



Particle Insight Raptor Portable

Particle Shape and Size Analyzer

The Particle Insight Raptor Portable system is designed to perform high resolution precision shape measurements of particles from 3um to 800um in a portable and benchtop configuration. By using Dynamic Image Analysis and a flexible sampling design users can get a full picture of their raw material particles.

Unique Features include:

- Shape, size, concentration, and thumbnail images of all analyzed particles.
- Number-based measurement. No minimum concentration limit.
- Flexible fluidic design allows for various sample suspension options including on-line.
- Disposable / interchangeable flow cells.
- Correlation Plots to identify and view rare event particles and trends.
- Sieve Correlation offers data reporting referencing sieve results for easy technology comparison.
- On-line continuous process monitoring capability.
- Ruggedized case and battery operated for field use or lab benchtop use.
- All raw images saved allows reanalysis of captured data.
- Full particle count codes compliant to ASTM, ISO, and NAVAIR oil wear particle requirements.
- Includes embedded Microsoft Surface Pro computer with touch-screen.
- Overlay data for sample-to-sample or lot-to-lot comparisons.
- Smart phone App allows remote real-time monitoring.

Understanding Size and Shape of particles in Drilling Mud enables predictive performance and gives Drilling Engineers tools to select the best lubricant for the job.

Gain a better understanding of what's in your recycled mud.

Knowing shape information of LCM (Lost Circulation Materials) is critical to using the proper materials for specific drilling applications.

The **Particle Insight Portable System** is a full-featured laboratory particle size and shape analyzer utilizing Dynamic Image Analysis technology. Housed in a ruggedized case with battery operation allows for laboratory as well as remote field use.

Ideal for applications where particle shape, not just the particle size, may be critical information for predicting raw material quality and maintaining a high level of process control. Particle morphology provides essential information that can affect flowability, dispersion, packing density, and sample segregation. It can also identify aggregate formation. The fully automated Particle Insight Portable is a well-suited research-grade instrument for use in a total production environment where speed, accuracy, and ease of use with the ability to also be portable in nature.

Operates using a touch-screen Microsoft Surface Pro computer and has an internal battery for up to 5 hours of continuous use. Flexible sampling system allows for adapting for online use, off-line use with an internal recirculating pump, or manually for small volumes using sterile syringes. All fluidic connections use standard Luer fittings.

Vision Analytical has been working in the Particle Analysis industry for over 18 years, exclusively focused on Dynamic Image Analysis, making this system the best image analyzer on the market.

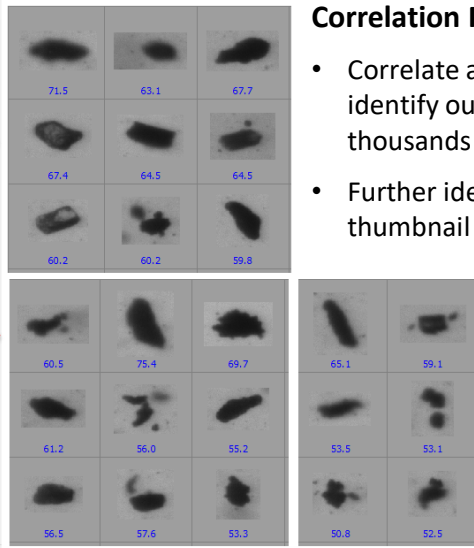
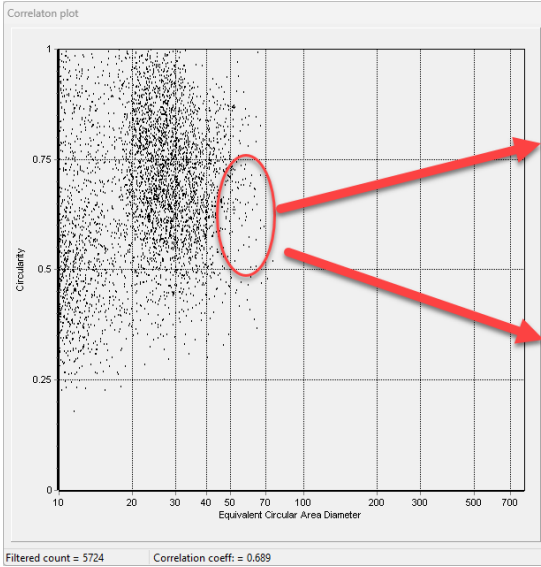


Particle Count, Concentration, Size, Shape

The value of a Dynamic Image Analyzer is not just the ability to show some pictures of particles but more the tools available to use the shape information to identify problems and take action. The Particle Insight Portable provides numerous tools that use the 32+ shape parameters of each particle to perform analysis not capable of size-only instrumentation.

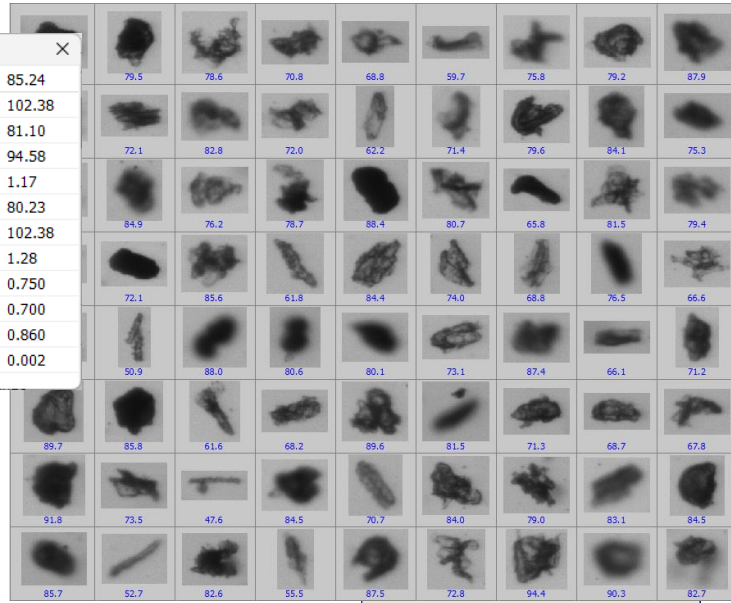
Correlation Plots for Rare Event Identification

- Correlate any of the available shape measures to identify outlier problematic particles in tens of thousands of drilling mud particles.
- Further identification and confirmation by viewing thumbnail particles of interest.



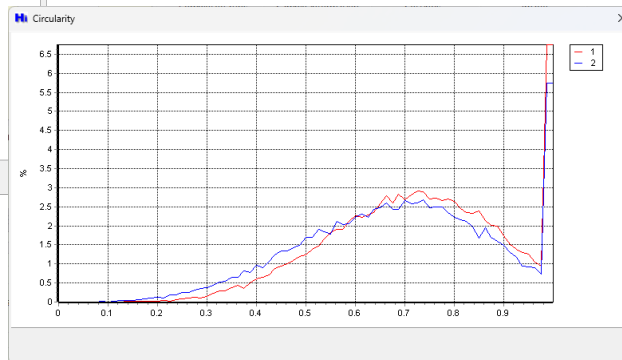
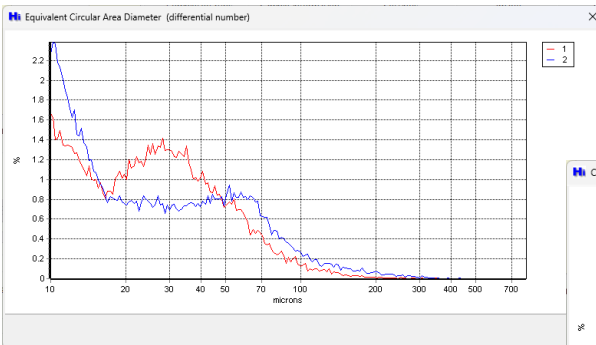
Actual Lost Circulation Material (LCM) Thumbnails

| Measure values | |
|----------------|--------|
| ECA Diameter | 85.24 |
| BC Diameter | 102.38 |
| BR Width | 81.10 |
| BR Length | 94.58 |
| BR AR | 1.17 |
| Feret Width | 80.23 |
| Feret Length | 102.38 |
| Feret AR | 1.28 |
| Circularity | 0.750 |
| Smoothness | 0.700 |
| Opacity | 0.860 |
| White Fraction | 0.002 |



Thumbnails shown in greyscale view to enhance users understanding of all particles. Capture tens of thousand particles and view all or selective viewing of each thumbnail image.

Each particle retains 32+ shape measure statistics.



Actual LCM comparison. Note differences in both size and shape. Higher circularity samples will flow and mix easier than irregular particles.

The Particle Insight Portable can easily differentiate these.



Scan this QR Code to see a video. Live analysis of LCM sample.