



**NINGBO YONGXIN OPTICS CO., LTD**

Add: No.169 Mujin Road, Hi-tech Industry Park, Ningbo, China  
Tel: +86-0574-8791 5336  
Fax: +86-0574-8790 8111  
<http://www.yxopt.com>

**NANJING JIANGNAN NOVEL OPTICS CO., LTD**

Add: No.9 Hengda Road, Economic-Technologica Development Area, Nanjing, China  
Tel: +86-025-8772 0110 Fax: +86-025-8580 0086  
<http://www.jnoec.com>

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# CULTURE MICROSCOPE



**NIB600** series  
Inverted Biological Microscope

**Nexcope®**

Nexcope®

# NIB600 SERIES

Inverted Microscope for Cell Culture



**NIB650 / NIB660**  
Motorized Microscope



**NIB620 / NIB630**  
Compact Research-Grade  
Microscope for Cell Biology



**NIB610 / NIB620**  
Standard Cytology Lab Microscope



## Deeply Optimized for Laboratory Cell Observation, Comprehensive Upgrades to Core Performance and Operational Experience

- Based on a research-grade microscope, it has been reasonably improved to be more suitable for laboratory cell observation.
- It adopts a long-life LED light source and an infinite optical system, enabling easy acquisition of high-definition, high-contrast wide-field images.
- The compact and portable body, combined with a reasonable layout of operation buttons, allows cell observation, sampling, and processing inside a clean bench.
- The replaceable color filter set provides more diverse and flexible options for dye selection.
- The high-intensity and uniform-brightness LED illumination supports high-quality fluorescence observation.



# Focused on Cell Observation, Providing Simple and Effective Imaging Solutions

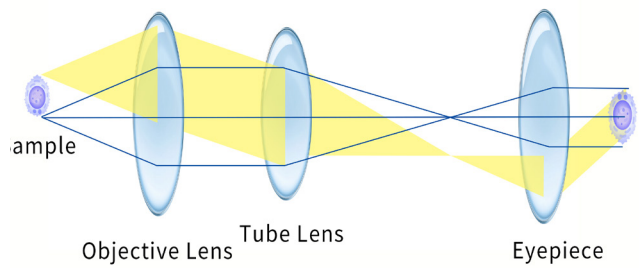


The NIB610/NIB620 Cell Culture Microscopes are custom-designed for daily observation and research scenarios in cell laboratories. Compared with traditional upright microscopes, they offer greater operational flexibility and scenario adaptability. They support cell observation methods such as phase contrast, Hoffman modulation contrast, and relief 3D contrast, enabling easy observation of translucent living cells even when they are inside culture vessels. With a compact and small body, operations like living cell observation, cell sampling, and processing can all be completed in a narrow clean bench. This creates a stable, efficient, and coherent workflow loop for experiments, making them reliable research collaborators in cell observation scenarios.

## Easy Observation of Living Cells

### Infinite Optical System

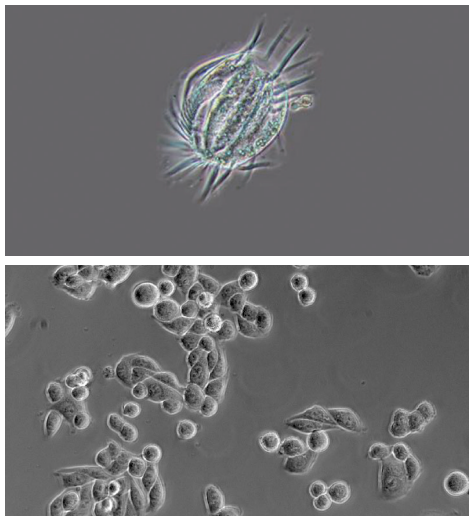
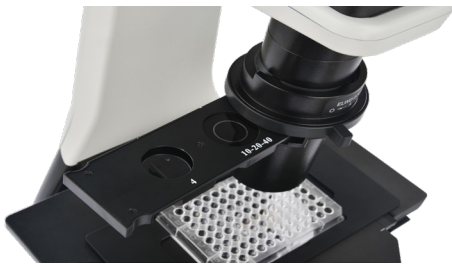
The infinite optical system minimizes aberrations to the greatest extent, ensuring more uniform sharpness at the image edges and color reproduction. It fully unleashes the resolution potential of high numerical aperture objectives, enhancing imaging resolution. Various optical modules can be flexibly added, allowing a single microscope to achieve multiple observation modes such as bright field, phase contrast, Hoffman contrast, and fluorescence.



### Multiple Cell Observation Methods

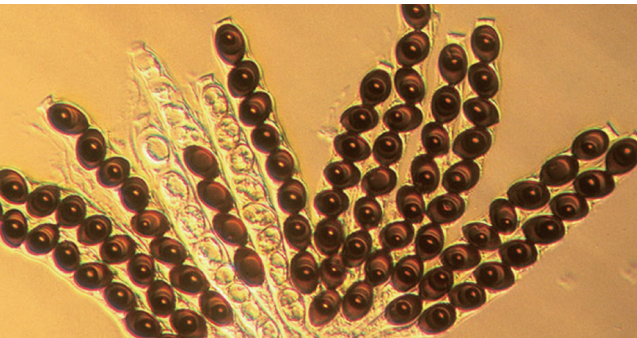
#### Phase contrast observation

Phase contrast observation enables detailed imaging of living cells without the need for staining or fluorescent dyes. The NIB600 features an integrated phase contrast insert, allowing clear cell imaging at 4x, 10x, 20x, and 40x magnifications without the need to replace or readjust the phase contrast ring plate.



#### Hoffman Modulation Contrast

Irradiating with oblique light converts phase gradients into changes in light intensity. This method can be used to observe unstained cells and living cells, and it gives thick samples a three-dimensional appearance. Additionally, it significantly reduces halos in thick specimens.



#### Embossed 3D Contrast

No complex optical components are required. Simply adding a contrast adjustment slider allows for the creation of pseudo-3D glare-free images. Both glass and plastic Petri dishes can be used.



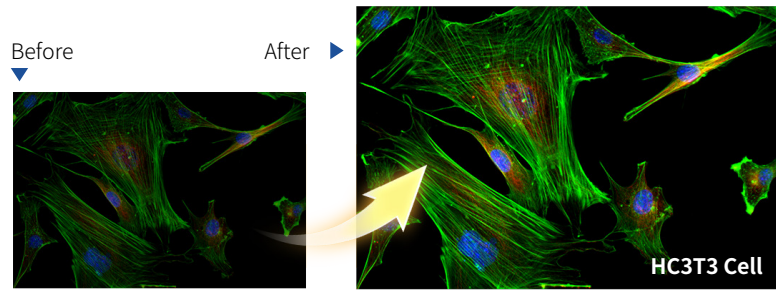
## Brightness Enhancement for Easier Fluorescence Observation

### Compound eye lenses ensure uniform imaging illuminance.

When combined with Köhler illumination, compound eye lenses deliver perfectly uniform and bright microscopic images, whether observed through a human eye eyepiece or captured via a camera CCD.

### The newly upgraded high-brightness LED fluorescent lighting

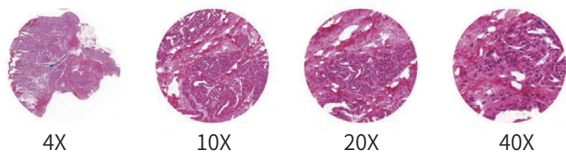
High-brightness LED lighting not only matches the brightness of traditional mercury lamp lighting but also offers a significantly longer service life. It also addresses issues with mercury lamps, such as the need for preheating, cooling down, and excessive temperature during operation.



## Intelligent Operating System

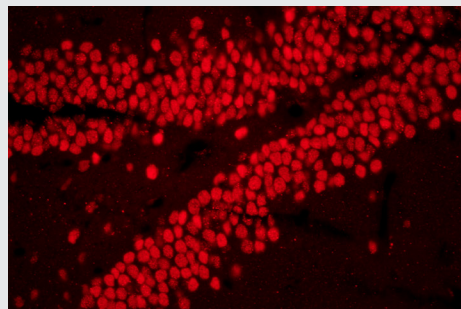
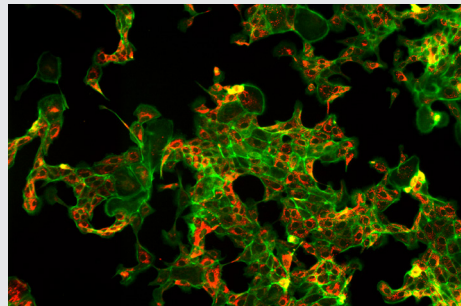
### Coded Objective Revolving Nosepiece

It can memorize the illumination brightness for each objective lens. When switching between different objectives, it automatically adjusts the light intensity, reducing visual fatigue and improving work efficiency.



### Microscope Operating Status Display Screen

The LCD screen on the front of the microscope displays its operating status, including magnification, light intensity, standby mode, and more.



## Cell sampling and aseptic manipulation are made more convenient.

### The control mechanism of the microscope is reasonably arranged for easy operation

The microscope positions its frequently used control mechanisms at a low, user-friendly height (below the stage). This design eliminates the need for significant posture adjustments during operation, enabling quick adjustments and reducing fatigue from prolonged observation. Additionally, it minimizes air currents and floating dust caused by hand movements, lowering the risk of sample contamination and safeguarding the accuracy and reproducibility of experimental results.

### The body boasts a compact, stable, and compact design

provides a certain level of shock resistance. Its small body can fit inside a clean bench, and its UV-resistant coating allows the UV lamp inside the clean bench to irradiate and sterilize the NIB600. It is convenient to place the eyepiece tube and control mechanisms outside the clean bench while keeping the stage, objectives, and samples inside. This setup enables easy sampling and cell manipulation within the clean bench, as well as comfortable observation from outside the clean bench.

### A variety of stage plates are available to accommodate different types of cell culture containers.

It is equipped with a universal tray suitable for various cell culture containers, such as petri dishes, multi-well plates, and culture flasks. Additionally, there are specific stage trays designed for petri dishes of different sizes, meeting diverse cell culture needs.



### Detachable Condenser

When using cell culture flasks, the condenser can be removed to increase the working distance. This design also accommodates multi-layer cell culture flasks.



# Microscopes for Cell Science Research Tasks: Acquisition of Highly Reproducible and Accurate Experimental Data



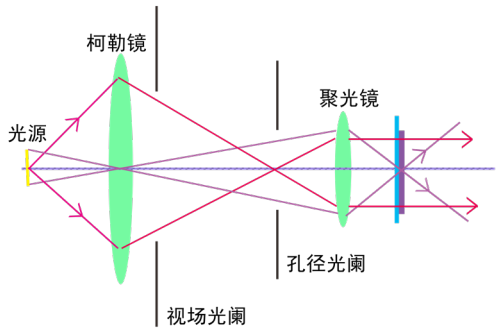
Within limited space, the device has fully upgraded its optical system, with a core Köhler illumination system. This greatly improves image sharpness and color reproduction, enabling precise display of microscopic features like cell states and organelle morphologies to support some cell science research tasks.

Thanks to the NIB630’ s compact design, the device fits easily into a laminar flow hood for convenient operation, making sophisticated research such as embryonic micromanipulation possible. It also optimizes the operating experience ergonomically, reducing researchers’ visual and physical strain during long experiments while balancing comfort and efficiency.

## Scientific research-grade optical quality

### Illumination system with high color reproduction capability

With its Köhler illumination system and daylight-simulating LED light source, the device maintains stable color temperature and uniform brightness. It easily reproduces the true colors of samples and distinguishes similar hues—an attribute crucial for pathological diagnosis.



### Aperture module easy to adjust

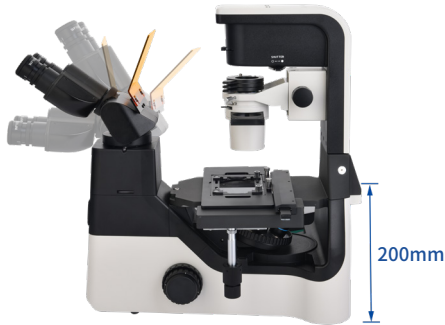
An easily accessible condenser aperture diaphragm adjustment mechanism. By flexibly adjusting the aperture diaphragm size, it enhances imaging resolution, optimizes image contrast and depth of field, expands the clear field of view, and enables easy achievement of ideal imaging results.



## Optimize the ergonomic design for prolonged observation

### Use a comfortable observation head

The tilting observation head, designed to conform to human operating habits, allows users to operate the microscope in a comfortable posture, minimizing muscle tension and discomfort caused by prolonged work. It enables the most comfortable usage whether in a sitting or standing position, and handles frequent switches between standing and sitting postures with ease.



### Low-hand-position operating stage

Compared with research-grade inverted microscopes, the stage height of the NIB600 has been reduced by 37%. This allows users to maintain a comfortable hand position and smooth movements when operating the microscope, enhancing both work efficiency and comfort.

### Tiltable Transmitted Illumination Column

Petri dishes used for cell observation are often large in size and area. The tiltable transmitted illumination column provides more space for sample replacement, reducing the movement distance and vibration during sample changes.



# Highly Open Cell Experiment Platform

## Build a Microscope Tailored to Your Team

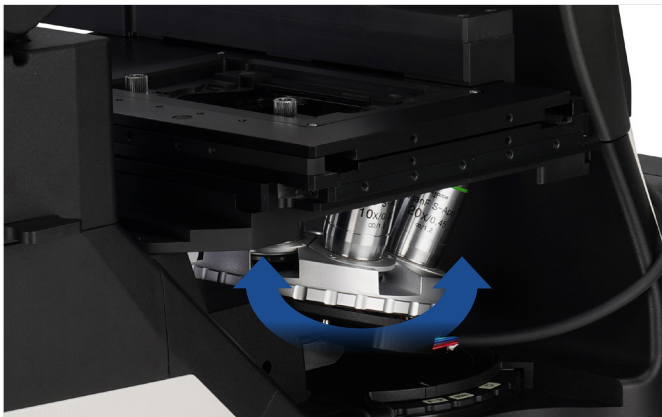


Designed for cell experiments, the NIB650/NIB660 are built around high-precision motorized control, offering stable support for operations. They go beyond traditional microscopes: with an open platform and strong compatibility, they work with various imaging modules for functional tweaks in different scenarios. Plus, dedicated data ports and open SKU design let you add accessories (like imaging software, constant-temperature cell culture platforms, or high-precision micromanipulation platforms) for "on-demand assembly"—creating a custom, efficient microscope that fits your team’s research.

## Electrically-powered intelligent components for enhanced work efficiency

### Motorized Components

It integrates multiple motorized components: an XY motorized stage with a large travel range and high precision for fast positioning (ideal for multi-point observation); fast, accurate Z-axis control; and a motorized objective nosepiece for smooth switching and precise positioning.



### Control Handle

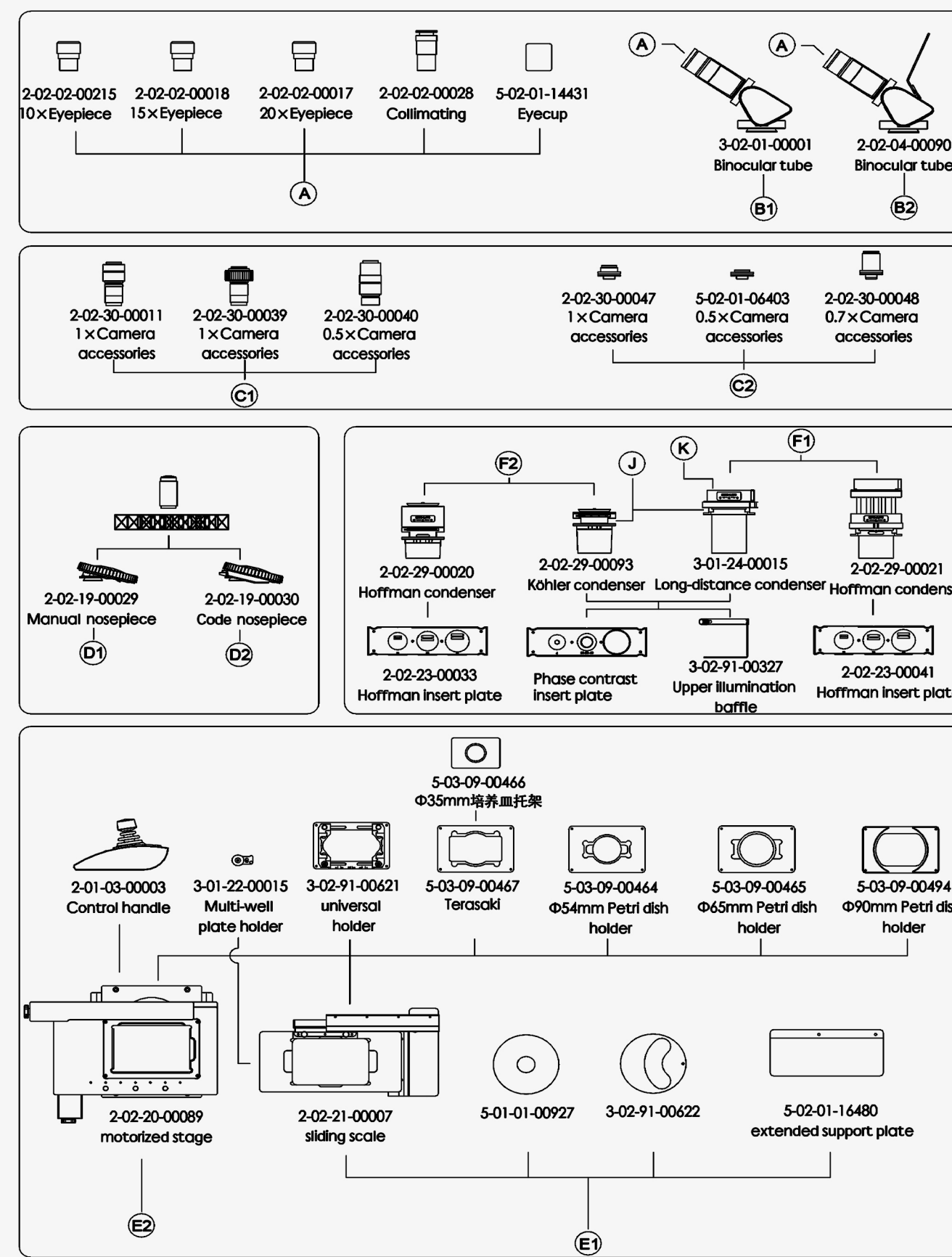
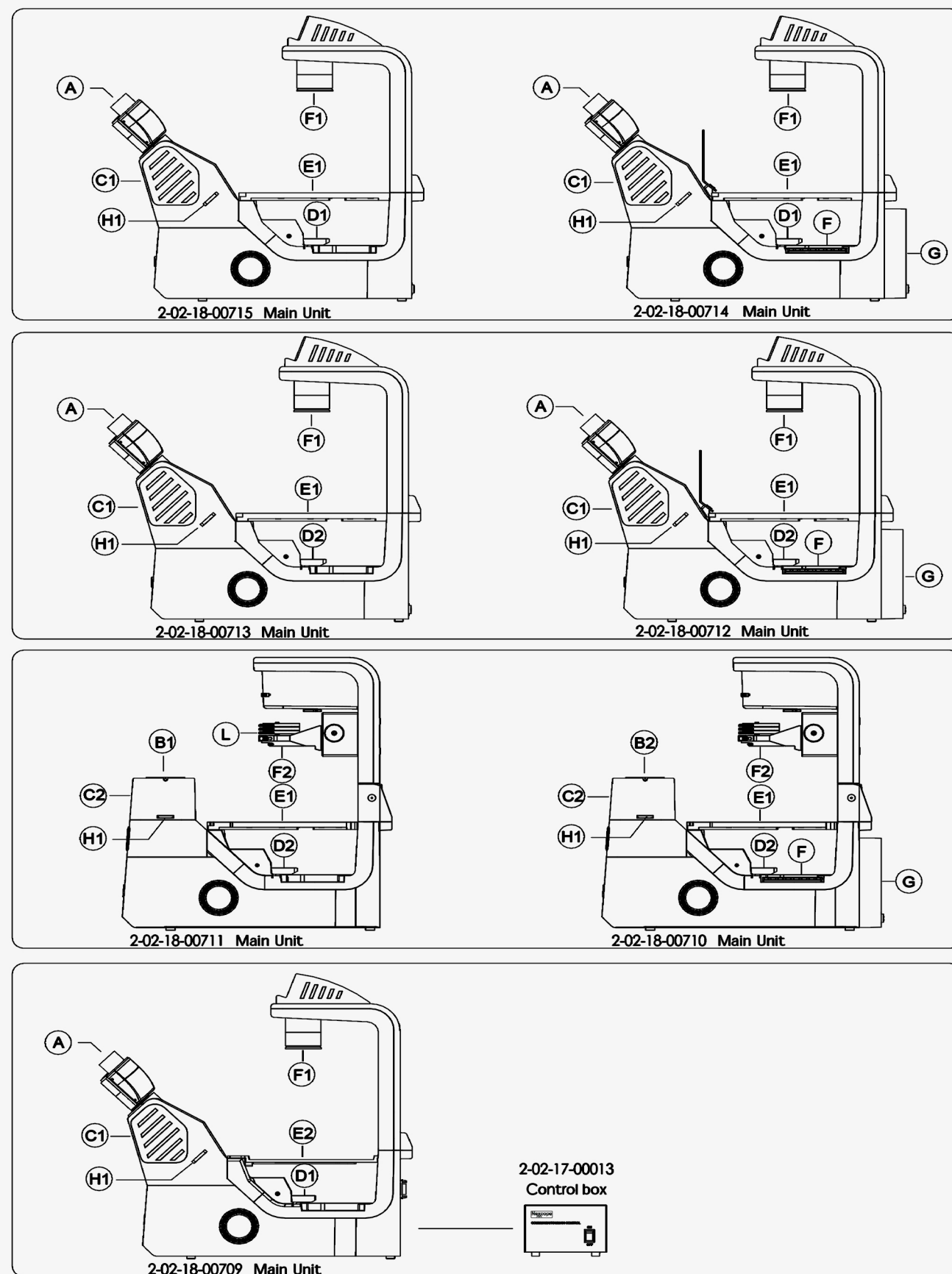
Equipped with an extremely flexible platform control handle, it supports three levels of adjustment for both focusing speed and platform movement speed. This enables targeted observation of individual cells or specific regions, allowing easy completion of the entire process from macroscopic search to microscopic focusing, significantly enhancing experimental efficiency and observation accuracy.



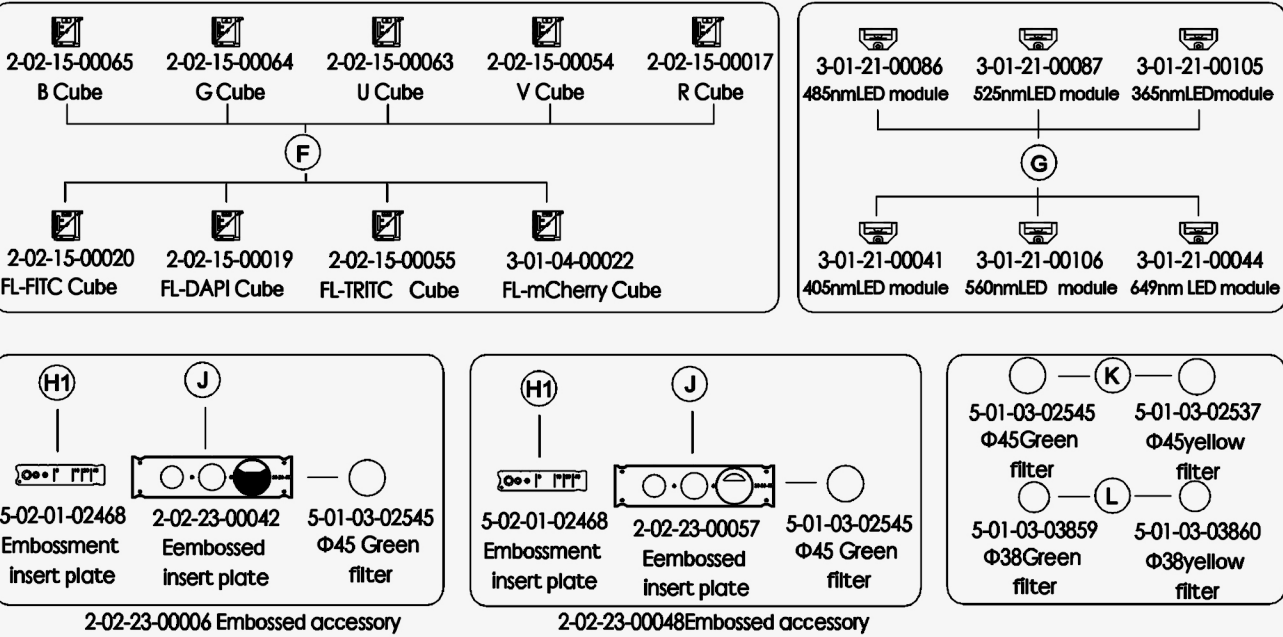
## Open Empowerment: Customize Your Exclusive Microscope Platform

We have built an open technology platform that provides standardized application programming interfaces (APIs), application software interfaces, and open software development kits (SDKs), breaking down the connection barriers between devices, and between devices and software. From precise micro-operation and automated cell culture to efficient data analysis, all processes can collaborate seamlessly. This enables the rapid construction of an exclusive and efficient microscope platform that aligns with one's own experimental workflows, significantly reducing customization costs and accelerating the implementation efficiency of scientific research and applications.

# SYSTEM LAYOUT

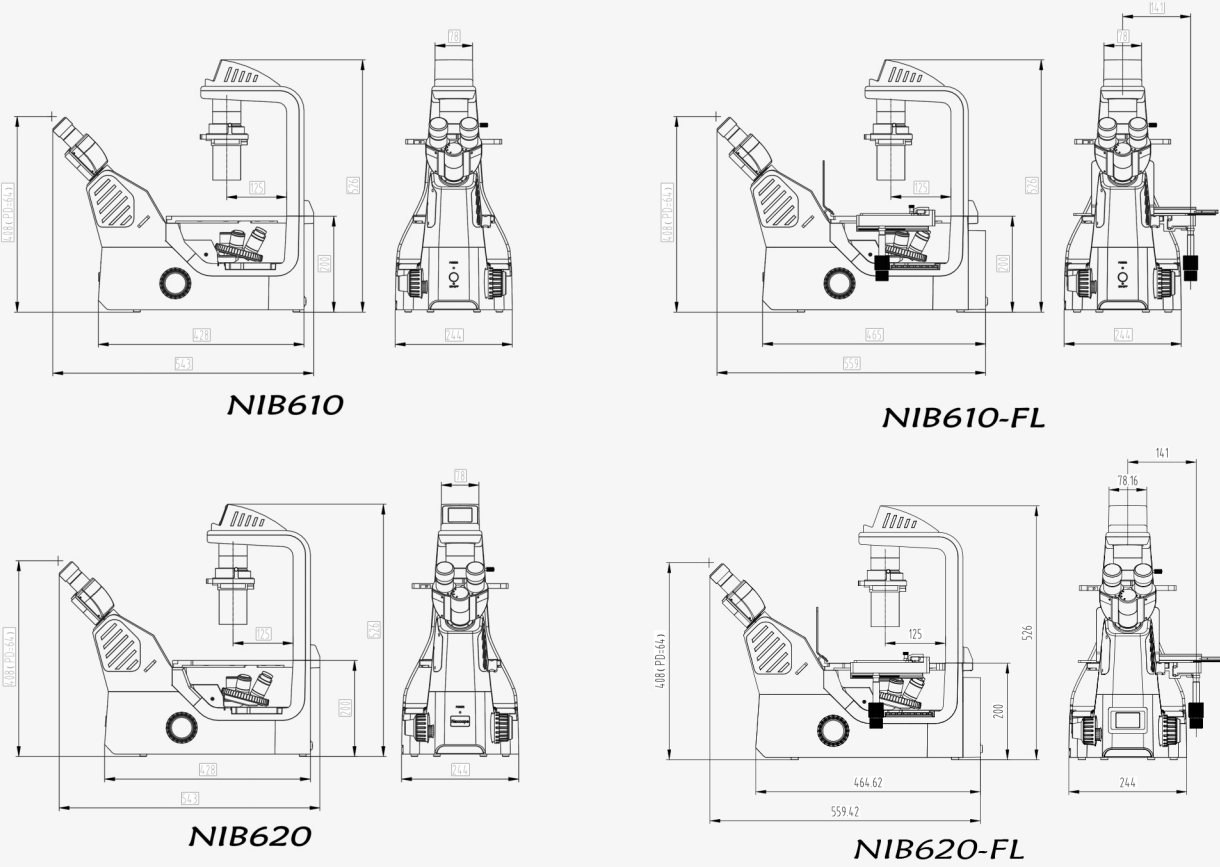


SYSTEM LAYOUT



DIMENSION

(Unit: mm)



NIB600 Series Inverted Microscope Specifications

|                                   | NIB610                                                                                                                                                                                                                                                | NIB610-FL                                                                                       | NIB620                                                                    | NIB620-FL                                                                                       | NIB630                                                                                         | NIB630-FL                                                                                       | NIB650                                                                                                                                         | NIB650-FL                                                                                       | NIB660                                                                                         | NIB660-FL                                                                                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Optical System                    | NIS Infinity Optical System                                                                                                                                                                                                                           |                                                                                                 |                                                                           |                                                                                                 |                                                                                                |                                                                                                 |                                                                                                                                                |                                                                                                 |                                                                                                |                                                                                                 |
| Transmitted Illumination          | LED Illumination                                                                                                                                                                                                                                      |                                                                                                 |                                                                           |                                                                                                 | LED Koehler Illumination                                                                       |                                                                                                 | LED Illumination                                                                                                                               |                                                                                                 | LED Koehler Illumination                                                                       |                                                                                                 |
| Reflected Illumination            | —                                                                                                                                                                                                                                                     | Configurable with 3 high-brightness LED fluorescent light sources of different wavelength bands | —                                                                         | Configurable with 3 high-brightness LED fluorescent light sources of different wavelength bands | —                                                                                              | Configurable with 3 high-brightness LED fluorescent light sources of different wavelength bands | —                                                                                                                                              | Configurable with 3 high-brightness LED fluorescent light sources of different wavelength bands | —                                                                                              | Configurable with 3 high-brightness LED fluorescent light sources of different wavelength bands |
| Trinocular Tube                   | Integrated hinged observation tube, 45° inclination, interpupillary distance 48-75mm                                                                                                                                                                  |                                                                                                 |                                                                           |                                                                                                 | Hinged tiltable binocular observation tube, 5-35° inclination, interpupillary distance 48-75mm |                                                                                                 | Integrated hinged observation tube, 45° inclination, interpupillary distance 48-75mm                                                           |                                                                                                 | Hinged tiltable binocular observation tube, 5-35° inclination, interpupillary distance 48-75mm |                                                                                                 |
| Eyepiece                          | SW10× (22)                                                                                                                                                                                                                                            |                                                                                                 |                                                                           |                                                                                                 |                                                                                                |                                                                                                 |                                                                                                                                                |                                                                                                 |                                                                                                |                                                                                                 |
| Focusing                          | Coaxial coarse and fine focusing with left/right fine adjustment knob interchangeable mechanism; right-hand side features coarse focus tension adjustment function                                                                                    |                                                                                                 |                                                                           |                                                                                                 |                                                                                                |                                                                                                 | Motorized Focusing                                                                                                                             |                                                                                                 |                                                                                                |                                                                                                 |
| Nosepiece                         | Manual quintuple nosepiece                                                                                                                                                                                                                            |                                                                                                 | Code quintuple nosepiece                                                  |                                                                                                 |                                                                                                |                                                                                                 |                                                                                                                                                |                                                                                                 | Motorized quintuple nosepiece                                                                  |                                                                                                 |
| LCD Screen                        | —                                                                                                                                                                                                                                                     |                                                                                                 | Displays magnification, timed sleep, brightness indication and lock, etc. |                                                                                                 |                                                                                                |                                                                                                 |                                                                                                                                                |                                                                                                 |                                                                                                |                                                                                                 |
| Condenser                         | Long-distance condenser lens, NA = 0.3, WD = 75mm. Removing the condenser lens allows a working distance of 187mm                                                                                                                                     |                                                                                                 |                                                                           |                                                                                                 | Köhler illumination condenser, plug-in condenser, NA=0.3, WD=75mm                              |                                                                                                 | Long-distance condenser lens, NA = 0.3, WD = 75mm. Removing the condenser lens allows a working distance of 187mm                              |                                                                                                 | Köhler illumination condenser, plug-in condenser, NA=0.3, WD=75mm                              |                                                                                                 |
| Stage                             | Flat stage: 170 (X) × 250 (Y) mm, equipped with a stage insert disc and optional extended support plate. Mechanical stage: travel range of 128 (X) × 80 (Y) mm, compatible with five types of micro plates, multi-well plate clamps, and stage clamps |                                                                                                 |                                                                           |                                                                                                 |                                                                                                |                                                                                                 | Travel range: 120 (X) × 76 (Y) mm. It can be configured with a universal holder, a well plate holder, and various slide and petri dish holders |                                                                                                 |                                                                                                |                                                                                                 |
| Phase Contrast System             | Configured with 4× phase contrast, and universal phase contrast annuli for 10×, 20×, and 40×                                                                                                                                                          |                                                                                                 |                                                                           |                                                                                                 |                                                                                                |                                                                                                 |                                                                                                                                                |                                                                                                 |                                                                                                |                                                                                                 |
| Hoffman Modulation Contrast (HMC) | Configured with Hoffman condensers for 10×, 20×, and 40× magnifications, along with matching dedicated objectives.                                                                                                                                    |                                                                                                 |                                                                           |                                                                                                 |                                                                                                |                                                                                                 |                                                                                                                                                |                                                                                                 |                                                                                                |                                                                                                 |
| 3D Relief Contrast                | A relief contrast adjustment slider is installed at the condenser, and a relief contrast slide (universal for 10×, 20×, and 40× magnifications) is configured on the side of the eyepiece tube                                                        |                                                                                                 |                                                                           |                                                                                                 |                                                                                                |                                                                                                 |                                                                                                                                                |                                                                                                 |                                                                                                |                                                                                                 |

DIMENSION

(Unit: mm)

