



## OPTO-EDU A63.7230 Scanning Transmission Electron Microscope STEM 50KV 800000x

### Our Product Introduction

#### Basic Information

- Place of Origin: China
- Brand Name: CNOEC, OPTO-EDU
- Certification: CE, Rohs
- Model Number: A63.7230
- 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

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#### Product Specification

- Imaging Mode: BF/DF (Bright Field/Dark Field)
- STEM Mode Landing Voltage: 50KV
- Detector Type: Semiconductor Direct Detector
- Electron Gun: Schottky Type Thermal Field Emission
- Electron Beam Current: 50pA To 100nA
- Sample Stage: X=±4mm, Y=±4mm, Positioning Accuracy 1um

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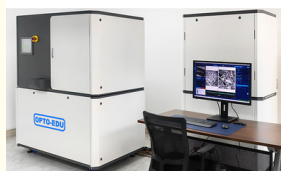


#### More Images

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## Product Description

1x-500x Optical, 500x-800000x STEM, High Resolution 1.0nm@50kV, Support BF/DF  
Brand New Design 5 Samples Loading System, One Set Up Applied To All Samples Easily  
Ultra High-Speed Image Acquisition 100MB/s, Single 24k x 24k Image Captuer In 6.5s  
Scan & Stitch Full FOV Large Image, Independent Operation of Large Field and High-Resolution Imaging  
AI Micro-Particle Imaging Analysis Software Support Ultra Large FOV 100um@25nm, High Efficiency Recognition & Measure



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## A63.7230

### Scanning Transmission Electron Microscope (STEM) 50KV, 800000x



## A63.7230 Features

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### Rapid Automatic Micro-Particle Imaging Analysis System

A63.7230 is a fast, intelligent, fully automated scanning transmission electron microscope (STEM) with complete independent intellectual property rights at 50KV. It meets the application needs in fields such as virus morphology observation, vaccine cell bank safety testing, vaccine research and manufacturing, clinical pathological tissue slice research, and biological research on brain neural connect omics.

Resolution 1.0nm@50kV (1nA)

Single Beam STEM Imaging Speed  
100M pixels/second

10ns/pixel Dwell Time

Fully Automatic 5 Samples Loading  
System

## A63.7230 Core Technology

### ● High Resolution High Brightness Electron Optical System

100M/s ultra high-speed imaging at 50KV. The system has video-level (25fps@2k\*2k) nanoscale analysis capability, allowing for fully automated information acquisition without omissions while maintaining high resolution.

### ● High Sensitivity Direct Electron Detector

All detectors of A63.7230 use independently designed direct electron detectors, which convert electrons directly into electrical signals, achieving a detection efficiency of over 80% and a higher signal-to-noise ratio (SNR).

### ● Rapid Switching Between Large Field and High-Resolution Imaging

Innovative electron optical design allows large field imaging and high-resolution imaging to operate independently, enabling rapid switching, precise particle identification and positioning, and quick high-resolution imaging.

### ● High Speed and High Stability Mechanical Motion Platform

Uses a vibration-free motion platform,  $X=\pm 4\text{mm}$ ,  $Y=\pm 4\text{mm}$ , positioning accuracy 1 $\mu\text{m}$ .



#### ● Ultra High Resolution

Brand new optical system design, resolution 1.0nm@50kV (1nA), capable of obtaining images with both high resolution and large field of view (distortion less than 1‰).

#### ● Ultra High Speed Imaging

High-speed STEM detector, image acquisition speed 100M/S.

#### ● Fully Automatic Sample Loading and Navigation

Equipped with a fully automatic sample loading system (5 samples loaded simultaneously), a brand-new sample loading scheme, and convenient sample information query function, achieving automation in sample management.

#### ● Stable and Reliable

24/7 automatic continuous image acquisition.

## A63.7230 Specification

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### A63.7230 Transmission Scanning Electron Microscope (STEM)

Resolution (1nA beam current, under optimal conditions)	1.0nm@50kV
Imaging Mode	BF/DF (Bright Field/Dark Field)
STEM Mode Landing Voltage	50KV
Detector Type	Semiconductor Direct Detector
Magnification	1X-500X (Low Magnification Optical Imaging) 500X - 800,000X (STEM Images)
Electron Gun	Schottky Type Thermal Field Emission
Electron Beam Current	50pA to 100nA
Sample Stage	$X=\pm 4\text{mm}$ , $Y=\pm 4\text{mm}$ , Positioning Accuracy 1 $\mu\text{m}$
Imaging Flux	Can complete imaging of a 1x1mm <sup>2</sup> area at 4nm pixel within 0.5 hours
Ultra High-Speed Image Acquisition	100MB/s, a single 24k x 24k image takes only 6.5s to capture
Acquisition Method	STEM Bright Field (BF) or Dark Field (DF) Acquisition
High Throughput Electron Microscope Control Software	Equipped with automatic image optimization, intelligent focus tracking, panoramic optical navigation, and large area fully automated acquisition functions
Rapid Switching Between Large Field and High-Resolution Imaging	Innovative electron optical design, independent operation of large field imaging and high-resolution imaging, rapid switching, precise particle identification and positioning, rapid high-resolution imaging
Image Analysis Processing Software AI Server	Ultra-large field imaging, 100 $\mu\text{m}$ @25nm, AI Server high efficiency recognition and measurement

## A63.7230 Details

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### ► Optical System Designed for Fully Automated Micro Particle Detection

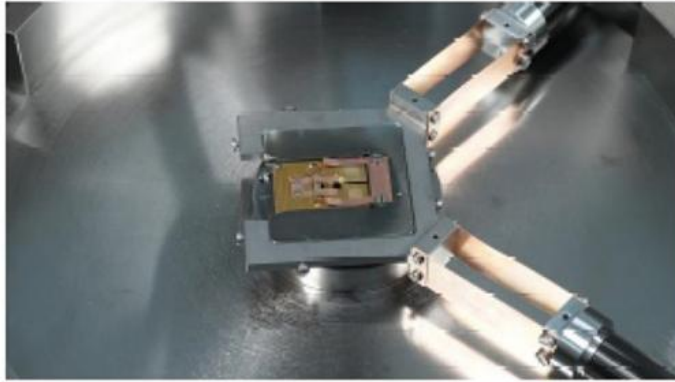
Traditional transmission electron microscopes have a small field of view, which cannot meet the detection and identification needs of a large number of nanoparticles. A63.7230 is designed based on semiconductor industrial-grade electron beam detection equipment concepts, achieving high-throughput nanoparticle detection capabilities.

A63.7230 achieves ultra high-speed imaging through innovative designs such as fast imaging technology, vibration-free sample stage, high-speed electron optical system, and AI technology, with imaging speeds reaching dozens of times that of traditional electron microscopes.



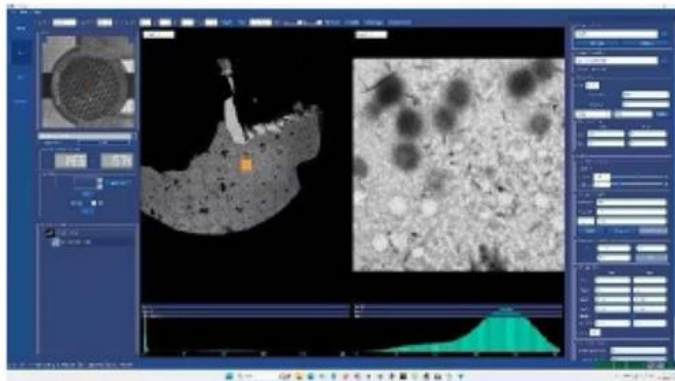
### ► Fully Automated Design

A series of actions such as power-on inspection, navigation positioning, one-click centering, focus adjustment, and shift correction are automated. The real-time focus tracking system is composed of hardware and software. Using precise electronic deflection to achieve accurate positioning of sample images, resulting in high repeatability of results. It not only eliminates the need for extensive effort to adjust and locate sample positions but also utilizes AI intelligence for automatic detection, ultimately achieving unattended continuous operation.



### ► Customizable Software Functions for Different Clients

Leveraging modern artificial intelligence, AI algorithms, etc., to assist experimental personnel in analysis, from front-end sample preparation to automatic full-section imaging and stitching by the electron microscope, generating high-resolution maps, and then to back-end data processing. AI intelligent analysis can be used for automatic detection and classification of particles, providing users with a complete solution.





#### ① Schottky field emitting electron source

Ensure high magnification,  
Maintain high resolution

#### ② 50KV electron gun with its own intellectual property rights

Ensure a wide range of biological samples Pan-application

#### ③ Self-developed high-speed and high-bandwidth electronic detector

High-throughput scanning with low noise  
2X100M/s  
Quantum efficiency > 80%

#### ④ Patented composite electromagnetic pendulum nosepiece system

Unique immersion electromagnetic complex  
Mirror system for the fastest imaging  
Speed and fast switching between large and small fields

#### ⑤ Patented fully automatic sample loading system

Fully automated sample loading reduction  
Less labor operating costs

#### ⑥ Patented sample platform

Easy sample loading, tracking, and storage

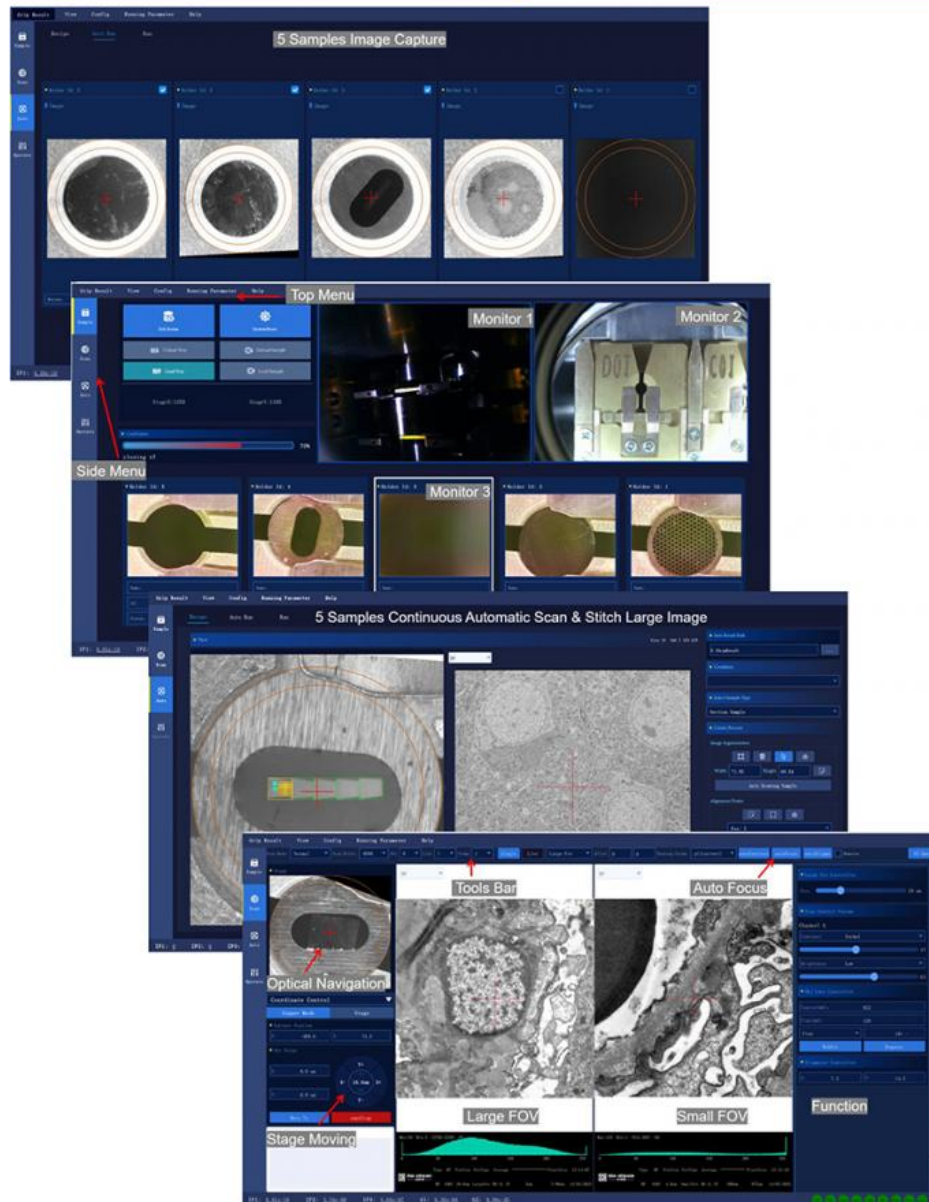
#### ⑦ Patented vibration-free motion platform

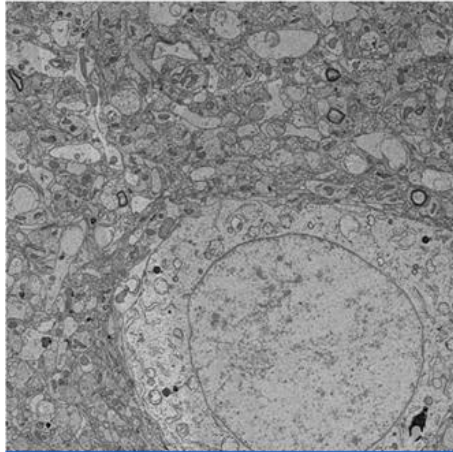
Reduce the noise generated by vibration, mention  
High image resolution

#### ⑧ Real-time image processing server

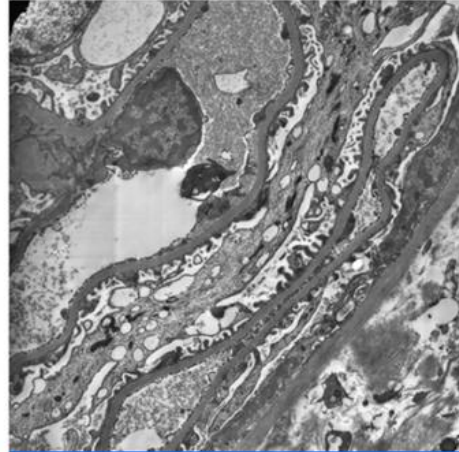
7\*24 hours uninterrupted image acquisition  
and automatic image processing



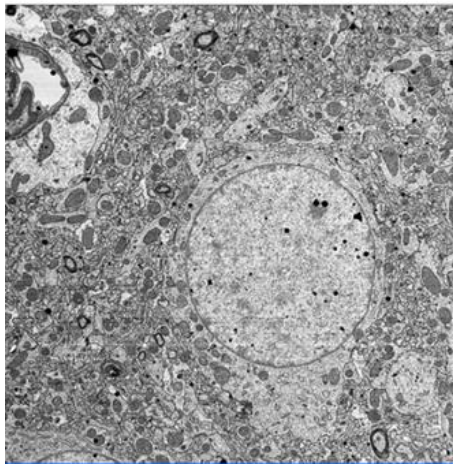




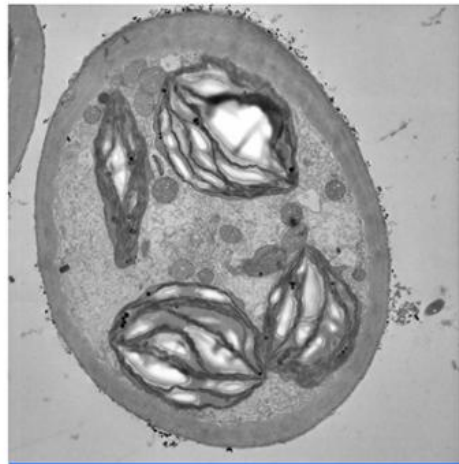
Human Brain Nerve Segmentation, BF, 273.1KX



Human Renal Pathology, DF, Large FOV 20um



Mouse Brain Neurectomy, BF, Large FOV 25um



Plant Cell Organization, BF, Large FOV 15um





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