

Phenom Pure

Economical and efficient desktop SEM



Phenom Pure

Basic features for high-resolution images

Fast and easy-to-use

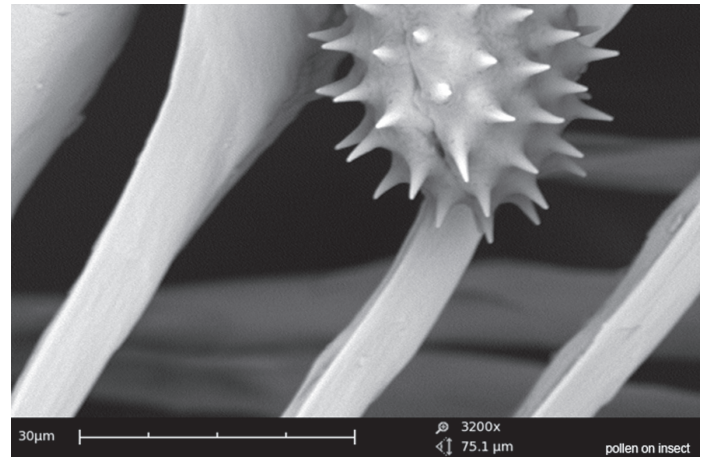
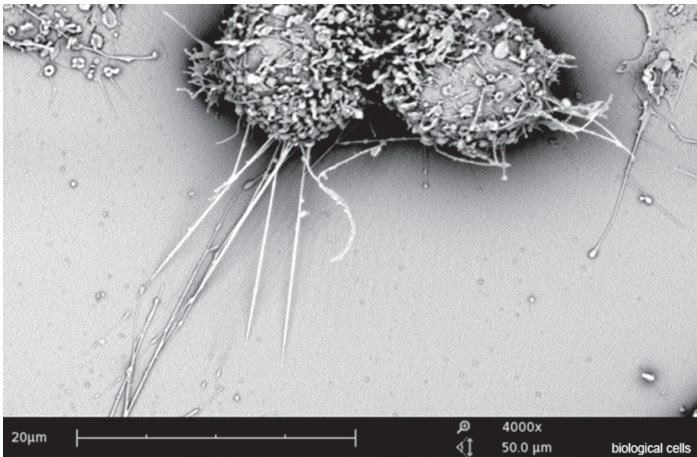
Intuitive user interface and smart sample loading

Never lost navigation

Swift navigation to any region of interest

Magnification

Magnification range up to 30,000x



The Phenom Pure is an ideal tool for the transition from light optical to electron microscopes. It is the most economical solution for high-resolution imaging, providing the best imaging results in its class.

Phenom Pure

The Phenom Pure is ideal for making the transition from working with a light microscope to operating an electron microscope. The Phenom Pure is equipped with the basic components for meeting high-resolution imaging needs. It provides high-quality images while using basic features, and offers the market's fastest loading and imaging time. The very reliable autofocus and automated source alignments make it the most user-friendly system on the market.

The Phenom Pure is the most economical and efficient solution for high-resolution SEM imaging. The worry-free maintenance and remote assistance are unique in its product category, and maximize system uptime. With more than 15 times the magnification of a conventional light microscope and large depth of focus, the Phenom Pure combines high resolution imaging with extreme ease-of-use.

Imaging Specifications

Imaging modes

- > Light optical Magnification range: 20x
- > Electron optical Magnification range: 70 - 30,000x
- Digital zoom max. 12x

Illumination

- > Light optical Bright field / dark field modes
- > Electron optical Long-lifetime thermionic source (CeB₆)
- > Acceleration voltage Default: 5 kV
- > Resolution ≤ 30 nm

Digital image detection

- > Light optical Black & white navigation camera
- > Electron optical High-sensitivity backscattered electron detector (compositional and topographical modes)
- JPEG, TIFF, BMP

Image formats

Image resolution options

456 x 456, 684 x 684, 1024 x 1024 and 2048 x 2048 pixels

Data storage

USB flash drive
Network

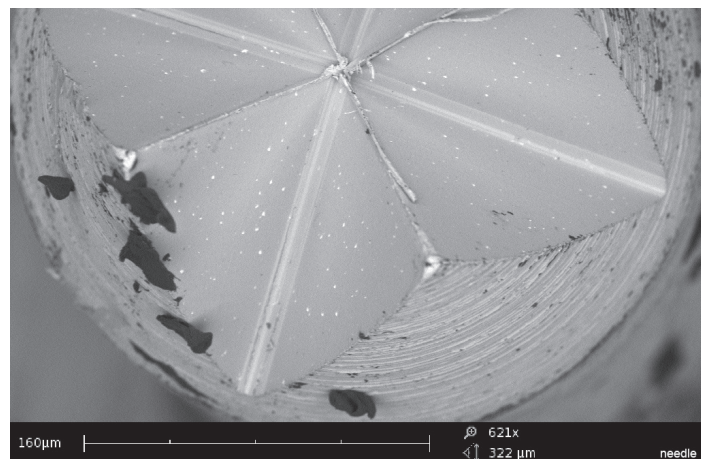
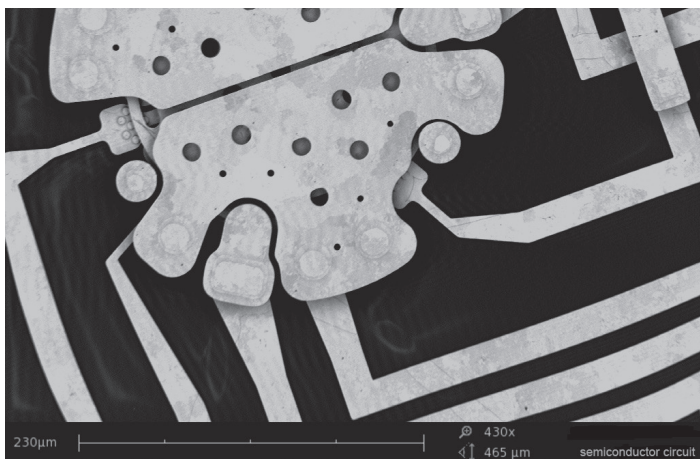
Sample stage

Sample size

Computer-controlled motorized X and Y
Up to 32 mm (Ø)
Up to 100 mm (h)

Sample loading time

- > Light Optical < 5 s
- > Electron Optical < 30 s



Never lost navigation

The navigation camera in the Phenom Pure provides information that helps the operator to make a link between the optical and electron-optical images. Users are ready to take images after only 10 minutes of basic training. A large variety of sample holders is available for the Phenom Pure to accommodate a large range of samples. Sample loading is fast and safe due to our patented sample vacuum loading technology.

The optical camera, motorized stage and touch-screen user interface work together to help navigate swiftly to any region of interest. Upon touching the position to investigate on the optical image and the stage automatically centers the region of interest.

Switching to electron imaging mode is fully automated and fast at the touch of just one button. A high resolution image is available within 30 seconds of loading the sample. Saving images is practical and easy on a USB memory stick or network storage location for off-line analysis and distribution.

The user always knows the position on the sample with the unique Never Lost Navigation. Overviews of both the optical and electron optical images provide clear reference point at all times. The sample can easily be moved by touching the feature of interest on the screen; the motorised stage will instantly move to the desired position.

System Specifications

System	Imaging module 19" monitor Rotary knob Diaphragm vacuum pump Power supply USB flash drive
Dimensions & Weight	
> Imaging module	286(w) x 566(d) x 495(h) mm, 50 kg
> Diaphragm vacuum pump	145(w) x 220(d) x 213(h) mm, 4.5 kg
> Power supply	156(w) x 300(d) x 74(h) mm, 3 kg
> Monitor	375(w) x 203(d) x 395(h) mm, 7.9 kg

Requirements

Ambient conditions	
> Temperature	15°C ~ 30°C (59°F ~ 86°F)
> Humidity	< 80 % RH
> Power	Single-phase AC 110 – 240 Volt, 50/60 Hz, 300 W (max.)
Recommended table size	120 x 75 cm, load rating of 100 kg



ProSuite

ProSuite is an optional application system that has been developed to further enhance the capabilities of the Phenom system. ProSuite enables maximum information to be extracted from images obtained on the Phenom imaging system. It offers multiple solutions to specific application needs. ProSuite contains standard applications such as Automated Image Mapping and Remote User Interface. Optional applications are FiberMetric, ParticleMetric, PoroMetric, and 3D Roughness Reconstruction. Virtually all the properties of a sample can be revealed using the Phenom desktop SEM in combination with ProSuite.

Upgrade to Phenom Pure+

The Phenom Pure can be upgraded to enhance its imaging capabilities. This optional performance package improves the resolution from 30 nm to 25nm and more than doubles the magnification from 30,000 to 65,000. The performance package also enables usage of 10 kV acceleration voltage.

Upgrade to Phenom Pro

The Phenom Pro is a high-end imaging tool, providing images at an even higher magnification and better resolution while maintaining the ease of use. In addition, the Phenom Pro is equipped with a full colour navigation camera for even better positioning of the sample.

The Phenom Pure can be upgraded to a Phenom Pure+, a Phenom Pro or be equipped with the Phenom ProSuite.

ProSuite Specifications

System	Automated collection of images Real-time remote control Intuitive single-page user interface Standard applications included: Automated Image Mapping & Remote User Interface
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Optional

3D Roughness Reconstruction	Based on "shape from shading" technology, no stage tilt required Fast reconstruction
FiberMetric	Fast and automated collection of all statistical data Large range of fibers and pores can be measured
ParticleMetric	Morphology and particle size data for submicron particle applications
PoreMetric	Fully automated visualization and analysis of pores

Upgrade to Phenom Pure+

Imaging modes	
> Light optical	Magnification range: 20x
> Electron optical	Magnification range: 80 - 65,000x
	Digital zoom max. 12x
Illumination	
> Acceleration voltages	5 kV, 10 kV
> Resolution	≤ 25 nm

Upgrade to Phenom Pro

Imaging modes	
> Light optical	Magnification range: 20 - 135x
> Electron optical	Magnification range: 80 - 130,000x
	Digital zoom max. 12x
Illumination	
> Acceleration voltages	5 kV, 10 kV, 15 kV
> Resolution	≤ 14 nm