

VIDEKO

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ELECTRON MICROSCOPY

SEM

Scanning Electron Microscopes

TM4000 Series

Table Top Scanning Electron Microscope

The TM4000 is a compact high performance Tabletop SEM with intuitive user interface, equipped with a BSE detector. The TM4000Plus offers additionally an UVD-SE-detector, which operates in high vacuum mode as well as in low vacuum mode.

Items	Description
Magnification	×10 to ×100,000 (photo)
Observation condition	5 kV / 10kV /15 kV
Signal select	BSE/SE/Mix
Observation mode	BSE:Conductor/Standard/Charge-up Reduction SE:Standard/Charge-up Reduction Mix:Standard/Charge-up Reduction
Maximum sample size	d=80mm, h=50mm
Additional Functions	Camera Navi, Manual Stage, UVD Det.,3D Map, Tilt-Rot. Stage, Cool-Stage, Thumbnails, Report Creator

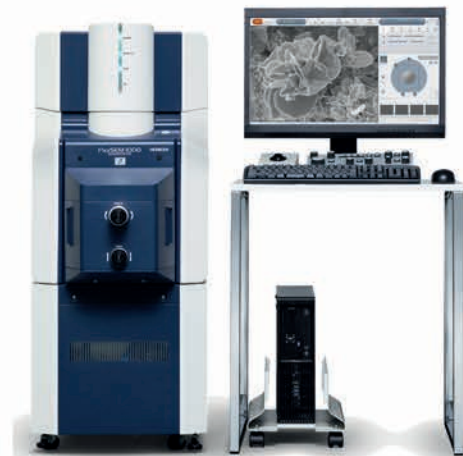


FlexSEM 1000

Compact Scanning Electron Microscope

The FlexSEM1000 VP-SEM combines innovative technological features with an intuitive Interface to offer adaptability and flexibility in a powerful, automated, lab-friendly package. Cutting edge technology and modular design provide outstanding imaging performance even in variable pressure environments. A feature, previously only available in full-sized SEMs, which is already available with the FlexSEM1000.

Items	Description
Resolution	4,0 nm at 20 kV (SE: high vacuum mode) 15,0 nm at 1 kV (SE: high vacuum mode) 5,0 nm at 20 kV (BSE: low vacuum mode)
Magnification	6x to 300,000x (on photo) 16x to 800,000x (on display)
Accelerating voltage	0,3 to 20 kV
Variable Pressure Range	6 to 100 Pa
Detectors	Everhart Thornley secondary electron detector High sensitivity semiconductor BSE detector
Optional accessories	Ultra variable pressure SE-detector (UVD-SE), Energy disperse x-ray spectrometer (EDX).....



SU3500

Scanning Electron Microscope

The SU3500 Scanning Electron Microscope features innovative electron optics and signal detection systems to provide unparalleled imaging and analytical performance. Designed with intuitive logic, the new user-friendly GUI provides comprehensive image observation and display functions. The SU3500 is engineered for a wide range of applications including biological specimens and advanced materials.

Items	Description
Resolution SE	3,0 nm at 30 kV (high vacuum mode) 7,0 nm at 3 kV (high vacuum mode) 15,0 nm at 1kV (high vacuum mode)
Resolution BSE	4,0 nm at 30 kV (variable pressure mode) 10,0 nm at 5 kV (high vacuum mode)
Magnification	5x to 300,000x (on photo) 7x to 800,000x (on display)
Accelerating voltage	0,3 to 30 kV
Variable Pressure Range	6 to 650 Pa
Maximum sample size	200mm in a diameter
Detectors	Everhart Thornley secondary electron detector High sensitivity semiconductor BSE detector



FE-SEM

Field Emission Scanning Electron Microscopes

SU5000

Schottky Field Emission Scanning Electron Microscope

The SU5000 FE-SEM has forever changed SEM operations. Ground-breaking computer-assisted technology from Hitachi, referred to as the EM Wizard, offers a new level of SEM operation and control. Expert or novice, the result is now the same: Highest quality nano-scale images at everyone's fingertips.

Items	Description
Spatial Resolution	1,2 nm at 30 kV
	3,0 nm at 1 kV
	2,0 nm at 1 kV (with deceleration mode)
	3,0 nm at 15 kV (variable pressure mode)
Magnification	10x to 600,000x (on photo)
	18x to 1,000,000x (on display)
Accelerating voltage	0,5 to 30 kV
Variable Pressure Range	10 to 300 Pa
Specimen size	up to 200mm ϕ , max. 80mm height
Detector	Everhart Thornley secondary electron detector
Emitter	ZrO / W Schottky emitter



Regulus Series

Ultra-high Resolution Scanning Electron Microscope

The Regulus series employs a novel cold-field-emission (CFE) gun optimized for high-resolution imaging at low accelerating voltages. This CFE gun makes it possible to magnify high-resolution images up to 2 million times*.

Items	Description
Series Lineup	Entry Model Regulus 8100
SE image Resolution	0,8 nm at 15 kV
	0,9 nm at 1 kV
Magnification	20x 2,000,000x
Accelerating voltage	0,5 to 30 kV
Detectors	secondary electron detector
	backscattered electron detector
	Energy dispersive x-ray detector (option)
Series Lineup	Regulus 8220, 8230, 8240
SE image Resolution	0,7 nm at 15 kV
	1,1 nm at 1 kV
Magnification	20x 1,000,000x
Accelerating voltage	0,5 to 30 kV
Detectors	secondary electron detector
	backscattered electron detector
	optional: EDX, BSED, BF-STEM, DF-STEM, EBIC/EBAC, EBSD, Crvo System

* (Only in Regulus 8220/8230/8240)



SU9000

Ultra-high Resolution Scanning Electron Microscope

The Cold Field Emission source is ideal for high-resolution imaging with a small source size and energy spread. Innovative CFE Gun technology contributes the ultimate FE-SEM with superior beam brightness and stability, affording high-resolution imaging and high-quality elemental analysis. Unique object lens design has a capability of EELS and diffraction as well.

Items	Description
SE image Resolution	0,4 nm at 30 kV
	1,2 nm at 1 kV
STEM image Resolution	0,34 nm at 30 kV
Magnification	80x to 10,000x (on photo LM mode)
	800x to 3,000,000x (on photo HM mode)
	220x to 25,000x (on display LM mode)
	2,000x to 8,000,000x (on display HM mode)
Accelerating voltage	0,5 to 30 kV
Variable Pressure Range	10 to 300 Pa
Detectors	secondary electron detector
	Top detector (option)
	BF/DF Duo-STEM detector (option)
	Energy dispersive x-ray detector (option)



TEM/STEM

Transmission Electron Microscopes / Scanning Transmission Electron M.

HT7800 Series

Transmission Electron Microscope

The HT7800 RuliTEM is a 120 kV transmission electron microscope (TEM) with multiple lens configurations, including a standard lens for unsurpassed high contrast and a class-leading HR lens for high resolution. This breakthrough in advanced innovative design allows highly efficient workflows and many specialized applications. It represents the cutting-edge solution for modern TEM analyses.

Items	Description	
	HT7800	HT7830
Resolution (Lattice)	0,20 nm (off-axis, 100 kV)	0,19 nm (on-axis, 120 kV)
Magnification	200×~200,000× (HC mode) 4,000~600,000× (HR Mode) non rotating zoom system	1,000×~300,000× (HC mode) 4,000~600,000× (HR Mode) non rotating zoom system
Accelerating voltage	20 - 120 kV (100V/step variable)	
Standard Features	Auto Focus, Microtrace, Autodrive, Autophoto, Live FFT display, Measurement function, image navigation function,...	
Optional Accessories	STEM, Cold finger, EDX, LaB6 filament, Beam stopper, TEM Mapping,...	



H-9500

Transmission Electron Microscope

The H-9500 is a 100-300 kV TEM with LaB6 electron gun. This is a user-friendly workhorse for atomic-resolution TEM imaging and routine structural characterization. The excellent imaging capability also makes the H-9500 a platform for in-situ TEM use.

Items	Description
Resolution	0,102 nm (Lattice) 0,18 nm (point to point)
Objective lens	Spherical aberration factor Cs (mm) 0,7 Chromatic aberration factor Cc (mm) 1,4 Focal length Fo (mm) 2,6
Magnification	1,000×~1,500,000× (TEM Zoom) 200~500× (LM Mode)
Accelerating voltage	100 - 300 kV
Emitter	LaB6 cathode
Minimum probe size (nm ϕ)	1.0~10



HF-3300

Field Emission Transmission Electron Microscope

The HF-3300 is a 100-300 kV TEM/STEM/SEM powered by Hitachi's state-of-the-art cold field emission technology for high-brightness and high-energy resolution. Double bi-prism electron holography, spatially resolved EELS and high precision parallel nanobeam electron diffraction open a new avenue for efficient and high precision material analysis.

The HF-3300 offers a wide range of optional features like a user-friendly Windows-based TEM/STEM computer control or a FIB-compatible specimen holder.

Items	Description
Resolution	0,10 nm Lattice 0,19 nm Point-to-point 0,13 nm Information Limit
Magnification	200x to 500x (on photo LM mode) 2,000x to 1,500,000x (on photo HM mode)
Accelerating voltage	300 kV, 200 kV (optional), 100 kV (optional)
Electron Source	W (310) cold field emission electron source
Optional	STEM unit, EDX, EELS, FIB, ...

HD-2700

Spherical Aberration Corrected STEM/SEM

The HD-2700 is a 80-200 kV field emission gun scanning transmission electron microscope (STEM) with secondary electron (SE) imaging capability. Bulk and surface structures of specimen can be imaged simultaneously.

With the option for probe-forming aberration corrector, ultra-high resolution can be achieved for both STEM and SE imaging.

Items	Description
Image Resolution w/o Cs-corrector	0,204 nm guaranteed (at a magnification of x 4,000,000)
Image Resolution w/ Cs-corrector	0,144 nm guaranteed (at a magnification of x 7,000,000) 0,136 nm guaranteed (HAADF image) 0,105 nm guaranteed (by FFT at a magnification of x 7,000,000)
Magnification	100x to 10,000,000x
Accelerating voltage	200 kV, 120 kV (optional)
Electron Source	Schottky emitter, cold field emitter (option)
Imaging Signal	Bright field STEM, Dark field STEM, Secondary electron image, electron diffraction (option), x-ray analysis (option), EELS analysis and mapping (option)

FIB

Focused Ion Beam Microscopes

NX2000

Focused Ion Electron Beam & Triple Beam System

FIB-SEM systems have become an indispensable tool for characterization and analysis of the latest technologies and high performance nano-scale materials. An ever-increasing demand for ultrathin TEM lamellas without artifacts during FIB processing require the best in ion and electron optics technologies.

Items	Description
FIB	
Resolution (SIM)	4 nm @ 30kV, 60 nm @ 2kV
Acceleration voltage	0.5 kV - 30 kV
Beam current	0.05 pA - 100 nA
FE-SEM	
Resolution	2.8 nm @ 5kV, 3.5 nm @ 1kV
Acceleration voltage	0.5 kV - 30 kV
Electron source	Cold cathode field emission source
Standard detector	Upper/Lower SED & BSED



NB5000

Focused Ion & Electron Beam System nanoDUE'T

The dual-beam FIB-SEM integrates a high-performance 40kV FIB column and an ultra-high-resolution Schottky field-emission SEM column. By using dedicated fabrication template patterns for automatic lift-out, fabrication processes from fiducial marking to specimen lift-out can be automated.

Items	Description
FIB	
Accelerating voltage	1 - 40 kV
Beam current	50 nA or more @40 kV (CP)
SIM resolution	5 nm @40 kV (CP)
Magnification	x60 - x250,000
Ion source	Ga Liquid Metal Ion Source
SEM	
Accelerating voltage	0.5 - 30 kV
SEM resolution	1.0 nm @15 kV(CP)
Magnification	x250 - x800,000 (HM Mode) x70 - x2,000 (LM Mode)
Electron source	ZrO/W Schottky emission



NX9000

Real-time 3D analytical FIB-SEM

The dual-beam FIB-SEM integrates a high-performance 40kV FIB column and an ultra-high-resolution Schottky field-emission SEM column. By using dedicated fabrication template patterns for automatic lift-out, fabrication processes from fiducial marking to specimen lift-out can be automated.

Items	Description
FIB	
Accelerating voltage	0.5 - 30 kV
Beam current	50 nA or more @40 kV (CP)
SIM resolution	4 nm @30 kV (CP)
Maximum Probe current	100 nA
Ion source	Ga Liquid Metal Ion Source
SEM	
Accelerating voltage	0.1 - 30 kV
SEM resolution	2.1 nm @1 kV 1.6 nm @15 kV
Electron source	cold cathode field emission source
Standard Detector	in-column SED / in-column BSED / chamber SED



AFM5100N

General-purpose Small Unit

Hitachi's AFM5100N, features superior ease of use, a wide range of capabilities, and extraordinary performance. The breakthrough hardware option, the self-sensing detector, doesn't require laser and detector alignments and thus can effectively simplify AFM operation. As a full-featured system in support of high-resolution and multifunctional AFM measurements, the AFM5100N offers a wide variety of advanced modes, including the proprietary sampling intelligent scan (SIS), which delivers previously unattainable results for very challenging samples.

Items	Description	
Specifications	AFM5100N	Optional Accessories
Manual Stage	XY ± 2.5 mm	Impact Stage
Sample Size	35mm (diameter) Thickness: 10mm	2inch Adjustment Block 50.08mm \times 50.08mm \times 20mm
Scan Range	20 μ m \times 20 μ m \times 1.5 μ m 100 μ m \times 100 μ m \times 15 μ m 150 μ m \times 150 μ m \times 5 μ m	Closed Loop Scanner 110 μ m \times 110 μ m \times 6 μ m
Detection	Self-Detection, Optical Lever	



HITACHI
Inspire the Next

AFM5500M

Scanning Probe Microscope

The AFM5500M is a SPM platform equipped with a fully addressable 4-inch stage, optimized for medium-sized samples. It affords exceptional levels of ease of use, automation, and accuracy, as well as correlation for AFM/SEM investigations.

Items	Description
Stage	Automated, fully addressable 100 mm (4 inch) stage Travel range: XY ± 50 mm (2 inch), Z ≥ 21 mm Minimum step size: XY 2 μ m, Z 0.04 μ m
Sample Size	Diameter: 100 mm (4 inch) Thickness: 20 mm
Scan Range	200 μ m \times 200 μ m \times 15 μ m (XY: Closed loop control, Z: Displacement sensor)
Detection	Optical lever (Low-coherence light)
Top-viewOptical Microscope	Zoom magnification: x1 ~ x7 Monitor magnification: x465 ~ x3255 (27 inch monitor)



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AFM5000II

Probe Station / Real Tunnel

Hitachi AFM5000II includes the control system and software package to allow a wealth of advanced imaging and data analysis. Its superb function RealTune enables the automatic and self-optimizing data acquisition for easier, faster, and more consistent collection of high-quality AFM images regardless of user skill level. It also provides a wide range of uncommon features such as Q control, tip calibration, and 3D overlay for enhanced measurements and data processing.

Items	Description
OS	Windows®7
Compatible Units	AFM5100N, AFM5300E
RealTuneII	Automatic tuning of amplitude, contact force, scan speed, and feedback gains (Various tuning modes including Auto, Fast, Soft, Rough, Flat, and Point)
Various Functions	Operating instructions; Tab structure (Measurement/Analysis); Movable scopes/ Measurement area tracking; Batch processing; and Tip calibration
Operating Voltage	XY (± 200 V/18bit) Z (± 200 V/26bit)

AFM5300E

Environment Control Unit

The Hitachi research-grade AFM5300E offers significantly improved sensitivity, accuracy, and resolution of electromagnetic property measurements operated under high-vacuum conditions. Furthermore, it establishes a benchmark for comprehensive environmental control and is the only tool on the market affording AFM imaging in air/liquid/vacuum, a broad temperature range (-120 °C to 800 °C), magnetic field or humidity controls, as well as correlated AFM/SEM/ion milling investigations.

Items	Description
Manual Stage	XY ± 2.5 mm
Sample Size	25mm (diameter) Thickness: 10mm
Scan range	20 μ m \times 20 μ m \times 1.5 μ m
Detection	Optical Lever (Low-coherence light)
Optical Microscope	Zoom Microscope (Lens magnification: x7) Metallurgical Microscope (Lens magnification: x5, x20, x50)

SAMPLE PREPARATION

Microanalysis sample preparation systems

MC1000

Ion Sputter

- Minimized specimen damage through adoption of the magnetron type electrode.
- LCD touch panel makes it easy to set the processing conditions.
- Thick or large specimens can be processed (Option).
- Recipe functions to store commonly used processing conditions.

Item	Description	
Discharge	Type	Diode discharge magnetron type (electric field perpendicular to magnetic field)
	Electrode form	Opposed parallel disk (magnet embedded)
	Voltage	0.4 kV DC max. (variable through phase control)
	Current	40 mA DC max.
Coating rate (max.) Pressure : 7 Pa Discharge current : 40 mA Distance between target and specimen surface : 20 mm	Pt target (option)	15 nm/min
	Pt-Pd target (option)	20 nm/min
	Au target (option)	35 nm/min
	Au-Pd target (option)	25 nm/min
Specimen	Max. diameter	Φ60 mm
	Max. height	20 mm



IM4000 Plus

Ion Milling System

- Faster milling with improved ion optics (> 500 μm/h at 6 kV)
- Intermittent milling process for heat dissipation when handling thermally sensitive materials
- Improved cryo operation with precise temperature control (cooling model)
- Higher precision of mask position alignment for site specific cross-section milling



IM5000 ArBlade

Ion Milling System

The most advanced broad ion beam system for producing exceptionally high-quality cross-section or flat-milling samples for electron microscopy.

The ArBlade 5000 is equipped with a fast-milling Ar ion gun with a milling rate twice as high for cutting-edge performance, thus dramatically reducing the processing time for cross-section preparation.

The all new ion-milling system is equipped with both cross-section milling and flat milling modes for the most complex application needs. Equipped with multiple holders, the ArBlade 5000 system accommodates a wide range of applications.



ZONESEM & ZONETEM

Sample Cleaner

The ZONE cleaner is a powerful and easy tool for removing hydrocarbon contamination of electron microscopy samples. The device is available in two models: the ZONESEM and the ZONETEM.

ZONESEM: The sample holder stage of the ZONESEM was designed for Hitachi Type I and Type II carriers. It provides adjustable height capabilities and can effectively clean surfaces up to 70 mm in diameter, and optional holders are available.

ZONETEM: It provides optimized cleaning of TEM grid specimens via simultaneous cleaning and storage of up to three TEM holders. The ZONETEM is designed specifically for Hitachi specimen holders for TEM, STEM, FIB, and in-lens SEM systems, and it serves as an excellent desiccator to prevent holder out-gassing.



VIDEKO GmbH

is your competent Austrian partner with the core competencies Vacuum Technology and Electron Microscopy. The Supply Chain, which has been established over the last few years, comprises the technology-leading manufacturers in the respective sectors from the UK, Germany, USA and Japan.

The product range comprises the trade with electron microscopes, vacuum pumps and their accessories such as vacuum gauges and connecting parts as well as technical service. The customer base extends from university laboratories to industrial quality control to complex industrial processes.

Our experienced staff offers you expert consulting and is glad to help you. It is our target to offer you innovative and high-quality products in the coming years, which meet the frequently changing market requirements. We hope that in a partnership with you, we can further expand our success and our growth.

Yours sincerely,



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