



OPTO-EDU A63.7003 Tungsten Filament Scanning Electron Microscope SE BSE 360000x 4nm@20KV

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: CNOEC, OPTO-EDU
- Certification: CE, Rohs
- Model Number: A63.7003
- Minimum Order Quantity: 1 pc
- Price: FOB \$1~1000, Depend on Order Quantity
- Packaging Details: Carton Packing, For Export Transportation
- Delivery Time: 5~20 Days
- Payment Terms: T/T, West Union, Paypal
- Supply Ability: 5000 pcs/ Month

OPTO-EDU



Product Specification

- Resolution: 4nm@20KV
- Magnification: 360000x
- Electron Gun: Tungsten
- Voltage: 3-20KV
- Detector: BSE+SE
- Navigation CCD: CCD+Cabin Camera

for more products please visit us on cnoec.com

Product Description

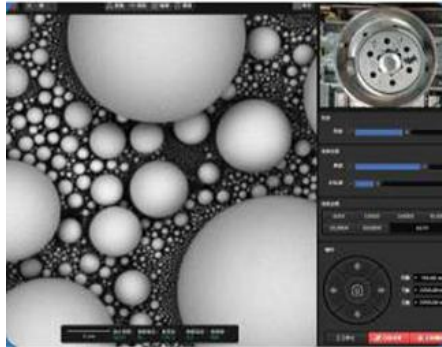
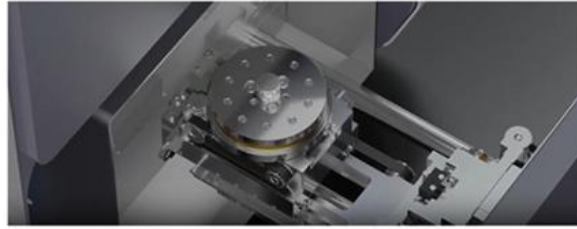
Magnification 360000x, Resolution 4nm@20KV(SE) With Detector SE+BSE+CCD, Optional EDS
Standard X/Y Motorized Working Stage, Optional 3 Axis Stage XYZ, XYT, 5 Axis Stage XYZRT
Built-in Condenser No Need Manual Adjust Aperture (LaB6 Optional)
High Vacuum System With Mechanical Rotary Pump To Get Vacuum In 30s
One Key Auto Focus, Auto Brightness & Contrast Adjust, No Need Shock Absorbing Table



A63.7003

Tungsten Filament Scanning Electron Microscope, SE+BSE, 360000x, 4nm@20KV





A63.7003 Desktop Scanning Electron Microscopes (SEM) incorporate numerous innovative technologies, offering not only excellent imaging performance but also portability, catering to a wide range of application needs. Both domestically and internationally, the ZEM series, with its high-end positioning and diverse models, has achieved advanced standards in imaging clarity, user-friendliness, and system integration.

A63.7003 is renowned for its high level of integration and flexible configuration options. The user interface is simple, easy to learn, and operate, allowing even non-expert users to quickly become proficient. The accompanying software supports the entire workflow, from sample preparation, parameter adjustment, to image analysis, providing an integrated and efficient solution. **A63.7003** has demonstrated strong analytical capabilities across multiple fields such as new materials, new energy, biomedicine, and semiconductors, assisting researchers in exploring the mysteries of the microscopic world. Due to its excellent cost-performance ratio, the ZEM series has become a preferred choice for many universities, research institutions, and enterprises seeking a desktop scanning electron microscope.

The A63.7003 benchtop SEM utilizes a wider range of accelerating voltages, 1Kvsteps, and a maximum magnification of 360,000x with a resolution of up to 5nm. The tabletop deceleration mode allows real-time observation of low-conductivity products without the need for gold spraying. The extra-large sample compartment can be integrated with a wide range of in-situ expansion platforms to meet different experimental and inspection needs.

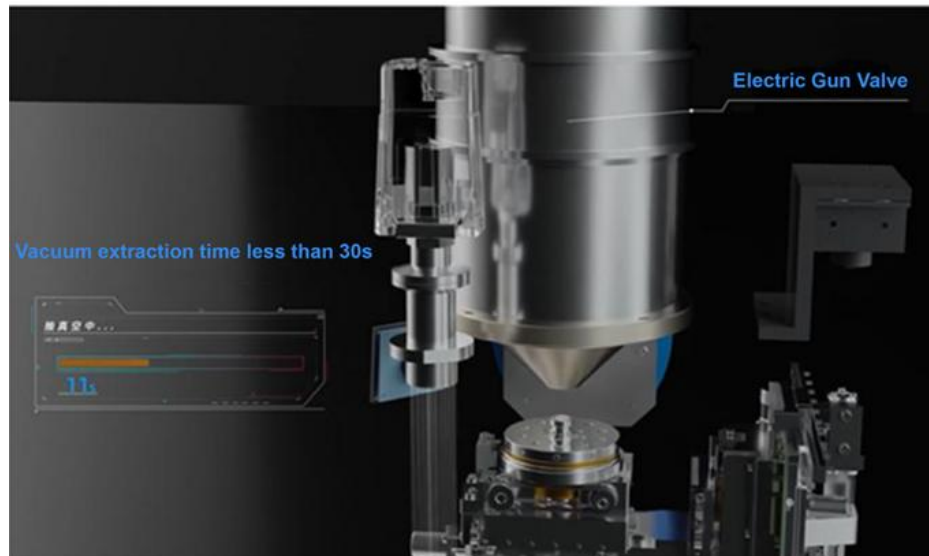
Working Conditions:

Environmental requirements: small size, the whole machine can be placed on an ordinary laboratory table, no need to be equipped with an additional shock absorbing table.

1. Power supply 220V, 50Hz, 1KW
2. Temperature: Operating ambient temperature: 15°C-30°C
3. Humidity: <80%RH

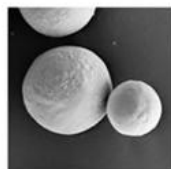


- ▲ Vacuum Separation Technology: Utilizes a unique vacuum design where the electron gun and sample chamber have separate vacuums, allowing for sample change in less than 1 minute.
- ▲ Extra-Large Sample Chamber: Provides a larger sample storage space for convenient user operation.
- ▲ Ultra-High Resolution: Achieves a maximum magnification of 360,000 times with a resolution of 4nm at 20kV.
- ▲ Standard Equipped Deceleration Mode: Allows for the observation of weakly conductive samples without gold sputtering.
- ▲ In-Chamber Camera: The sample chamber is equipped with a high-definition camera for real-time monitoring of sample changes during in-situ experiments.

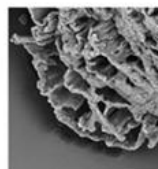


A63.7003 Specification

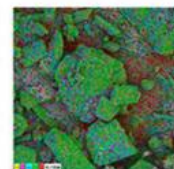
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SE



BSE



EDS

Main Specification:

1. Acceleration voltage: 3-20kV, continuously adjustable.
2. Electron gun type: pre-aligned tungsten filament, life time 100 hours, easy to replace by user, highly integrated two-stage gun lens, no need to manually adjust the diaphragm of the objective lens.
3. Magnification $\geq 360000\times$
4. Resolution: $\leq 4\text{nm}@20\text{KV}$
5. Detector: secondary electron detector (SE), quadruple backscatter detector (BSE),
6. Stage: 2 Axis XY motorized stage, moving 60x55mm
7. Maximum sample size: 100*78*68.5mm while XY axes move freely
8. Sample change and high vacuum pumping time $\leq 30\text{s}$.
9. High vacuum system: built-in turbo molecular pump, external mechanical pump, the vacuum in sample chamber $\geq 1\times 10^{-1}\text{Pa}$, fully automatic control;
10. Video mode $\geq 512\times 512$ pixels, no need for small window scanning.
11. Quick scan mode: imaging time $\leq 3\text{s}$, 512x512 pixels.
12. Slow scan mode: imaging time $\leq 40\text{s}$, 2048x2048 pixels.
13. Image File: BMP, TIFF, JPEG, PNG.
14. One-key automatic adjustment of brightness and contrast, auto-focus, large image stitching
15. Navigation function: optical camera navigation and cabin camera.
16. Image measurement function: distance, angle, etc.
17. Including computer & software, mouse control.
18. Optional:
 - Tungsten filament (20pcs/box)
 - EDS
 - 3 Axis Motorized Stage XYZ
 - 3 Axis Motorized Stage XYT
 - 5 Axis Motorized Stage XYZRT
 - Low vacuum (1-100Pa)
 - Deceleration Mode, 1-10KV, can observe non-conductor or poor conductivity samples without gold spraying, only for BSE mode
 - In-Situ stage from original factory, heating, cooling, stretch, etc.
 - Shock-absorbing Platform (recommend for A63.7003)
19. Microscope size 650*370*642mm, mechanical pump size 340*160*140mm



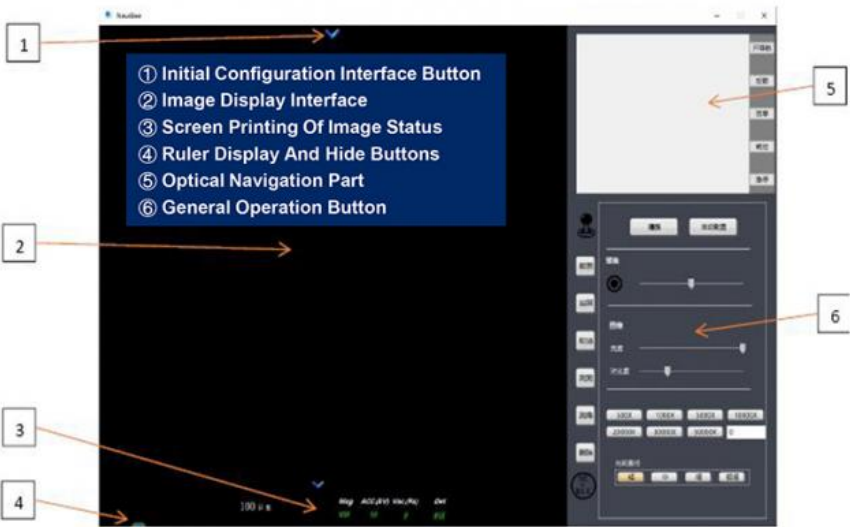
Model	A63.7001	A63.7002	A63.7003	A63.7004	A63.7005
Resolution	10nm@15KV	6nm@18KV	4nm@20KV	3nm@20KV	2.5nm@15KV
Magnification	150000x	200000x	360000x	360000x	1000000x
Electron Gun	Tungsten	Tungsten	Tungsten	LaB6	Schottky FEG
Voltage	5/10/15KV	3-18KV	3-20KV	3-20KV	1-15KV
Detector	BSE+SE	BSE+SE	BSE+SE	BSE+SE	BSE+SE
Navigation CCD	CCD	CCD	CCD+Cabin Camera	CCD+Cabin Camera	CCD+Cabin Camera
Vacuum Time	90s	90s	30s	90s	180s
Vacuum System	Mechanical Pump Molecular Pump	Mechanical Pump Molecular Pump	Mechanical Pump Molecular Pump	Mechanical Pump Molecular Pump Ion Pump	Mechanical Pump Molecular Pump Ion Pump x2
Vacuum	High Vacuum 1x10-1Pa	High Vacuum 1x10-1Pa	High Vacuum 1x10-1Pa	High Vacuum 5x10-4Pa	High Vacuum 5x10-4Pa
Stage	XY Stage, 40x30/40x40mm	XY Stage, 40x30/40x40mm	XY Stage, 60x55mm	XY Stage, 60x55mm	XY Stage, 60x55mm
Stage Precision	-	Position Precise 5um			
Working Distance	5-35mm	5-35mm	5-73.4mm	5-73.4mm	5-73.4mm
Max Specimen	80x42x40mm	80x42x40mm	100x78x68.5mm	100x78x68.5mm	100x78x68.5mm
Optional	Tungsten Filament 20 pcs/box			Lab6 Filament	Field Emission Lamp
	EDS Oxford AZtecOne with XploreCompact 30				
	-	Low Vacuum 1-100Pa		Low Vacuum 1-30Pa	
	-	Z Axis Module	3 Axis Stage, X 60mm, Y 50mm, Z 25mm		
	-	T Axis Module	3 Axis Stage, X 60mm, Y 50mm, T ±20°		
	-	-	5 Axis Stage, X 90mm, Y 50mm, Z 25mm, T ±20°, R 360°		
	-	-	Shock-absorbing Platform, For 3 Axis, 5 Axis Stage		
	-	Deceleration Mode 1-10KV To Watch Non-conduct Samples, Only For BSE			

-	In-Situ Stage From Original Factory, Heating, Cooling, Stretch, etc.
	UPS

A63.7003 Software Description

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► Software Interface



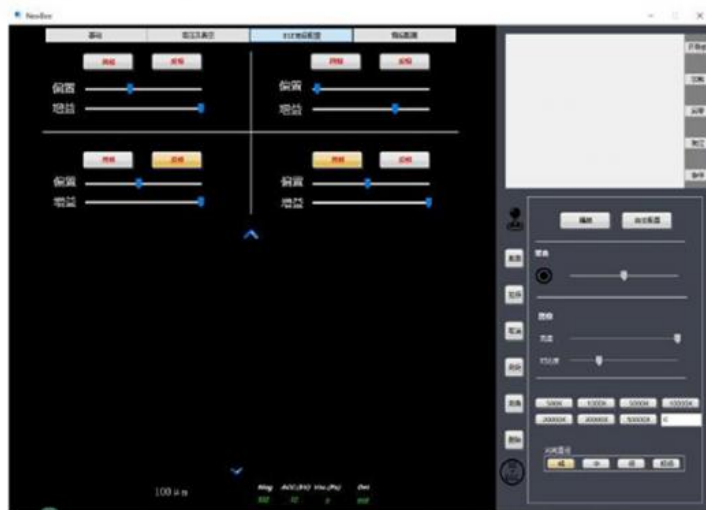
► Stake Out, Evacuate And Turn On High Pressure.



► Image Display Configuration And Adjustment



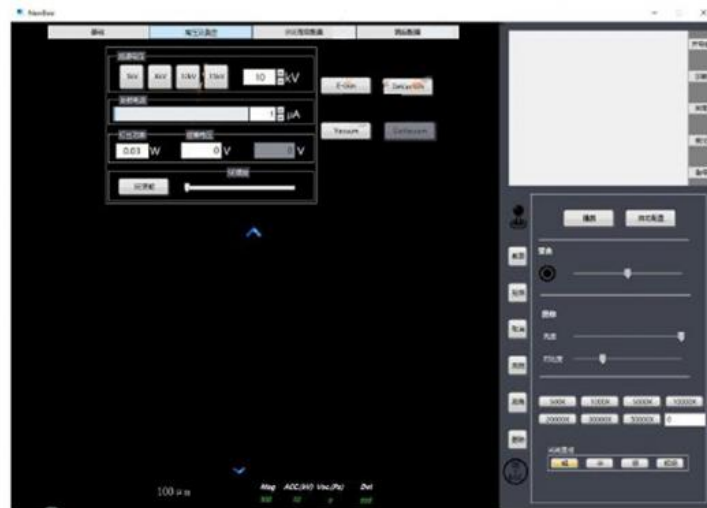
► BSE Advanced Configuration

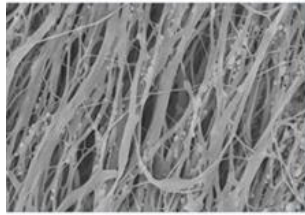


► Lens configuration

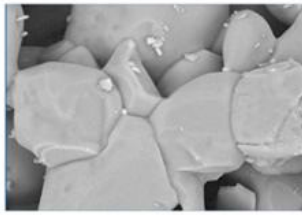


► Turn Off The High Pressure, Vent The Vacuum.

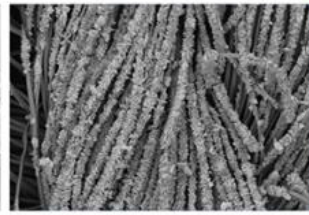




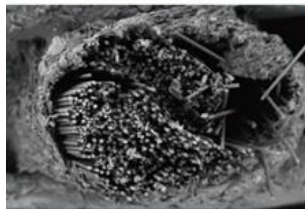
Research And Teaching



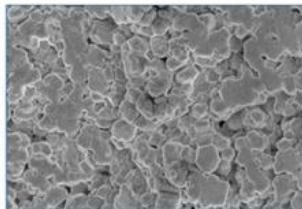
Functional Inorganic Materials



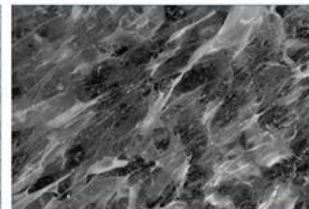
Functional Nanomaterials



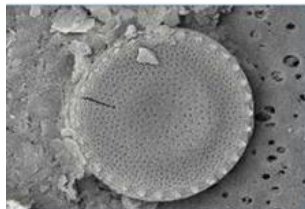
Tubular Nanomaterials



Aluminum Nitride



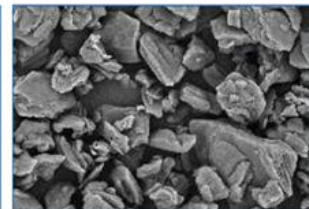
Hydrogel



Diatom



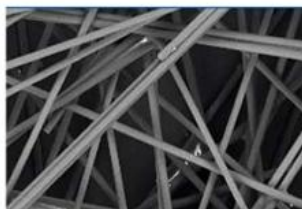
Powdered Medicine Material



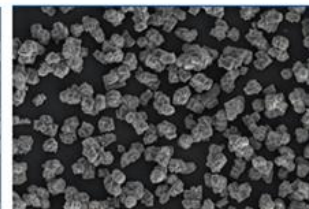
Anode Materials For Lithium Battery



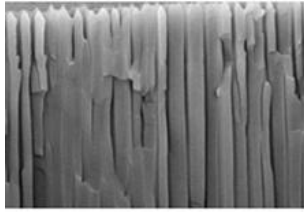
Industrial Monitoring



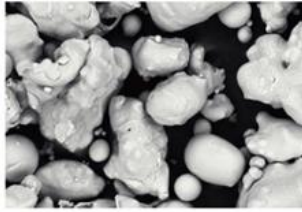
Fiber Testing



Particle Detection



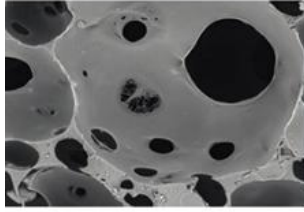
Aluminum Oxide Film Testing



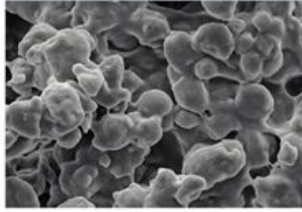
Metal Material



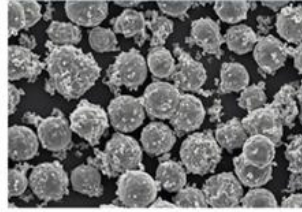
Resistance Detection



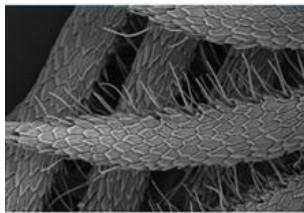
Chemical Material



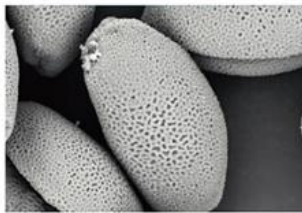
Drug Testing



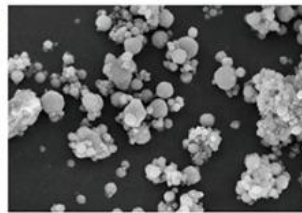
Ternary Lithium Battery



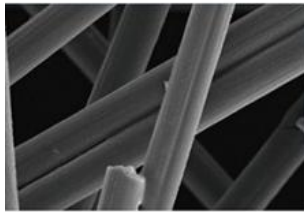
Life Sciences



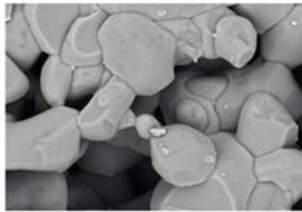
Plant Testing



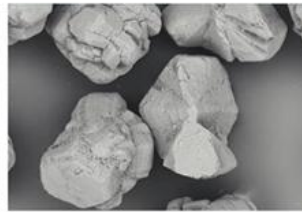
Chemical Testing



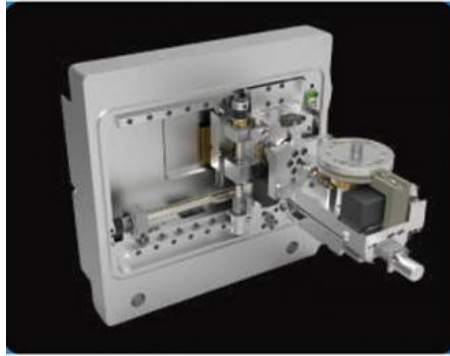
Fiber Testing



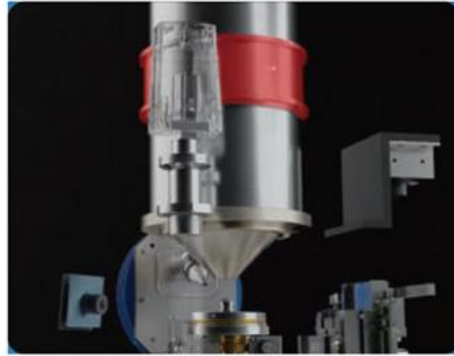
Functional Inorganic Materials



Industrial Inspection



Optional 5-axis Center Sample Stage



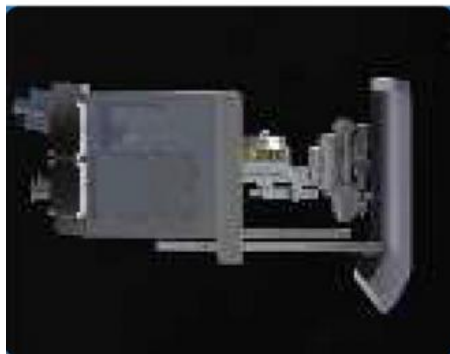
Sample change time 30s



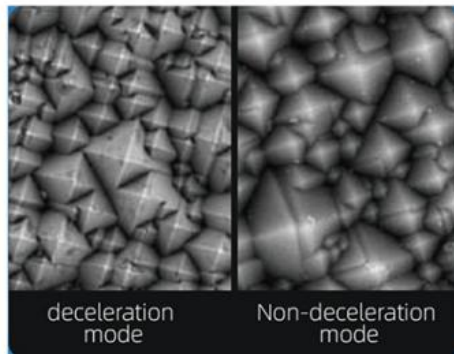
Addition of a camera inside the sample compartment for real-time observation of the sample compartment



The gun head always maintains 5×10^{-10} Pa vacuum, which greatly improves the service life of tungsten filament, and LaB₆ filament is optional



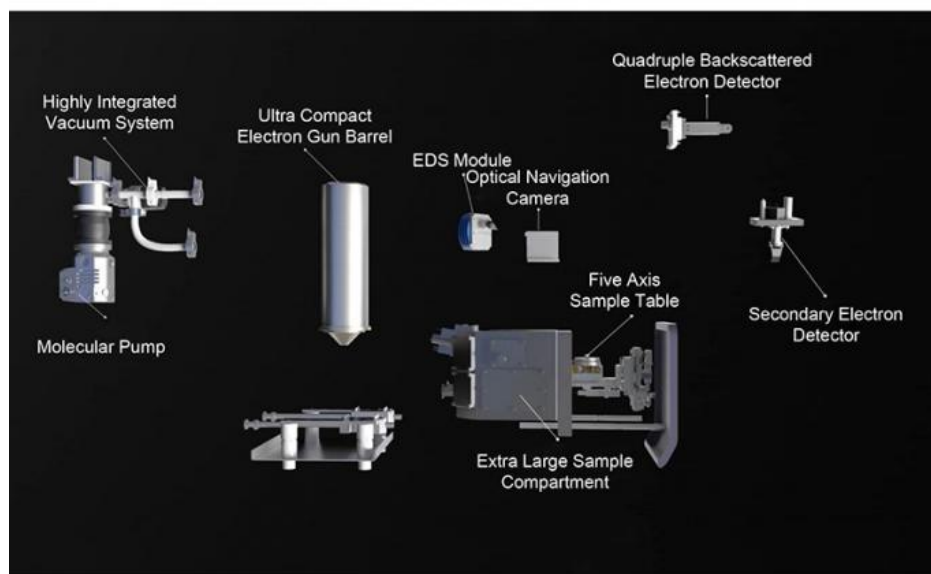
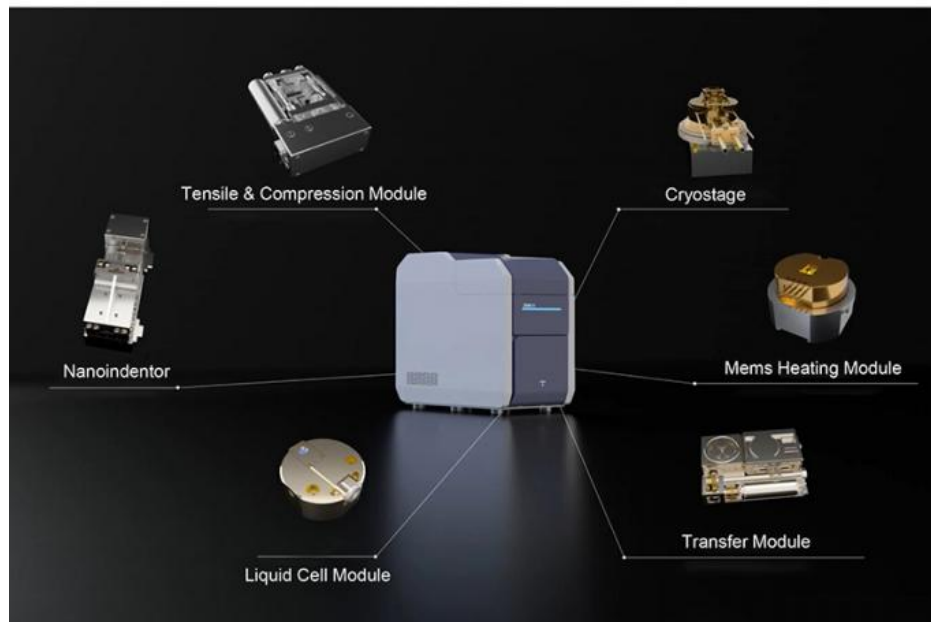
Extra large sample compartment, L185mm*w176mm*H125mm



deceleration mode

Non-deceleration mode

10kv sample Table High Voltage Reduction Option



► In Situ Expansion Product Accessories



Tec Cold Table



Sem Stretching Stage

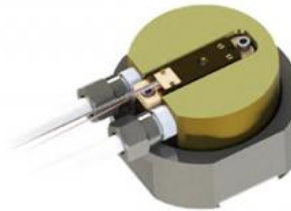


Sem Heated Sample Stage

► Other Customized In-situ Products



SEM Nano
Probe Stage



SEM Atmosphere
Heating system



SEM Nano Force
Measurement System



(High temperature)
in situ SEM cell station

A63.7003 Oxford EDS

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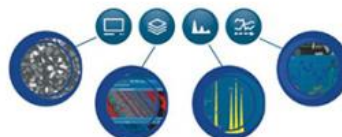
► AZtecOne with XploreCompact 30 for TTM

System Conventional EDS Analysis

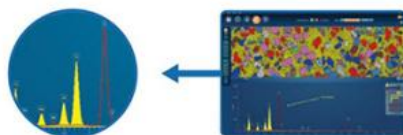
The system provides qualitative and quantitative analysis of different materials, analyzing elements ranging from B(5) to cf (98).in addition to individual point scans of the sample surface, powerful line scans and elemental spectral scans are also available. combined with a customized detector, analysis and reporting can be done in seconds.

Effective Crystal Area	30mm ²	Resolution (Of A Photo)	Mn Ka <129eV @50,000cps
Elemental Detection Range	B (5) to cf (98)	Maximum Input Count Rate	>1,000,000 cps

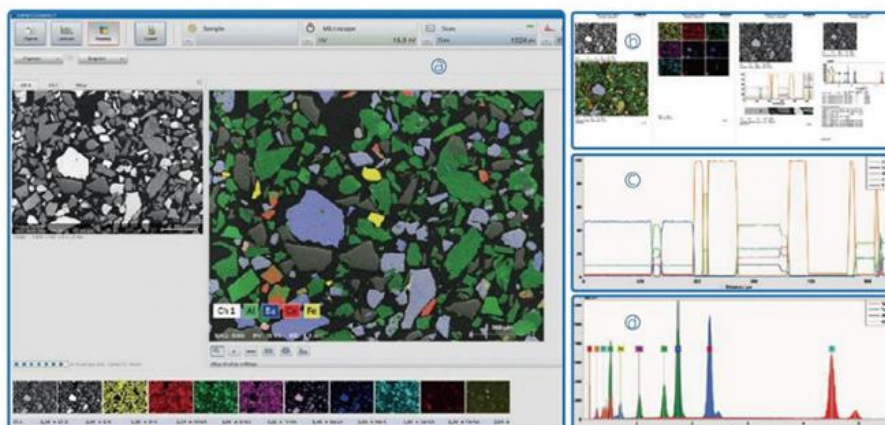
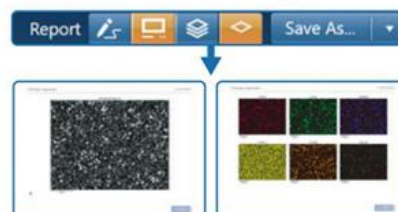
The software interface has simple navigation steps to guide the user through the analysis quickly and easily.



- Real-time display of results saves analysis time
- No need to wait until collection is complete, quantitative results are displayed instantly
- Comparison with previous spectra is possible even during the acquisition process



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