



Digital Microscope

Model No. :FC-1SEB

Microscope Parameters

Eyepiece:	Wide-field WF10X eyepiece with a field of view diameter of 18mm.
Objective Lens:	DIN achromatic objective lens system.
Observation Head:	Hinged trinocular head, inclined at 30° and rotatable 360° freely.
Nosepiece:	Rolling bearing structure with accurate positioning, ensuring parfocality and optical centering consistency of the microscope.
Stage:	Dual-layer mechanical stage with an area of 125*125mm.
Focusing System:	Coaxial coarse and fine focusing mechanism driven by rack-and-pinion.
Light SourceSystem:	12V/3W LED light source with illumination brightness adjustable via a dimming potentiometer knob.

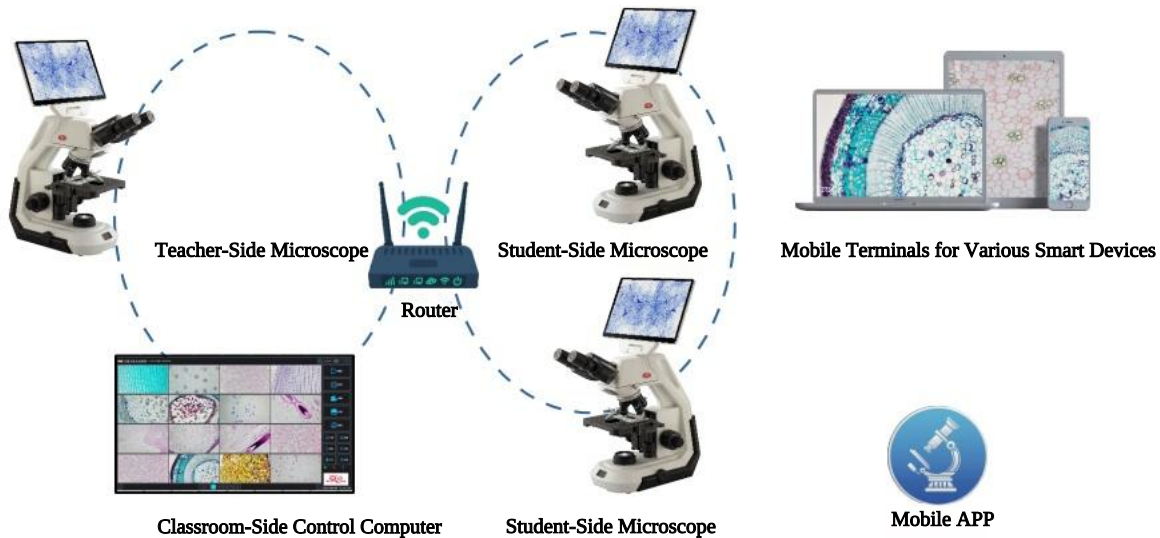
Integrated Digital LCD Imaging System

- Integrated digital imaging system equipped with a 1/2.8-inch progressive scan sensor, featuring an imported high-definition color CMOS chip with a resolution of 2592*1944 pixels.
- 10.1-inch LCD screen with USB, HDMI and UVC interface outputs.
- Built-in 5G & 2.4G WiFi function, supporting both AP mode and client mode:
In AP mode, a single microscope can wirelessly connect to smart terminals such as mobile phones and tablets; in client mode, multiple microscopes can form a wireless interactive system for collaborative observation.

System Introduction

Wireless Large-Screen Interactive System is an innovative product that integrates intelligent terminal devices, wireless communication technologies and digital microscopy technologies. It delivers high-resolution digital imaging and versatile interactive functions.

The wireless mode and multi-type intelligent terminals bring a brand-new interactive experience to digital classrooms, enabling closer collaboration between teachers and students as well as more flexible interaction methods. With data storable on portable intelligent terminals, the system greatly stimulates students' learning interest and enhances teaching efficiency.



System Features

Fully Wireless System Architecture

The entire system adopts a fully wireless architecture that is streamlined, high-speed and stable. Student terminals acquire microscopic images via wireless transmission, and interact with teacher terminals for data exchange through the same wireless channel. The system enables multi-dimensional information interaction covering microscopic observation, experiment documentation and data storage.

Reduced Maintenance Costs

With its carefully optimized architecture, each microscope terminal can automatically connect to the network and display real-time microscopic images simply by powering on, truly achieving one-button startup and shutdown. This saves users considerable time and effort, delivering a smoother and more hassle-free experience.

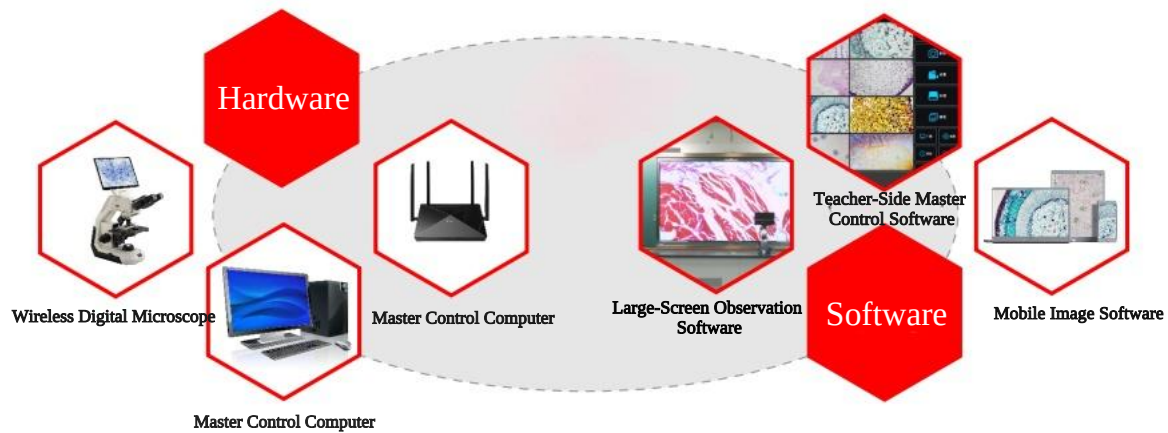
Cross-Platform Compatibility

The system supports multiple operating systems including Android, iOS and Windows simultaneously, enabling experimental teaching directly via smart devices such as mobile phones and tablets. Student smart terminals are free from restrictions of device type, operating system or brand.

Space-Saving Design

Each student terminal only requires a single power cable connection, which simplifies laboratory setup and facilitates microscope storage. This effectively improves the overall space utilization rate of the laboratory.

System Contiquration



Teacher-Side Master Control Software

Netcam 1.0.24

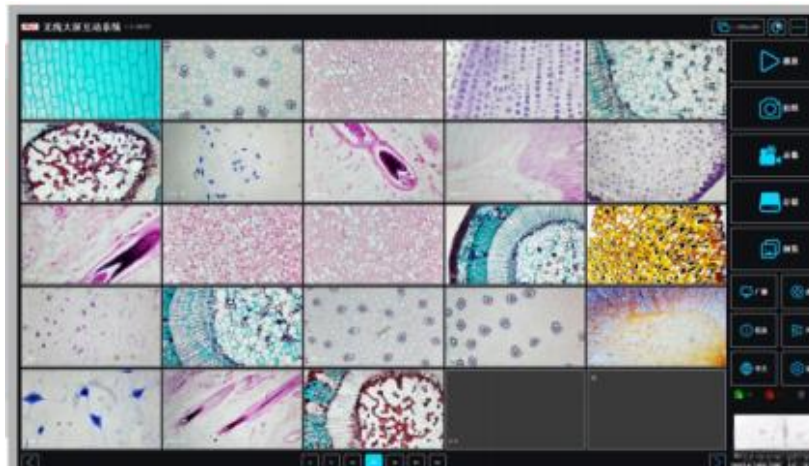


Image Capture

Teachers can use the master control software to take photos of all student windows with one click or capture images of individual student windows as needed. All captured images are automatically saved to a designated local folder.

Video Recording

Via the master control software, teachers are enabled to record videos of all student windows in one click or initiate recording for a single student window separately. The recorded video files are stored in a pre-assigned local folder.

Real-Time Control

Teachers can monitor the microscopic operations of all students in real time, transforming the microscopic field of view into a macroscopic display. This perfectly addresses the key pain points in experimental teaching.

Image Adjustment

Teachers are allowed to perform color correction on student windows through the master control software.

Language Selection

The system supports 7 optional languages, catering to the diverse teaching needs of different schools.

Specifications

Eyepiece	
Type	Wide-field WF10X eyepiece; field of view diameter 18mm, working distance 24.95mm.
Accuracy	Eyepiece magnification accuracy: within $\pm 4.67\%$.
Objective Lens	
Clear Imaging Diameter	4X: ≥ 13.7 ; 10X: ≥ 14 ; 40X: ≥ 13.6 ; 100X: ≥ 11.0 .
Parfocality Tolerance	10X $\rightarrow$ 4X: $\leq \pm 0.028$; 10X $\rightarrow$ 40X: $\leq \pm 0.018$; 40X $\rightarrow$ 100X: $\leq \pm 0.015$.
Runout	Runout within depth of field (10X objective): $\leq 0.05\text{mm}$.
Magnification Accuracy	Objective magnification accuracy: $\leq \pm 2.8\%$.
Objective conjugate distance	195mm.
Observation Head	
Type	Siedentopf-type trinocular head, 30° inclined, 360° rotatable.
Interpupillary distance	55mm – 75mm.
Image center displacement	$\leq 0.45\text{mm}$ (during 360° rotation).
Nosepiece	
Structure	Rolling bearing structure; precise positioning ensures parfocality and centering alignment.
Stability	$\leq 0.020\text{mm}$.
Stage	
Dimensions	Double-layer mechanical stage, 125mm $\times$ 125mm.
Travel range & precision	X/Y: 40mm $\times$ 60mm; precision: 0.1mm.
Defocus amount	$\leq 0.010\text{mm}$ (within 5mm $\times$ 5mm area).
Displacement under 5N lateral force	Max displacement: $\leq 0.005\text{mm}$; non-repeatability: $\leq 0.005\text{mm}$.
Condenser	
Type	Abbe condenser (N.A.: 1.25).
Distance to stage	$\leq 0.26\text{ mm}$ (when raised to highest position).
Focusing system	
Focusing system	Coaxial coarse and fine rack-and-pinion focusing mechanism.
Focusing system - Backlash	$\leq 0.008\text{ mm}$.
Light source system	3.5V/1W LED; brightness adjustable; lifespan $\sim 100,000$ hours.
Binocular	
Magnification difference	$\leq 1.35\%$.
Brightness difference	$\leq 12.8\%$.
Field-of-view center deviation	Vertical $\leq 0.14\text{ mm}$; horizontal outward $\leq 0.20\text{ mm}$; horizontal inward $\leq 0.20\text{ mm}$.
Optical axis parallelism	Horizontal divergence $\leq 36\text{ '}$; convergence $\leq 16\text{ '}$; vertical intersection $\leq 22\text{ '}$
Eyepiece end face position difference	$\leq 0.20\text{ mm}$ (at zero diopter setting).
Structure	
Integrated all-in-one design	No assembly required; LCD integrated with main body (non-detachable).
Camera sensor	1/2.8-inch progressive scan; 2592 $\times$ 1944 pixel, CMOS 5MP lens.
LCD screen	10.1-inch; resolution $\geq 1920 \times 1200$; supports UVC, USB, HDMI.
Operating system	Embedded Linux system.
Wireless Connection	Supports 60-64 microscopes simultaneously; CPU-driven direct LCD display to prevent signal interruption.
Rechargeable Battery	Battery capacity 2000 mAh, support 3 hours under normal use