

Tescan AMBER 2

Ga FIB-SEM for Life Sciences

Tescan AMBER 2 for Life Sciences represents a cutting-edge Ga FIB-SEM solution that offers multifunctional capabilities for the structural analysis of biological samples. It seamlessly combines the high-precision milling capabilities of a Ga FIB with a BrightBeam™ UHR SEM for sub-surface exploration of a diverse range of biological specimens, both at ambient and cryogenic temperatures. With its exceptional design, Tescan AMBER 2 effectively caters to the diverse and challenging requirements of research centers and institutes.

Tescan AMBER 2 offers a variety of features that make it an excellent option for cryo and room temperature structural analysis. Its best-in-class Ga FIB Orage™ 2 technology enables precise on-grid cryo-TEM lamellae preparation without any curtaining or other artifacts. The new Tescan cryo-nanomanipulator, with its smooth and precise movement and intuitive probe tip navigation, makes cryo lift-out effortless. Additionally, Tescan AMBER 2 provides nanometer-scale resolution for volume reconstructions of samples using the Tescan 3D tomography software package.

To ensure user safety and efficient exploration of regions of interest, Tescan AMBER 2 incorporates a unique 3D chamber model that provides collision protection. This invaluable feature enables swift and secure navigation within the system. Furthermore, the modular Tescan Essence™ software enhances the overall operational experience by offering a wide array of pre-designed, guided, and customizable workflow templates, streamlining processes for all laboratory personnel.

Tescan AMBER 2 is an ideal solution for various applications, ranging from nanoscale imaging to routine cross-sectioning, 3D FIB-SEM tomography, and cryo-TEM lamella preparation from cellular plunge-frozen or bulk high-pressure frozen specimens. Whether you are a researcher, scientist, or core facility manager, Tescan AMBER 2 is the perfect choice to meet your specific needs.



Tescan AMBER 2

Ga FIB-SEM for Life Sciences

All-purpose Ga FIB-SEM for cryo
and room temperature structural analysis

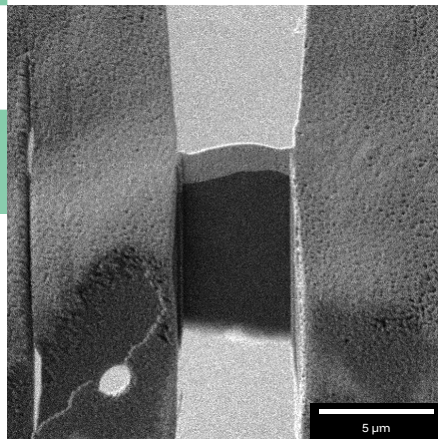


Fig. 1: On-grid cryo TEM lamella prepared from plunge-frozen biological sample

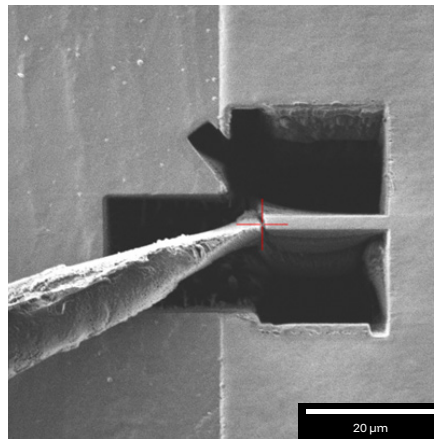


Fig. 2: Cryo TEM lamella lift-out prepared from high pressure-frozen biological sample

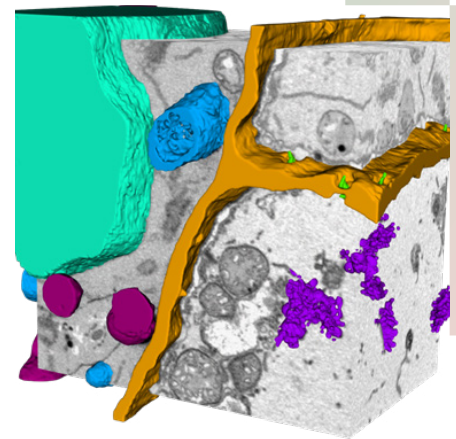


Fig. 3: UHR 3D FIB-SEM tomography: resin-embedded Arabidopsis thaliana root. Voxel size 5 nm. Sample courtesy: Dr. Ilya Belevich, University of Helsinki.

Key Benefits:

- **Perform your experiments at ambient or cryogenic temperatures.** The multi-functional design of Tescan AMBER 2 matches the diverse and challenging requirements of research centers and institutes.
- **Prepare precise on-grid cryo-TEM lamellae routinely** without curtaining or other artifacts, thanks to best-in-class GaFIB Orage™ 2 ion column.
- **Perform cryo lift-out easily** using the new Tescan cryo-nanomanipulator with its smooth, precise movement and intuitive probe tip navigation.
- **Obtain nanometer-scale resolution volume reconstruction** of your samples using the Tescan 3D tomography package.
- **Increase your cryo-microscopy productivity** with Leica Microsystems GmbH and Quorum Technologies Ltd cryo systems that are fully integrated into the Tescan hardware and software for convenient and safe microscope operation under cryogenic conditions.
- **Navigate to regions of interest quickly and safely** with our unique 3D chamber model for collision protection.
- **Jumpstart your FIB-SEM work** by selecting from a variety of ready-to-use, guided and customizable workflow templates included in Tescan Essence™ software that allow new users to be productive quickly while letting experts customize the microscope controls.

Key Applications:

- Imaging from overview to the nanoscale — and everything in between.
- Cryo FIB-SEM workflows include built-in templates for optimized cryo-TEM lamella preparation of cellular plunge-frozen or bulk high-pressure frozen specimens.
- Routine cross-sectioning and 3D FIB-SEM tomography expand the capabilities of FIB-SEM to a broad range of applications.