JEOL

Scientific/Metrology Instruments

Scanning Electron Microscope

Solutions for Innovation

InTouchScope™

JSM-IT100 Series

Scalable, Compact, High Performance Scanning Electron Microscope

The JSM-IT100 is a remarkably intuitive, high throughput SEM designed to streamline workflow in any lab. Fast data acquisition make imaging and analysis of samples a simple task. The SEM can be configured to meet a broad scale of imaging and analytical requirements.

- JSM-IT100—High Vacuum SEM
- JSM-IT100A—High Vacuum SEM with JEOL EDS
- JSM-IT100LV—Low Vacuum SEM
- JSM-IT100LA—Low Vacuum SEM with JEOL EDS

Form and Function

The InTouchScope SEM software integrates multi-touch control for an ergonomic and user-friendly experience, while still enabling traditional keyboard and mouse interface.

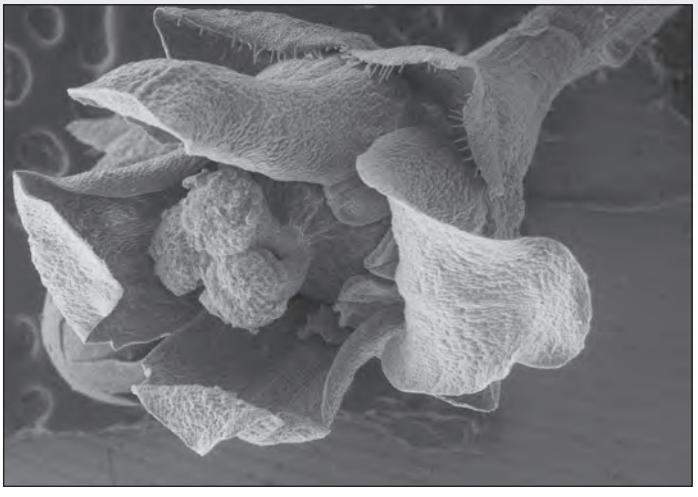
The large chamber and mechanically eucentric stage provide a platform for easy sample navigation, whether working on large objects or with many samples for labs that need high throughput.

Advanced electron optics and high sensitivity detectors make this SEM ideal for imaging a wide variety of sample types.

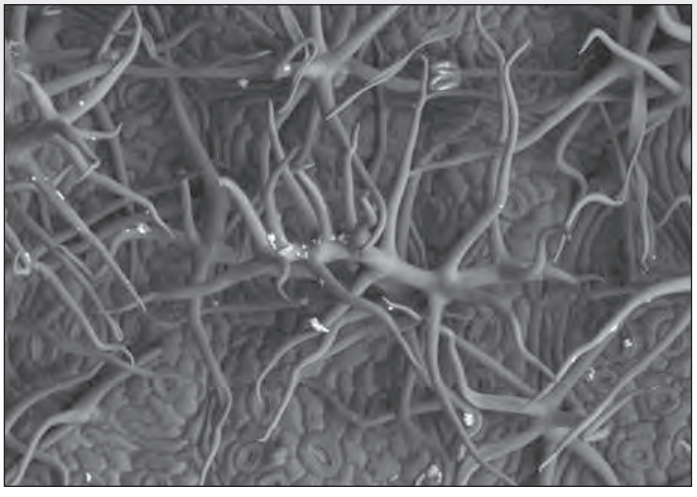
Set up the SEM anywhere and plug it into a standard wall outlet. No special facilities are required.

Low Vacuum Configuration

Simplify observation of non-conductive, outgassing, wet or oily samples with the JSM-IT100LV or JSM-IT100LA model.



LV SED image - Schinus



LV BSE image - Leaf

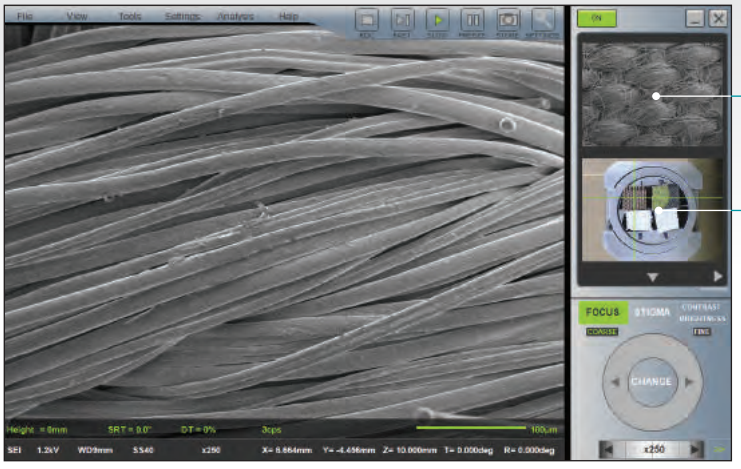
Easy Observation and Navigation

Multitouch Screen or Keyboard/Mouse/Knobset

All the controls are at your fingertips. Use the multi-touch monitor, mouse/keyboard or the operation panel (option) for flexible and intuitive operation.

Navigate from a Snapshot

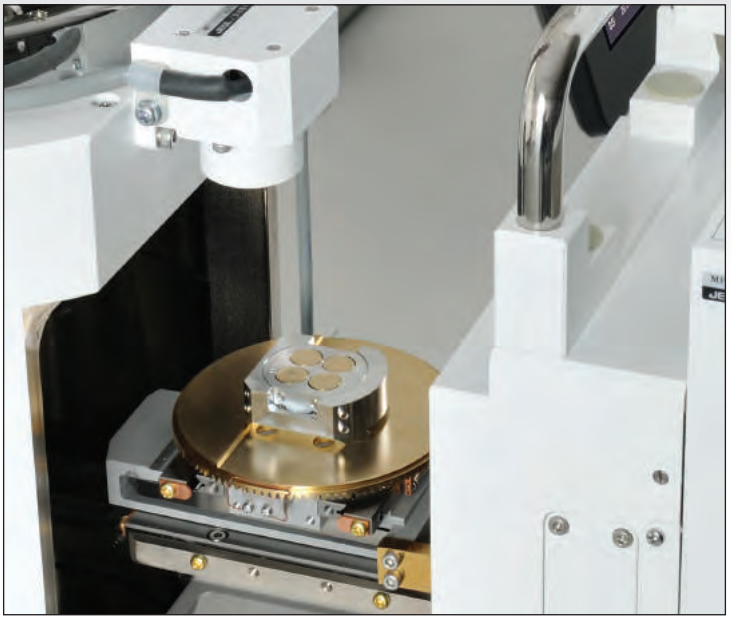
Live image



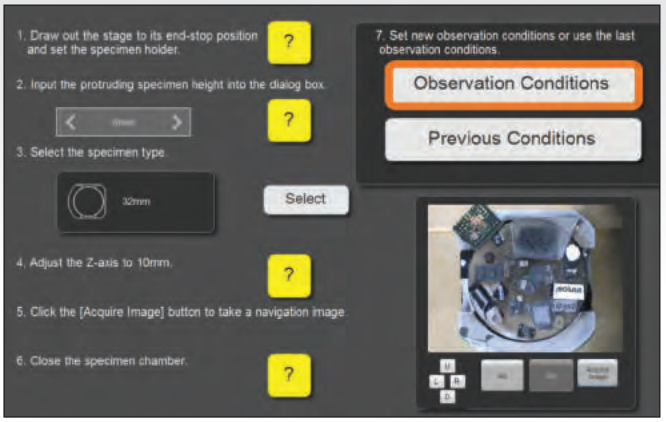
Snap Shot: Navigate from SEM Image
Stage Navigation System (SNS) option: Embedded color camera for point and click navigation from a color image. Cross hairs on the image show the location on the sample.

Automated for Optimum Results

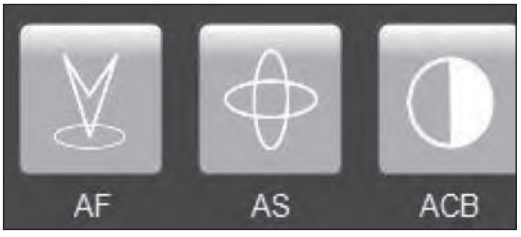
Simplify Workflow



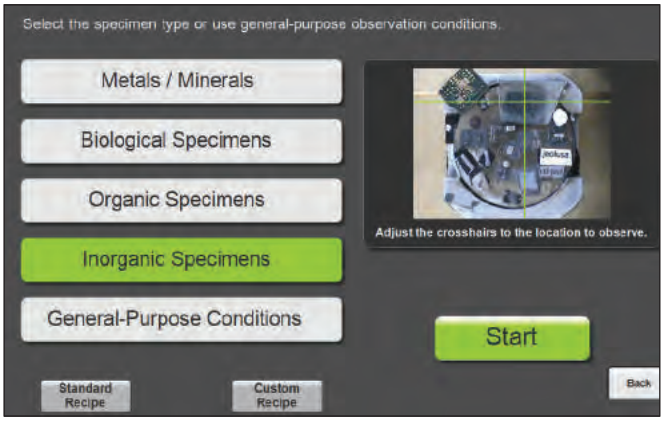
Stage Navigation System camera (optional) and sample stage.



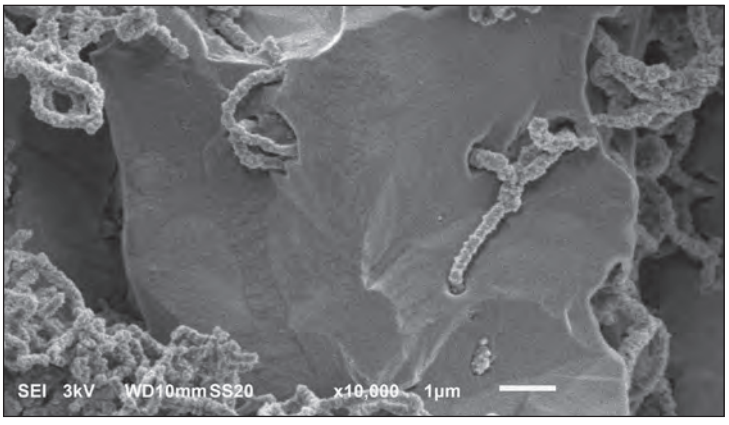
Easy Mode guides the user step by step from sample introduction, position setting (with SNS option), to automatic image generation based on sample category.



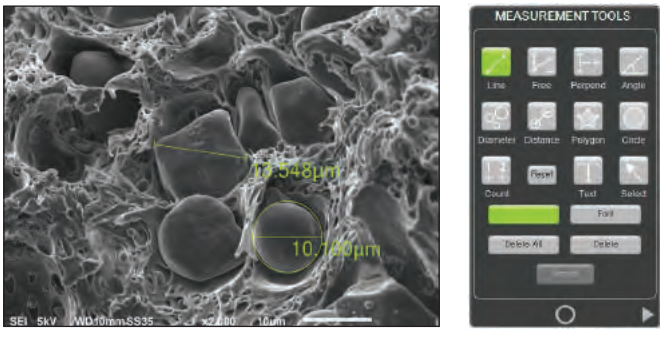
Automatic functions built in to facilitate imaging such as auto focus (AF), auto astigmatism correction (AS) and auto brightness/contrast (ACB).



Smart settings are built in for common sample types. Custom recipes can be created and recalled for user specific applications.



SE image - Rusticle

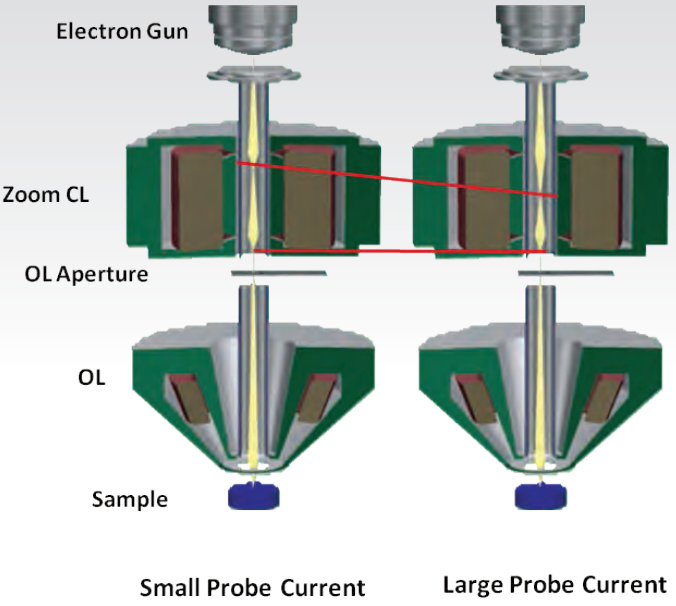


Built-in Measurement Function

Advanced Electron Optics and Detectors

Optimized for Best Performance

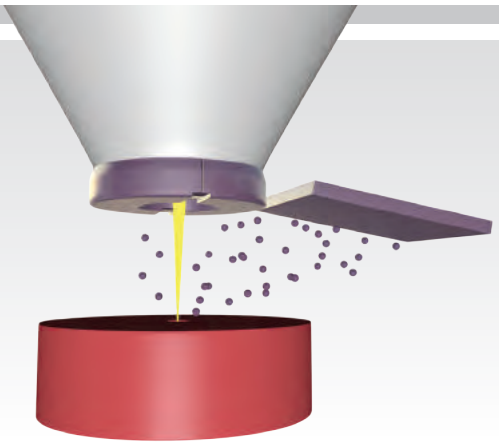
The electron gun is fully automated for optimal alignment. The gun bias voltage is automatically optimized over the entire range of accelerating voltages. The zoom condenser lens maintains image focus with changes in probe current. Stigma memory automatically corrects for astigmatism after changes in accelerating voltage or working distance.



Focal point stays the same as probe current increases

Filaments are pre-centered for easy replacement.

Advanced Electron Optics and Detectors

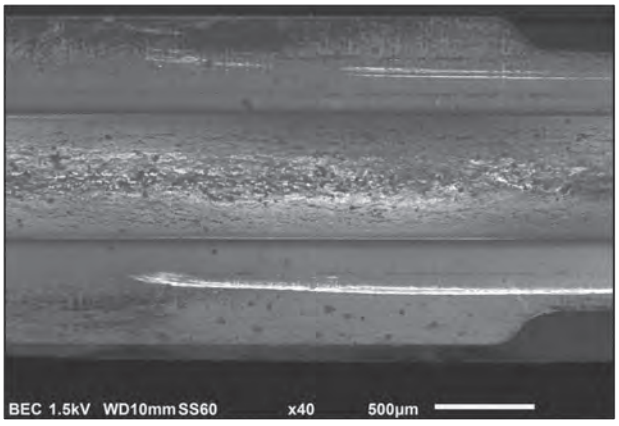


It is simple to quickly obtain high quality images using both Secondary Electron and Backscatter Electron Imaging. With expanded EDS analysis capabilities and ports for multiple detectors, the InTouchScope is a versatile workhorse SEM.

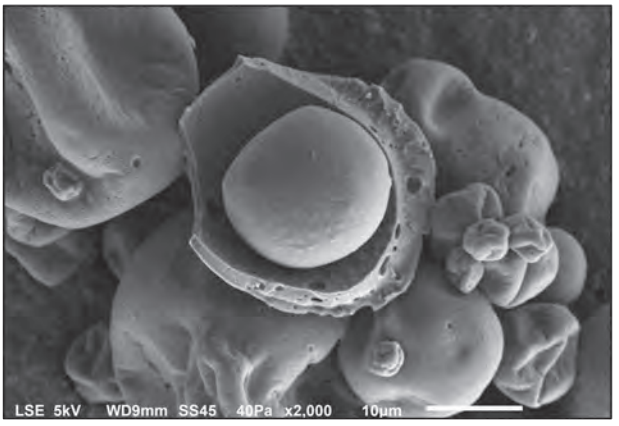
Backscatter Electron Detector

Observe composition, topographic or shadowed images. The JEOL backscatter electron detector has high sensitivity even at low voltages for imaging under a wide range of operating conditions.

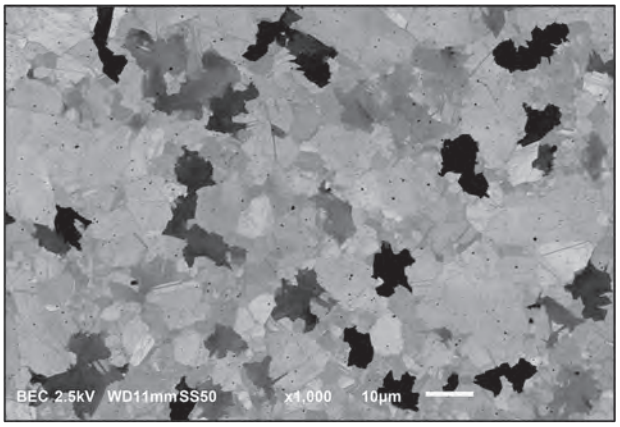
Low vacuum BSE images of ink on paper. Left to Right: Composition, Topographic, Shadow.



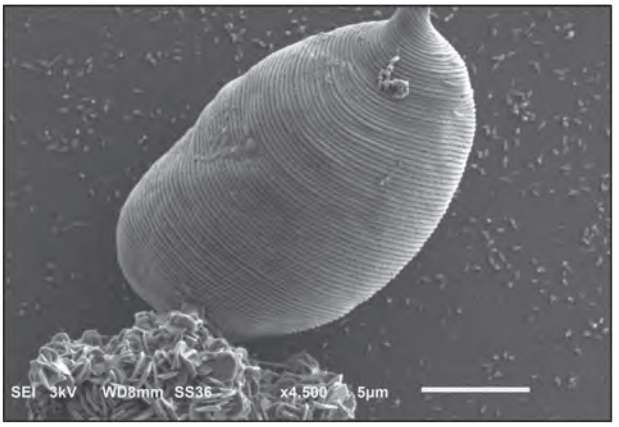
Lubricant on Connector – BSE at 1.5kV



Spice – LVSE at 5kV

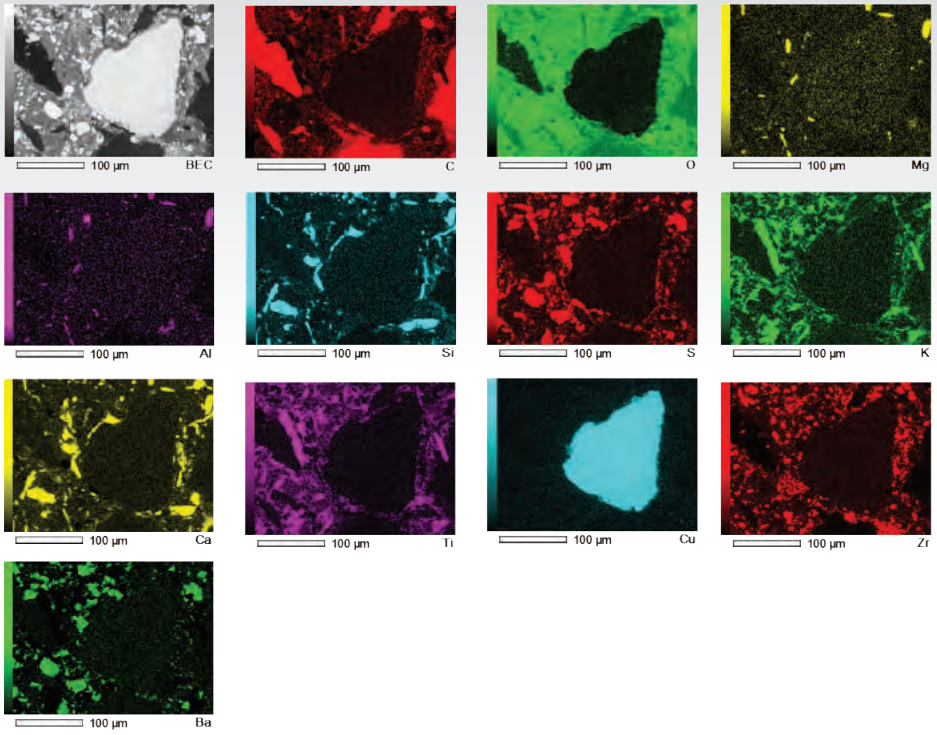


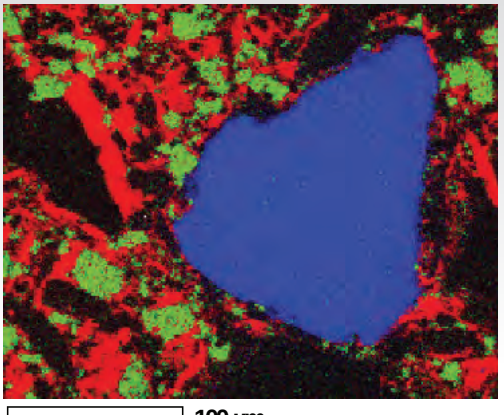
Graphene on Nickel – BSE at 2.5 kV



Protozoa – SEI at 3kV

From Observation to Analysis





Ceramic Brake Pad – Polished Mount: Quant Map
15kV, 430X, Low Vacuum Mode 45Pa

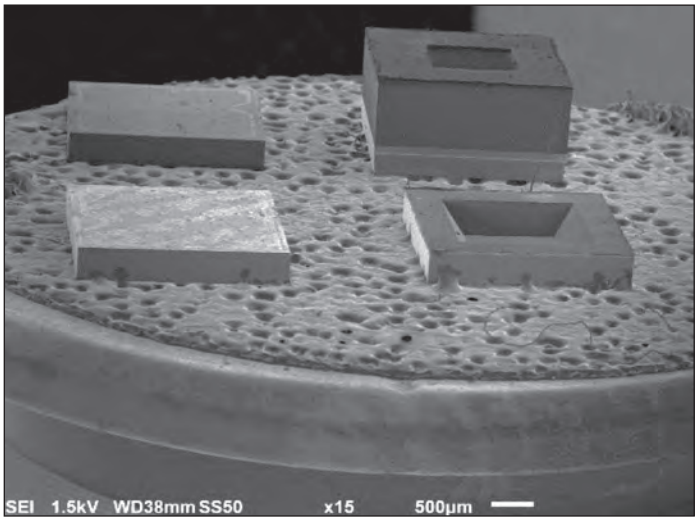
Fully Embedded EDS (Analytical Models)

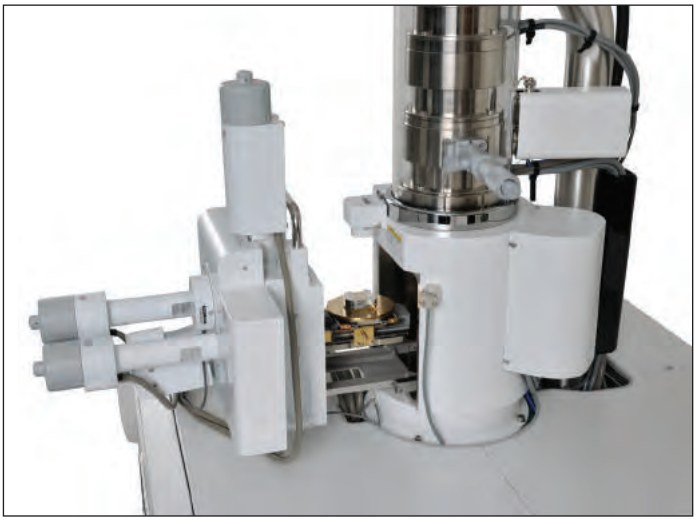
The JEOL EDS is fully integrated for qualitative and standardless quantitative analyses through the SEM software. The EDS features a silicon drift detector with guaranteed resolution of ≤129eV.

Analyze multiple points, areas, line scans or hyper spectral maps and quant maps. Drift compensation is standard.

Mechanically Eucentric Stage

Samples remain in the field of view and in focus when the stage is tilted at any working distance. This makes it easier to observe a sample at a variety of angles. Motor control options are available at: 2 (XY), 3 (XYR or XYZ) and 5 axes. Full coverage of samples as large as 125mm in diameter and as tall as 50mm.





Specifications

Filament	Pre-centered W hairpin filament
Accelerating Voltage	500V to 20kV (30kV option)
Resolution	High Vacuum Mode (SE): 4nm at 20kV, 8nm at 3kV, 15nm at 1kV (3nm at 30kV) Low Vacuum Mode (BSE): 5nm at 20kV (4nm at 30kV) – Low Vacuum models
Magnification	X5 to X300,000 (printed as 128mm x 96mm output size)
Standard Detectors	E/T type secondary electron detector Solid state backscatter electron detector (with low vacuum models) JEOL Silicon Drift EDS detector with analytical models
Stage	LGS – Standard LGS: 5-axis mechanically eucentric large goniometer stage X=80mm, Y=40mm, Z=5 to 48mm, T= -10˚ to +90˚, R=360˚ GS: 5-axis mechanically eucentric goniometer stage (option) X=20mm, Y=10mm, Z=5 to 48mm, T= -10˚ to +90˚, R=360˚
Vacuum Range for LV Models	10 Pa to 100 Pa
Software	PC with Windows ® 7, Multi touch software features built in Microsoft ® Office Home and Business
Remote Control of SEM	The JSM-IT100 series is capable of both remote live viewing and full remote control via the Web.

Popular Options:

- ChamberScope
- Operation Panel
- Motorized LGS Stage
- Stage Navigation System
- Low Vacuum Secondary Electron Detector
- EDS, EBSD, CL, EBIC…
- 3D Image Software
- In-column Faraday Cup (probe current detector)

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