Teneo VolumeScope with SEM

Teneo VolumeScope is a Scanning Electron Microscope (SEM) with an inbuild ultramicrotome for serial block-face scanning electron microscopy (SBF SEM). The Thermo Scientific VolumeScope with Multi-Energy Deconvolution (MED) is a state-of-the-art SBF SEM that combines physical and optical slicing technologies with 10 nm isotropic 3D datasets of resin embedded biological samples. This field-leading 10 nm isotropic resolution is possible through the use of MED-SEM technology, allowing optical sectioning to derive several virtual subsurface layers within each physical slice, thus dramatically improving resolution, particularly in the axial direction. Acquired volumes are typically larger than those collected with Focused Ion Beam SEM (FIB SEM) technology.

The instrument can also be utilized as a stand-alone **SEM** and can be used to visualize the surface topology of samples. The microscope can be used in both high- and low-vacuum mode. In low-vaccum mode the sample may contain water and no metal coating.

Specification
Filament: Field emission gun (FEG)
Beam current range: 1 pA to 400 nA
Landing energy range: 20 eV – 30 keV*
Accelerating voltage range: 350 eV – 30 keV
Imaging modes: High Vacuum, Low Vacuum (10-50 Pa)
Magnifications: up to 300.000 x
Maps™ software integration for wide-field tissue mapping (Tiling and Stitching).
On-stage compact microtome with easy installation for in-situ sectioning.
Optimal imaging resolution at low voltages (1.0 nm at 1 keV using the immersion lens) for 2D SEM images.
SBF SEM datasets capable of multiple ROI collection during the same job acquisition with 10-nm isotropic resolution.

Detectors:
Everhart-Thornley SE detector (ETD)
Trinity (T1 and T2) segmented lower in-lens detector
VS-DBS: LoVac lens-mounted BSED
Low-vacuum SE detector
STEM 3+ – Retractable segmented detector
IR-CCD