ParticleMetric

Powerful tool for inspection of particles and powders

Automated user interface
Intuitive & automated user interface

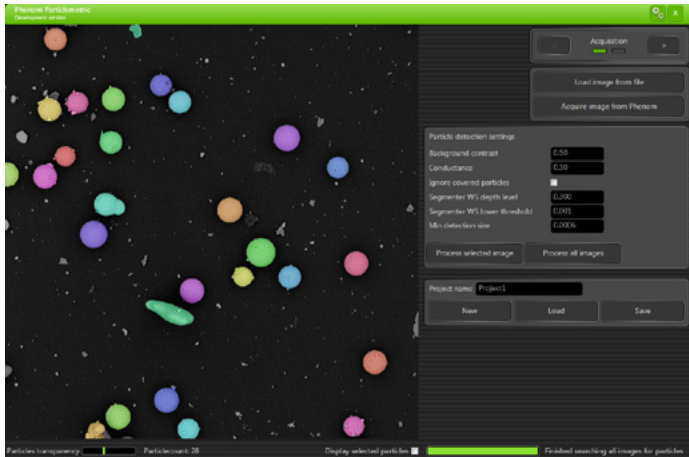### ProSuite
Integrated software in ProSuite

Reporting tool
Easy exporting of data for reporting

Nebula
Dry powder particle dispenser

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Overview processed images

Histogram selection

The visualization and analysis of particles is easier than ever before with the Phenom desktop scanning electron microscope (SEM) and ParticleMetric software. The combination of speed, ease of use and superb imaging quality of the Phenom with the imaging and particle analysis of ParticleMetric creates a powerful tool for inspecting a wide range of particle and powder samples.

ParticleMetric

The Phenom desktop SEM with ParticleMetric software allows easy generation and analysis of SEM images. The integrated ParticleMetric software allows the user to gather morphology and particle size data for many submicron particle applications.

The fully automated measurements of ParticleMetric allow a level of visual exploration beyond optical microscopy that can lead to new discoveries and innovations in powder design, development, and quality control.

The histograms, scatter plots and generated images can be exported in the selected format to be used as a reporting tool. Histograms of any measured particle property can be generated by numerical value and volume.

Scatter plots can be plotted from any combination of particle properties to reveal correlations and trends. The Phenom particle analysis solution allows users to obtain the data they need, when they need it. As a result, ParticleMetric accelerates particle analysis and improves product quality.

ParticleMetric Specifications

Particle analysis
- Particle size range — 100 nm – 0,1 mm
- Particle detection speed — Up to 1000 particles per minute
- Measured properties — Size, shape, count

Particle parameters — Area, circle equivalent diameter, surfacearea, circumscribed circle diameter, volume by area, circumference, aspect ratio, circularity, elongation, grayscale, major axis, minor axis, convex hull, gravity centre (x,y), pixel count, convexity.
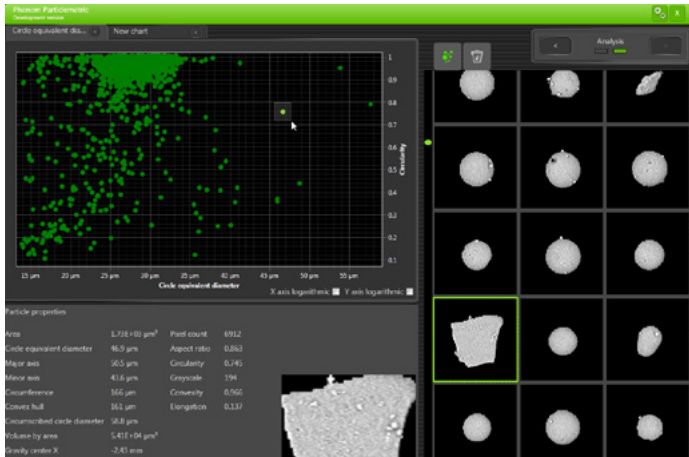
Graphical display
· Plot graphs in linear, log or double log scale, by number or by volume
· Scatter plots of any given parameter
· SEM image of individual particle

Output
· Report in docx format
· TIFF image format
· CSV file
· Project file (.PAME) for offline analysis

Part of ProSuite
· Network storage enabled
· Phenom integrated system

Scatter plot selection

Introducing the powder in the Nebula for a proper dry dispersion

Main advantages of ParticleMetric

• Integrated software in ProSuite
• Acquire images directly from the Phenom
• Identify and confirm phenomena such as broken particles, agglomerates and foreign particles
• Correlate particle features such as diameter, circularity, aspect ratio and convexity
• Fast and convenient operation improves workflow and makes scheduling simple and predictable
• Image collection is limitless as digital files are easily stored on a network or USB disk for data sharing, communication, or later reference
• The Phenom's ease of use and ability to operate in any environment means anyone can use it to visually interpret a wide range of samples
• Statistical data with high quality images

Nebula

With the Nebula, a standard method for uniform dry powder dispersion on SEM stubs becomes available. The Nebula ensures best sample preparation by obtaining a mono layer of particles avoiding particle clusters while maintaining the structure of fragile particles. This dry powder disperser is easy to use and allows the user to extract the best results in combination with ParticleMetric.

The unique combination of ParticleMetric and the Nebula allows the user to gather and analyze particle size and morphology data.

Target markets for ParticleMetric

• Cosmetics and personal care
• Food
• Agrochemicals
• Pharmaceuticals
• Ceramics
• Powder and surface coatings
• Particle based fillers
• Environmental particulates
• Filter/sieve companies

Nebula Specifications

Powder size range	0.1 – 1500 µm
Dispersion vacuum range	0 – 0,8 Bar
Pressure setting precision	0,05 Bar
Dimensions & weight	
• Dimensions	390(w) x 210(d) x 350(h) mm, 8.5 kg
• Diaphragm	145(w) x 220(d) x 213(h) mm, 4.5 kg vacuum pump

PoroMetric

The Phenom desktop SEM with PoroMetric allows easy generation and analysis of SEM images. The integrated PoroMetric software allows the user to gather data on distribution of pores, and pore parameters like pore size and aspect ratio.

PoroMetric allows the user to get a better understanding of the characteristics of the materials, as it extracts detailed information of the complete set of pores. PoroMetric is the best in its class when it comes to measurements of pores.

FiberMetric

In combination with the Phenom desktop SEM, the FiberMetric software allows the user to produce accurate size information from micro and nano fiber samples.

The automated image characterization generates hundreds of measurements in seconds. In addition to more accurate data acquisition, the automated measurements of the FiberMetric guarantee a fast return on investment.

With FiberMetric it has become possible to measure and analyze samples with large fiber diameter differences.

PoroMetric Specifications

Pore analysis
- Pore size range   100 nm – 0,1 mm
- Pore detection speed   Up to 1000 pores per minute
- Measured properties   Size, shape, count

Pore parameters   Area, circle equivalent diameter, aspect ratio, major axis, minor axis and manual measurement

Graphical display   · Plot graphs of the circle equivalent diameter
                            · SEM images and detected pores

Part of ProSuite   · Network storage enabled
                            · Phenom integraded system

FiberMetric Specifications

Fiber detection   · 40 µm to 100 nm
                            · 1 to 1000 measurements per image

Part of ProSuite   · Network storage enabled
                            · Phenom integrated system

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