

# Phenom Pure

Economical and efficient desktop SEM



## Phenom Pure

Basic features for high resolution images

## Fast and easy to use

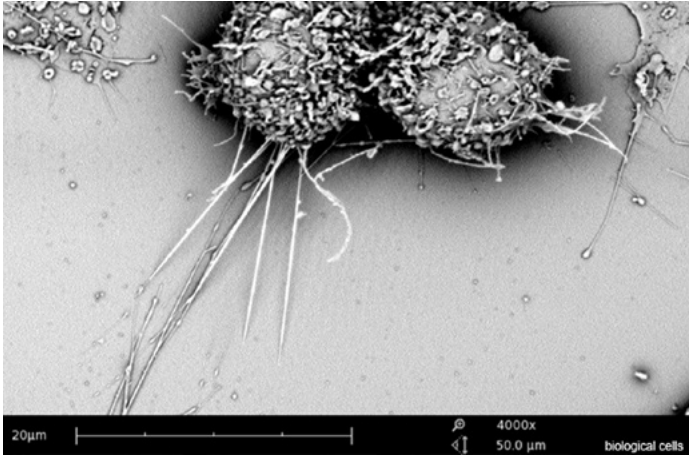
Intuitive user interface and smart sample loading

## Never lost navigation

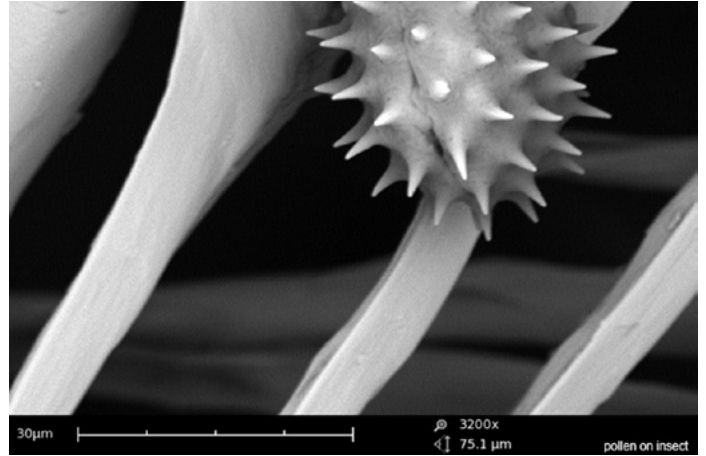
Swift navigation to any region of interest

## Magnification

Magnification range up to 30,000x



Biological cells



Pollen on insect

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 desktop scanning electron microscope (SEM) 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 (CeB<sub>6</sub>)
- 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)

### Image formats

JPEG, TIFF, BMP

### 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

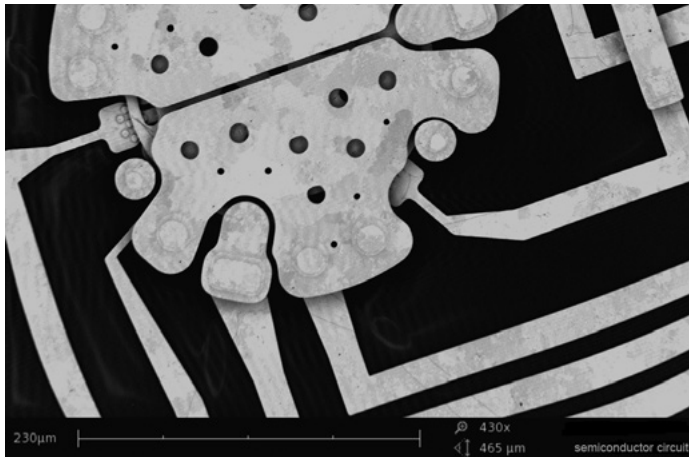
Computer-controlled motorized X and Y

### Sample size

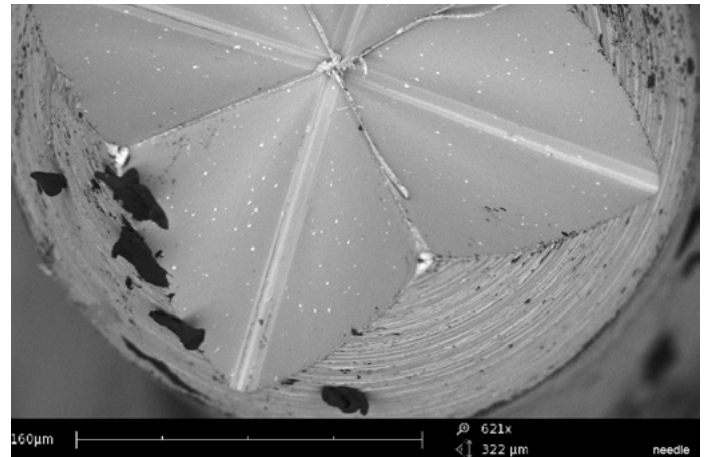
- 32 mm (Ø)
- 100 mm (h)

### Sample loading time

- Light optical                      < 5 s
- Electron optical                 < 30 s



Semiconductor circuit



Needle

### 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 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 intuitive user interface work together to help navigate swiftly to any region of interest. Upon clicking on the position of the optical image to investigate, 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 offline 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

<b>System</b>	<ul style="list-style-type: none"> <li>· Imaging module</li> <li>· 19" monitor</li> <li>· Rotary knob</li> <li>· Diaphragm vacuum pump</li> <li>· Power supply</li> <li>· USB flash drive</li> </ul>
<b>Dimensions &amp; weight</b>	
• 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

<b>Ambient conditions</b>	
• 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.)
<b>Recommended table size</b>	120 x 75 cm, load rating of 100 kg



ProSuite

### ProSuite

ProSuite is an optional application platform 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 3D Roughness Reconstruction, FiberMetric, ParticleMetric, and PoroMetric. Virtually all the properties of a sample can be revealed using the Phenom desktop SEM in combination with ProSuite.



Phenom ProX

### Performance upgrades

The Phenom Pure can be upgraded to enhance its imaging capabilities. This optional performance package improves the resolution from 30 nm to 25 nm and increases the magnification by more than a factor of 2 (from 30,000 to 65,000x). The performance package also enables usage of 10 kV acceleration voltage.

Additional upgrades on top of this performance package are available as well: both an upgrade to integrated EDS and an upgrade to Phenom Pro performance level are available.

## ProSuite Specifications

<b>System</b>	<ul style="list-style-type: none"> <li>· Automated collection of images</li> <li>· Real-time remote control</li> <li>· Intuitive single page user interface</li> <li>· Standard applications included: Automated Image Mapping &amp; Remote User Interface</li> </ul>
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### Optional

<b>3D Roughness Reconstruction</b>	<ul style="list-style-type: none"> <li>· Based on "shape from shading" technology, no stage tilt required</li> <li>· Fast reconstruction</li> </ul>
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<b>Fibermetric</b>	<ul style="list-style-type: none"> <li>· Fast and automated collection of all statistical data</li> <li>· Large range of fibers and pores can be measured</li> </ul>
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<b>ParticleMetric</b>	Morphology and particle size data for submicron particle applications
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<b>PoroMetric</b>	Fully automated visualization and analysis of pores
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## Performance upgrade

<b>Imaging modes</b>	
<ul style="list-style-type: none"> <li>· Light optical</li> <li>· Electron optical</li> </ul>	Magnification range: 20x · Magnification range: 80 - 65,000x · Digital zoom max. 12x
<b>Illumination</b>	
<ul style="list-style-type: none"> <li>· Acceleration voltage</li> <li>· Resolution</li> </ul>	5 kV, 10 kV ≤ 25 nm