

Motic



SM Series — Research Grade Stereo Microscope

Superior Optical Performance
Ultimate User Experience

Optimal Optical Solution

Motic adopts a Galilean Optical System, utilizing axial and radial chromatic aberration correction plus contrast correction optical technologies. Through advanced precision manufacturing and an excellent quality assurance system, the SM series delivers greater satisfaction in any research and production environment, along with more precise and optimized optical solutions.

Powerful Performance

High resolution, true-to-life color reproduction, and low distortion are key features of Motic microscopes, delivering clear images for better analysis. Motic's optimized optical solutions enable enhanced analytical capabilities.

Advanced Design

Ergonomic design is thoughtfully applied to maximize operational efficiency and reduce user fatigue. Each module is ideally positioned, with compact dimensions and refined aesthetics, making the microscope easy to use in any application. All of these elements work together to minimize fatigue caused by extended observation.

Greater Flexibility

A wide range of objective lenses and eyepieces allows users to fully utilize the optical system for any purpose, task, or application. Custom stands and digital applications ensure optimal resolution in any environment.



SM Series

Intuitively optimized zoom and color reproduction provide you with stable, high-quality images.

With a wide range of interchangeable accessories, the SM series supports everything from observation to analysis to digital imaging. It meets the demands of any defined inspection environment or task and is widely applicable in industrial inspection, quality analysis, and other industrial settings. It is also well-suited for fields such as molecular biology, cell biology, neurobiology, embryology, and developmental biology, which increasingly require spatial-scale observations ranging from single cells to entire organisms.



Optimal solution with a high-precision Galilean optical system

Galilean Optical System

The Galilean optical system ensures true-to-life image reproduction. In addition, it allows for quality control of high-precision accessories required for a wide range of research applications.

16:1 Ultra-Wide Zoom

The SM series offers multiple zoom ratios— 7:1, 10:1, 12:1, and 16:1—to meet the needs of various application scenarios. Whether for challenging inspections or routine daily tasks, it delivers the optimal solution.

Outstanding Optical System

The superior optical design not only enables real-time color reproduction and high resolution, but also minimizes distortion and aberration to the greatest extent, ensuring clear imaging across a variety of sample types.

Ultra-High Work Efficiency

The SM series' ultra-wide zoom range simplifies all operations, allowing users to easily perform both overall sample observation and detailed inspections without changing objectives, effectively improving work efficiency.

High-Performance and Stable System

Powerful performance and advanced color reproduction



Strict design standards, along with advanced coating technology and premium lens materials, minimize aberrations and distortion to the greatest extent.

High-Resolution Objectives

Low distortion, extended working distances, optimal lens combinations, and excellent design provide an improved observation environment suitable for any sample. The ideal selection of lenses and coating materials ensures true-to-life color reproduction and long service life. Interchangeable objectives allow the microscope to adapt to any working scenario.

Comfortable Eyepiece Design

The high-eyepoint design and aberration correction are key advantages of Motic microscope eyepieces, providing an optimal field of view—especially important for users with reduced vision.

Flexible Viewing Tubes

The viewing tube design accommodates all types of observation needs. The trinocular tube allows for photography and digital imaging output. Additionally, a 60-degree viewing head is available to meet special applications and custom requirements.

Optional Eyepiece Specifications:

- N-WF 10X/23 adjustable
- N-WF 12.5X/18 adjustable
- N-WF 15X/16 adjustable
- N-WF 20X/13 un-adjustable

Optional Objective Lens Specifications:

- APO 1X Plan Apochromatic Objective
- ACH 1X Plan Achromatic Objective
- ACH 0.5X Plan Achromatic Objective
- ACH 2X Plan Achromatic Objective

User-Friendly Ergonomic Design

Visual comfort and ease of operation



Simple, multifunctional design that reduces eye fatigue

Lightweight and Streamlined Design

Exceptional ergonomic design minimizes operator fatigue and maximizes work efficiency.

Comfortable Zoom / Focus Knobs / Zoom Stops

The zoom and focus knobs are made from carefully selected polyurethane material to ensure comfortable operation. Clearly defined zoom stops can be set to achieve repeatable magnification levels, enhancing work efficiency.

High Eyepoint and Diopter Adjustment

The high-eyepoint eyepiece design offers a comfortable viewing field, allowing nearsighted users to easily adjust the eyepiece diopter.

Illumination Accessories

Fidelity in true color reproduction and real-time illumination control



Use of high-intensity LED

High-Intensity LED

Low-power, long-lasting LEDs provide suitable transmitted and reflected illumination. LED lighting with ultra-high color temperature has been proven to reproduce true colors without affecting samples, while extending lifespan and reducing energy costs.

4-Segment LED Ring Illumination

The simple 4-segment LED ring illumination can simulate different lighting environments for improved observation. The light intensity can be easily optimized for glossy samples or specimens.

LED Transmitted / Reflected Illumination

No additional external light source is required. The angle of the oblique illumination can be adjusted from beneath the stand, and the transmitted light source perfectly matches the stand base.

Robust, High-Performance and System

A wide range of accessories can be connected without changing the optical system.



Easy to operate with a broader workspace, suitable for all applications with ESD protection

More Diverse Body Options

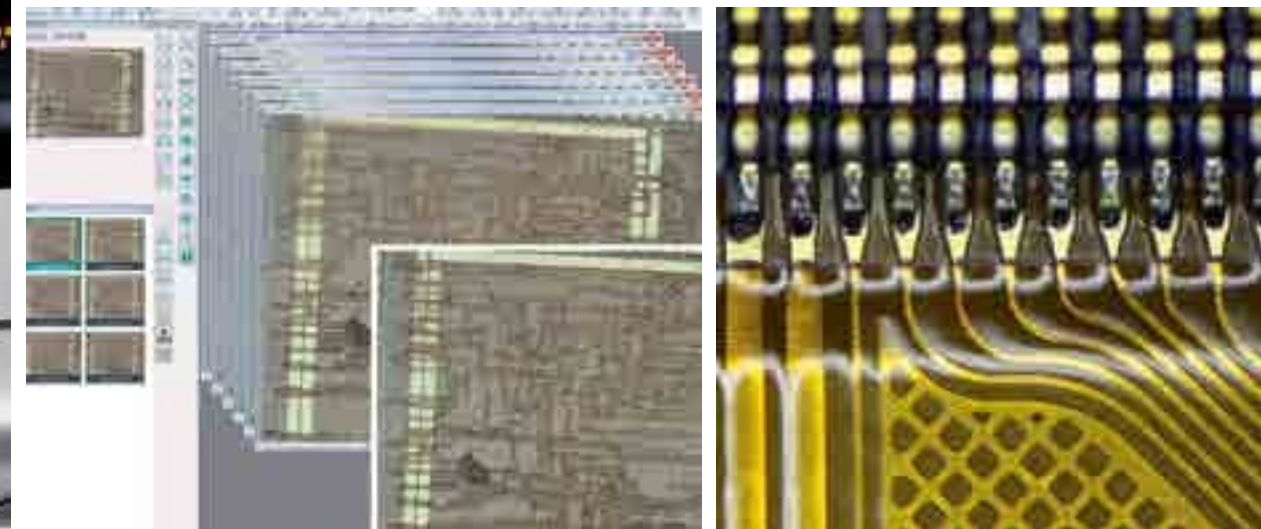
To meet your specific work environment needs, various microscope bodies are available. For example, for large specimens or samples, the SM series can be equipped with a streamlined hybrid transmitted and reflected light module or a standard body.

Electrostatic Discharge (ESD) Protection

Motic's unique ESD protection system complies with UL and CL standards and regulations, making the Motic SM series an advantage in electronic and electrical quality control.

Easy-to-use digital applications

Clear image quality, accurate color reproduction, and easy processing of images and text are fully integrated within the Motic image processing system.



Motic Measurement and Analysis Software:
Highly compatible hardware and software for easy use.

Digital Camera

Analysis integrates with all Motic microscopes and can display images on any computer or digital imaging system.

Enhanced Measurement Capabilities

It is not enough to say that Analysis has 3D functionality; it also offers superior measurement features. With Analysis' user-friendly analysis tools, highly complex analyses of industrial, metal, and biological samples can be easily performed.

Application Features

- Easy-to-use, intuitive user interface
- Real-time measurements: length, area, angle, auto-tracking, and more
- Excellent compatibility with Microsoft Excel for export and import
- Focus indicator, color histogram, multifocus, automatic tilt correction
- Extensive filtering and image processing capabilities
- Software upgrades and customer support available via the internet

SM Series System Diagram



SM Series Stereo Microscope Optional Accessories

Fluorescence Illumination Adapter

The fluorescence illumination intermediate module is primarily used for observing large specimens with strong fluorescence. To use it, first install the fluorescence illumination module onto the zoom body, then attach the viewing head onto the fluorescence module.

Coaxial Illumination Adapter

The coaxial illumination intermediate module is used to observe samples that cannot be seen clearly with oblique or ring illumination, especially non-transmissive (highly reflective) specimens. It provides uniform and bright illumination across the field of view. To use it, first install the coaxial illumination module onto the zoom body, then attach the viewing head onto the coaxial module. A wavelength filter set is also required and should be installed below the objective lens.

Jewelry Clamp

- Magnetic Wire Jewelry Clamp
- Magnetic Flat-Tip Jewelry Clamp

Note: The wire gem clamp, flat-tip gem clamp, and gem probe are all mounted using a magnetic attachment method. First, install the magnetic base onto the stand, then place the accessories on top. They can be freely rotated 360° and adjusted for tilt and angle.

Ring Light

A high-brightness ring LED light that can be directly mounted to the lower end of a large objective lens or auxiliary lens.

Darkfield Illuminator

The darkfield illuminator is installed in the stage plate opening of the base. This specialized illuminator ensures that the transmitted light does not enter the objective lens directly, allowing the specimen to achieve higher contrast. It is particularly useful for observing special specimens, such as fibers or other hard-to-see objects. The darkfield illuminator is suitable for bases equipped with built-in light sources.

Composite Polarizer

- The polarizer in the combination polarizer is installed in the stage plate opening of the base, while the analyzer is fitted onto the decorative ring of the microscope body.
- Both the polarizer and analyzer can rotate 360°.
- The polarizer is primarily used to observe and analyze the optical properties of thin-section specimens—such as transparent or opaque minerals and heterogeneous materials—by applying the principles of microscopic magnification and polarized light interference.

Stand

Standard Post Stand

- V-shaped guide rail combined with steel ball lifting mechanism ensures smoother, more comfortable, and stable focusing.
- Requires a stand adapter (Ø32) for use. Stand adapter part number: 1300705802781
- Equipped with a light source mounting hole.
- Focusing travel: 50 mm
- Post mounting size: Ø32 mm
- Microscope body mounting size: Ø76 mm
- Available in standard and ESD (electrostatic discharge) versions.

Standalone Polarizer (B301K Polarizer)

The independent polarizer is installed in the stage plate opening of the base. The polarizer can rotate 360°, and the analyzer can both rotate 360° and be swung out of the optical path. The polarizer is mainly used to observe and measure the optical properties of thin-section specimens such as transparent objects and heterogeneous materials by utilizing the principles of microscopic magnification and polarized light interference.

Stage

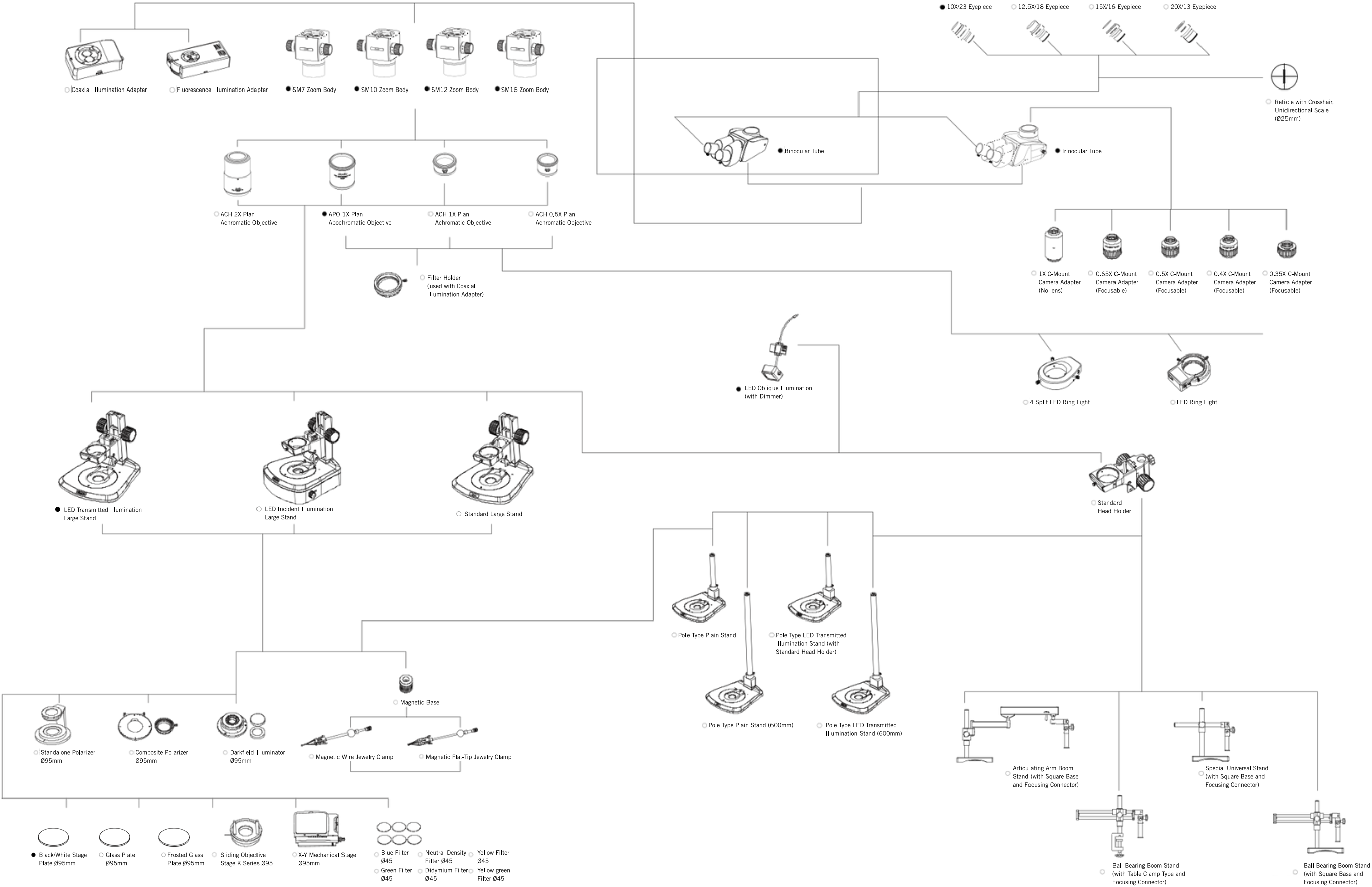
Sliding Objective Stage

The stage is installed in the stage plate opening of the base, allowing parallel movement in any direction as well as 360° planar rotation, facilitating easy observation of small specimens.

X-Y Mechanical Stage

When the mechanical stage is installed on the microscope base, turning the coaxial adjustment knobs (large and small) enables smooth movement of the stage along both the X and Y axes.

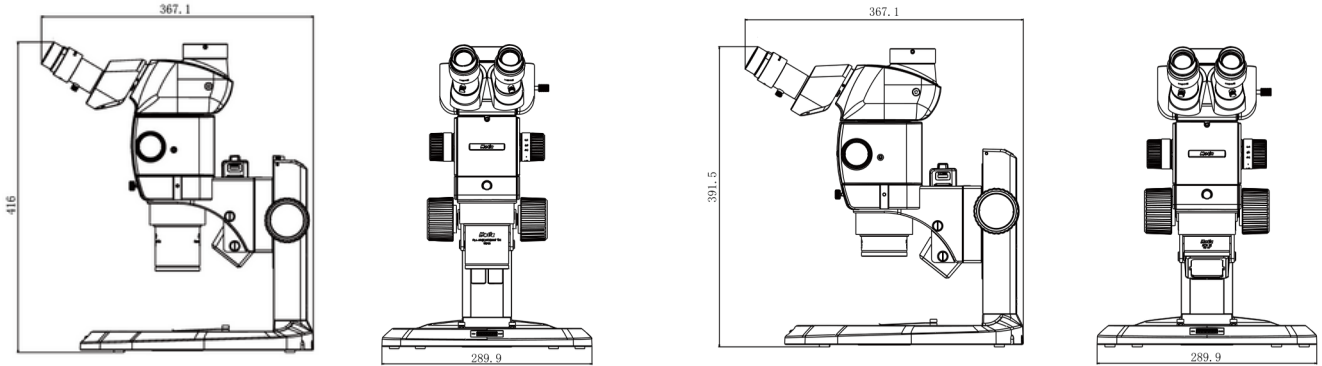
SM Series System Diagram



SM Series Technical Specifications

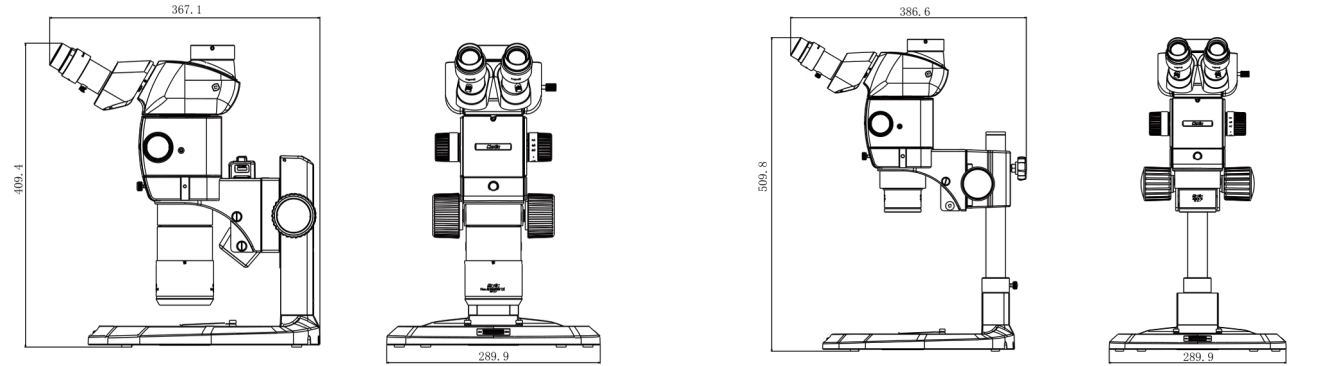
	SM7	SM10	SM12	SM16
Optical system	Galilean infinity optical design. Common Main Objective (CMO)			
Observation tube	Binocular/ trinocular head (100:0/20:80)			
Inclination	30° inclined			
Interpupillary distance	55 - 75 mm			
Zoom range	7:1(0.8-5.6X)	10:1(0.75~7.5X)	12:1(0.67~8X)	16:1(0.6~9.8X)
Zoom steps	10 Steps: 0.8, 1, 1.25, 1.6, 2, 2.5, 3.2, 4, 5, 5.6 Zoom stop mechanism can be turned on or off.	12 Steps: 0.75, 0.9, 1, 1.25, 1.6, 2, 2.5, 3, 4, 5, 6, 7.5 Zoom stop mechanism can be turned on or off.	12 Steps: 0.67, 0.8, 1, 1.25, 1.6, 2, 2.5, 3, 4, 5, 6.5, 8 Zoom stop mechanism can be turned on or off.	12 Steps: 0.6, 0.7, 0.8, 1, 1.25, 1.6, 2, 3, 4, 6, 7.5, 9.8 Zoom stop mechanism can be turned on or off.
Camera adapters (Optional)	1X C-Mount camera adapter (No lens), 0.65X C-Mount camera adapter focusable, 0.5X C-Mount camera adapter focusable, 0.4X C-Mount camera adapter focusable, 0.35X C-Mount camera adapter focusable			
Eyepieces	N-WideField 10X/23, with +/-5 diopter adjustment (standard)			
	N-WideField 12.5X/18, with +/-5 diopter adjustment (optional)			
	N-WideField 15X/16, with +/-5 diopter adjustment (optional)			
	N-WideField 20X/13 (optional)			
Objective mounting	Threaded connection			
Objectives	PL APO 1X,256 lp/mm, W/D 81mm (optional)			
	ACH 1X, 256 lp/mm, W/D 90mm (standard)			
	ACH 0.5X, 128 lp/mm, W/D 198.5mm (optional, used with pole type plain stand ONLY)			
	PL ACH 2X, 256 lp/mm, W/D 29.5mm (optional)			
Stand types	Standard large stand, Incident/ transmitted LED illumination large stand, Pole type plain stand, Incident/ Transmitted LED illumination Pole type stand			
Head holders	Standard head holder, coarse and fine focusing head holder			
Focusing mechanism	Coarse focusing system with tension adjustment			
Focusing stroke	Tension adjustment: 120mm			
Illumination light source	Transmitted LED illumination			
	Incident LED illumination			
	Input Voltage: AC 100-240V, 50/60Hz, 10W			
Optional accessories	Black/white stage plate, Frosted glass plate, Glass plate, Sliding objective stage K series (Ø95mm), X-Y mechanical stage (Ø95mm), Darkfield illuminator, Composite polarizer, Standalone polarizer, LED oblique illumination, LED ring light, 4 split LED ring light, Fluorescence illumination adapter, Coaxial illumination adapter, Jewelry clamp, Color filters			
Included accessories	Power adapter, Hex key wrench, Instruction manual			

SM Series Schematic Diagrams (mm)



Equipped with APO 1X Plan Apochromatic Objective

Equipped with ACH 1X Plan Achromatic Objective



Equipped with ACH 2X Plan Achromatic Objective

Equipped with ACH 0.5X Plan Achromatic Objective