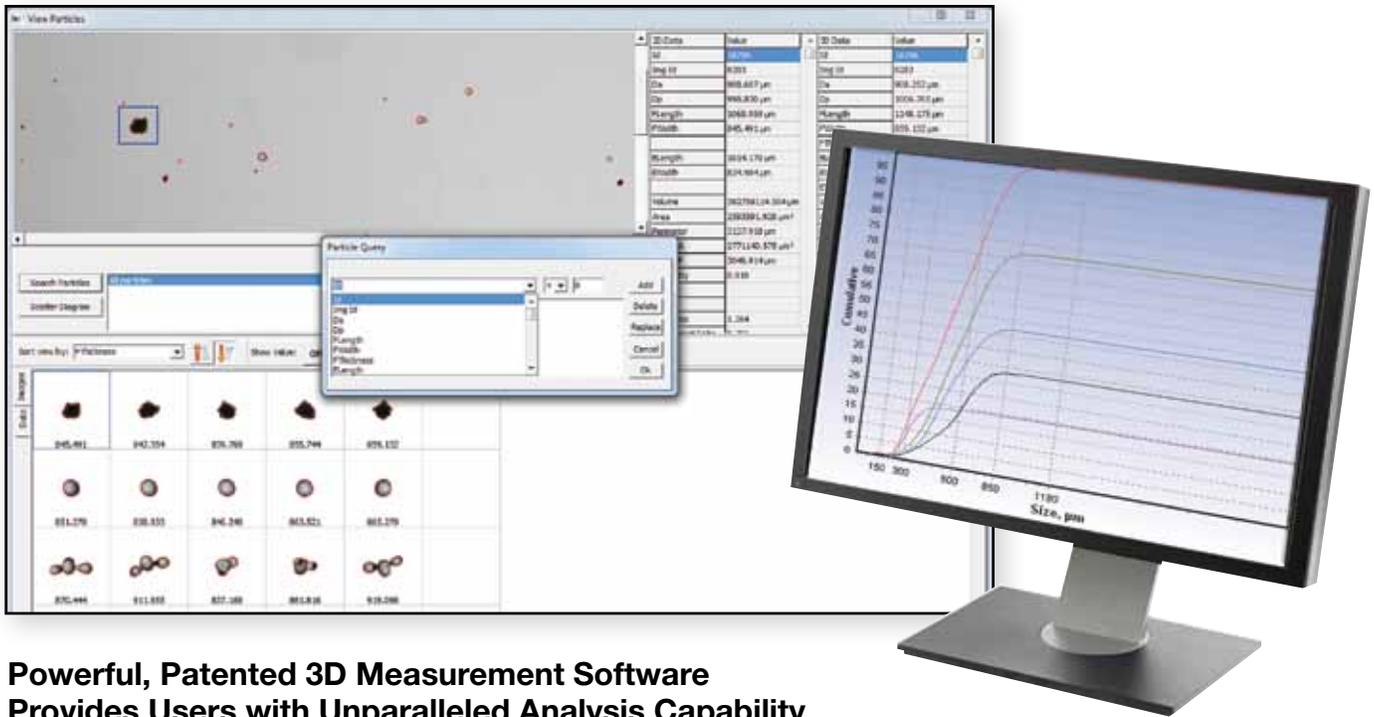
“The **PartAn 3D PRO** is a very easy to use instrument and is more accurate and representative when measuring large amounts of material compared to using a small amount in a sieve. The instrument saves our operators a lot of valuable time

because they are not manually running the instrument, which frees up their time to concentrate on other critical tasks.”

Laboratory Engineer – Global material engineering company



3D Measurement Software



Powerful, Patented 3D Measurement Software Provides Users with Unparalleled Analysis Capability

The classification function allows users to focus on areas that either need improvement or duplication to increase the overall quality of production. This powerful tool can drastically reduce the time it takes to identify a production process problem area. With the classification function you can:

- Compare multiple parameters to make critical decisions about the quality of your material
- Allows permanent set-up of a Standard Operating Procedure — ideal for multiple users across multiple shifts
- Identify and isolate parameters of interest for further investigation

- All filters can be reported as individual distributions to provide a more detailed understanding of areas of interest during the analysis
- Allows exclusion of filters from measurement – only report needed information
- Easy to export to other software platforms

Understand the composition of your material with our classification function. One analysis in less than a minute can provide you with a detailed percentage breakdown of your material. Here is a sample breakdown of a glass bead sample:

- 45% “Good Beads”
- 35% “Bad Beads”
- 20% Sand

Reporting: Simple, Powerful, Flexible

- Comprehensive reporting for R&D and methods development
- Users can choose number of channels and channel widths
- Choose from >30 morphological parameters in 1 to 6 tabular columns
- Streamline and lockdown for at-a-glance QC “pass/fail”
- Image library querying



For PartAn product line specifications, scan this QR code.

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Microtrac
Total Solutions in Particle Characterization

