



*Any sample,
all data, anywhere*

- *Increase your imaging capabilities with high resolution high-, low- and extended low-vacuum (ESEM) secondary electron imaging*
- *Minimize switching between different detectors, have all the information from the different detectors instantly available on one single screen in Quanta's four Quadrant user interface*
- *Minimize the amount of sample preparation, low- and ESEM-vacuum capability enables charge free imaging and analysis of non-conductive specimens and/or hydrated specimens*
- *Increase your analysis capabilities by performing in-situ dynamic experiments and live record them on video*
- *Increase your analytical capabilities by enabling EDS and EBSD analysis on non-conductive samples in Low-vacuum thanks to Quanta's patented through the lens pumping*
- *Increase your flexibility and operate the microscope from any computer by using Quanta's remote capability*

FEI Quanta 600 FEG

The most versatile high resolution low-vacuum FEG SEM with extended low-vacuum capabilities for the really challenging samples and dynamic experiments

Technologies, materials and samples are changing faster than ever before, and so are the requirements of today's analytical laboratory. Analytical tools need to accommodate materials with very different properties while collecting more analytical data in less time. The demand for non-destructive analytical techniques and functionality is increasing.

The Quanta™ series from FEI is the advanced, flexible solution for current and future diagnostics applications. Featuring three imaging modes – high-vacuum, low-vacuum and ESEM™ it accommodates the widest range of samples of any SEM system. It is engineered to provide maximum data – imaging and microanalysis – from all specimens, with or without preparation.

The new 2nd generation of Quanta's feature improved image resolution and contrast thanks to a new imaging engine that also accommodates remote control.

Better data. More flexibility. Higher efficiency.

The Quanta series delivers more value for your investment.

Essential specs

Electron optics

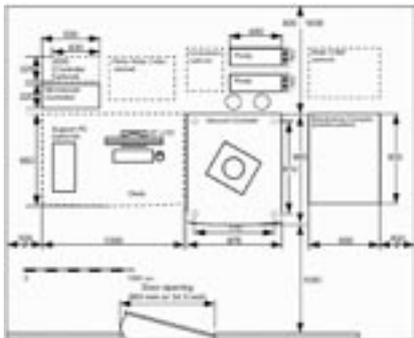
- High-resolution field emission-SEM column optimized for high brightness/high current
- 45° objective lens geometry with through-the-lens differential pumping and heated objective apertures

Resolution

- High-vacuum
 - 0.8nm at 30kV (STEM)*
 - 1.2nm at 30kV (SE)
 - 2.5nm at 30kV (BSE)
 - 3.0nm at 1kV (SE)
- Low-vacuum
 - 1.5nm at 30kV (SE)
 - 2.5nm at 30kV (BSE)
 - 3.0nm at 3kV (SE)
- Extended vacuum mode (ESEM)
 - 1.5nm at 30kV (SE)
- Accelerating voltage: 200V – 30kV
- Probe current: up to 100nA – continuously adjustable

Detectors

- Everhardt-Thornley SED
- Low-vacuum SED (LFD)
- Gaseous SED (GSED)
- IR-CCD
- Solid-state BSED
- Gaseous analytical BSED (GAD)*
- STEM*
- Scintillator BSED/CLD*
- Gaseous BSED*
- * optional



Minimal floorplan

Chamber vacuum

- High-vacuum: < 6e-4 Pa
- Low-vacuum: 10 to 130 Pa
- ESEM-vacuum: 10 to 4000 Pa

Vacuum system

- 1x 240 l/s TMP, 2x PVP
- Patented through-the-lens differential pumping
- Beam gas path length: 10 or 2 mm

Chamber

- 379mm left to right
- 10mm analytical WD
- 10 ports
- EDX take-off angle: 35°

5-axis motorized stage

- Pseudo-eucentric goniometer stage
- X,Y = 150mm
- Z = 65mm (Z – clearance 93.5mm)
- T = -5° to +70° (WD dependent)
- R = 360° continuous

System control

- 32-bit graphical user interface with Windows XP, keyboard, optical mouse
- Image display: 19-inch LCD, SVGA 1280 x 1024
- Single frame or 4-quadrant image display
- 4-quadrant live

Image processor

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

Standard utilities

- Digital video recording (.avi)
- SW temperature control
- Image histogram and measurement software

Support materials

- On-line help
- Quanta FEG getting started training CD

System options

- Support PC (incl. 2nd 19-inch LCD monitor and DVD R/W)
- Multi-functional control panel
- Image archive software
- SW controlled Peltier cooled specimen stage
- SW controlled WETSTEM system
- SW controlled 1000°C heating stage
- SW controlled 1500°C heating stage
- Remote control SW
- Video printer
- Specimen holder kit
- EDS
- WDS
- EBSD
- e-Beam litho package
- CL system

Installation requirements

- Power: voltage 230V (-6%, +10%), Frequency: 50 or 60 Hz (+/- 1%)
- Power consumption: < 3.0kVA for basic microscope
- Environment: temperature 20 °C (+/- 3°C), relative humidity below 80% RH
- Stray AC magnetic fields < 40nT asynchronous < 300nT synchronous
- Acoustics: < 60 dBC
- Compressed air 4-6 bar – clean, dry and oil-free
- Water cooling is only required if room is not meeting specification according pre-install instructions
- Door width: 90cm
- Weight: column console 570kg
- Weight: electrical console 139kg

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