



Partnership begins here

Inspect S

Low-vacuum SEM for high-resolution material inspection and characterization

FEI's Inspect range of products and solutions are tailored towards routine high resolution inspection and characterization applications in research, process development, and failure analysis and process control. Each Inspect tool is built on proven FEI technologies specializing in chamber vacuum technology, electron optics and sample throughput. Experience and know-how make Inspect based solutions robust, easy-to-use and affordable.

Inspect S enables high-resolution inspection and characterization capabilities using thermal emission electron optics on the industry's leading low vacuum SEM platform. Low vacuum capabilities are particularly useful for the inspection and characterization of non-conductive and/or heavily contaminated materials. The Inspect S delivers low- and high-vacuum high-resolution imaging and analysis performance combined in a single solution. The combination of both capabilities – high-vacuum and low-vacuum – significantly enhances the instrument's flexibility in dealing with diverse sample types and throughput.

Inspect invites you into FEI's world of – Tools for Nanotech. Familiarize yourself with FEI's technology and product portfolio that extends to sub-Ångström characterization and sample preparation by focused ion beam to FEI's global application and service, through our global sales and support network.

- *Increase your imaging solutions with high-resolution, high- and low-vacuum secondary electron imaging*
- *Minimize the time required to train operators thanks to an intuitive graphical user interface*
- *Minimize the complexity of sample preparation. Low-vacuum capability enables charge free imaging and analysis of non-conductive specimens*
- *Increase the amount of information you get from your sample by using the low-vacuum, low kV surface imaging capability*
- *Minimize the time required to navigate to the feature of interest by using the accurate 4-axis motorized computer controlled eucentric specimen stage*
- *Minimal requirements on floor space, power supply and environment*

Essential specs

Electron optics

- High-performance thermal emission-SEM column, with dual-anode source emission geometry, fixed objective aperture and through-the-lens differential pumping
- Filament lifetime > 100 hours

Resolution

- High-vacuum
 - 3.0nm at 30kV (SE)
 - 10nm at 3kV (SE)
 - 4.0nm at 30kV (BSE)
- Low-vacuum
 - 3.0nm at 30kV (SE)
 - 4.0nm at 30kV (BSE)
 - < 12nm at 3kV (SE)
- Accelerating voltage: 200V – 30kV
- Probe current: up to 2µA – continuously adjustable

Detectors

- Everhardt-Thornley SED*
- Patented, low-vacuum SED (LFD)*
- IR-CCD
- Solid-state BSED
- Gaseous analytical BSED (GAD)
- * standard



Minimal floorplan

Chamber vacuum

- High-vacuum: < 9e-4 Pa
- Low-vacuum: 10-270 Pa

Vacuum system

- 1x TMP
- 1x PVP

Chamber

- 284mm left to right
- 10mm analytical WD
- 8 ports
- EDX take-off angle: 35°

4-axis motorized stage

- Eucentric goniometer stage
- X = 50mm
- Y = 50mm
- Z = 50mm (25mm motorized)
- T = -15° to +75° (manual)
- R = 360° continuous
- Repeatability: 2µm

System control

- 32-bit graphical user interface with Windows XP, keyboard, optical mouse
- Image display: 1x19-inch LCD, SVGA 1280 x 1024

Image processor

- Up to 4096 x 3536 pixels
- File type: TIFF (8 or 16 bit), BMP or JPEG

Support materials

- Operating instructions on CD
- On-line help
- Inspect getting started training CD

System options

- Support PC (including 2nd 19-inch LCD Monitor)
- BSED detector
- CCD IR camera
- Video printer
- Specimen holder kit
- Image archive and analysis SW
- EDS
- EBSD

Installation requirements

- Power: voltage 230V (+6%, -10%)
- Frequency: 50 or 60 Hz (+/- 1%)
- Power consumption: < 2.0kVA for basic microscope
- Environment:
 - temperature 15-30°C
 - relative humidity below 80% RH
 - stray AC magnetic fields < 100nT asynchronous < 300nT synchronous
- Door width: 90cm
- Weight: column console 450kg
- No compressed air or water cooling is required

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