



Motic®

MORE THAN MICROSCOPY

SMZ171 | FLEXIBLE STEREOMICROSCOPE SOLUTION



I SMZ171

With the **new SMZ-171 Stereo Zoom microscope** Motic proudly introduces an optically improved addition to its well-established SMZ Stereo series. New materials for ESD compatibility as well as optimized LED illumination options have been added to this series to create a versatile Stereo microscope platform for a wide range of **biological** and **material science applications**. The SMZ-171's optical performance, combined with its expanded accessory line, make it an ideal instrument for the demanding requirements **for both routine and research fields**. From biological and medical preparations to industrial quality control and inspection, the SMZ-171 will deliver repeatedly clear and distortion-free images.

The **Greenough optical system** comes with a large-scale **zoom range of 6.7:1, parfocal at all magnifications**; while a **5-position click-stop mechanism**, implemented in the continuous zoom, enables **precise reproduction of magnifications** for easy measurements. The **working distance of 110mm** in its standard configuration gives sufficient space for any kind of sample viewing and manipulation. Also, an enhanced and crisp depth-of-view produces consistent and convincing 3-dimensional upright images. Further, the SMZ-171 can convert easily into a complete documentation station by combining it with a member of the Moticom camera family.



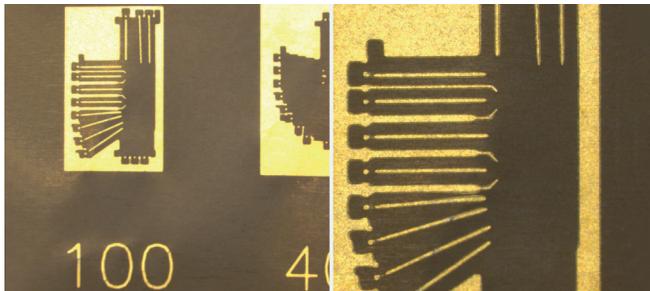
SMZ171

FLEXIBLE STEREO MICROSCOPE SOLUTION

Zoom Range

Switching from a macro overview down to micro details has never been easier than with the SMZ-171. The **6.7:1 zoom** ratio in the SMZ-171 enables a **standard** magnification range of **7.5X-50X**. While zooming, a re-adjustment of the focus position is not necessary - as the complete optical system is designed for **parfocality through the complete zoom range**.

To increase the model's magnification range a selection of **auxiliary objectives** and **eyepieces** are also available, extending the SMZ-171's total magnification range from 2.25X up to 200X.



Eyepieces

The SMZ-171's **standard Widefield 10X/23mm** eyepieces follow the **high eyepoint principle**, giving spectacle wearers access to the complete field of view. Individual eyepiece **diopter adjustments of +/- 5 dpt** provide the best conditions for the use of reticules, while standard rubber eye guards minimize stray light and increase viewing comfort. Besides the standard 10X/23 eyepiece magnification, the SMZ-171 Series also offers eyepieces with **alternative magnifications**. For measuring purposes, a series of reticules are available.

Auxiliary Objectives

With a standard **working distance of 110mm**, the SMZ-171 offers sufficient space for sample manipulation through various magnifications. The maximum field diameter (with lowest zoom position and 10X/23 eyepieces) will be 30.7mm. Higher magnifications can be achieved by using the following auxiliary objectives, **which follow ESD requirements**:

Magnification	W.D.(mm)	Max. Field Diameter (with 10X/23 eyepiece)
1.5X	56.3	20.4
2X	38.6	15.3

To achieve a larger sample overview, the following auxiliary objectives may be chosen:

Magnification	W.D.(mm)	Max. Field Diameter (with 10X/23 eyepiece)
0.3X	301	102.2
0.5X	191.8	61.3
0.63X	142.7	48.7
0.75X	128.6	40.9



3-D Image

Motic's SMZ-171 is based on the Greenough Optical System. With its completely separated optical paths, this system has been a proven concept for more than 100 years of microscopy. The SMZ-171 delivers **impressive 3-D images, distortion-free**, and with a high **resolving power of maximum 460 lp/mm** (with 2X auxiliary objective).

The Working Distance

With its standard configuration, the SMZ-171 provides a large **working distance of 110 mm**, which can be easily **extended to 301mm** (with additional auxiliary objective 0.3X). To achieve a desired total magnification, objective magnifications less than 1X may be compensated by using high magnification eye-pieces (up to 20X).



ESD arm stand

Standard Packages

● included ● available as optional

The optical heads of Motic's SMZ-171 come as **Binocular** or **Trinocular** versions with **45° viewing angle**, 10X eyepieces and a built-in 1X objective. The interlock eyepieces can be adjusted with an interpupillary distance from 48mm to 75mm. For special setups or OEM applications, a **Binocular head with 60° viewing angle** is available. The **anti-fungus treatment** of all optics allows the use of the SMZ-171 in humid environments.

Besides the variability in optical setup (auxiliary objectives, eyepieces), Motic offers a wide range of stands to be used with the SMZ-171. Both the **classic pole stands** (pole diameter 32mm) as well as the new arm stand are available **also in an ESD version** for electrostatic sensitive industries.



Modular Configuration

Besides the Base stands, the SMZ-171 also offers a **modular component system** for personal preferences and requirements regarding the workplace setup. **The industrial boom stands** for larger viewing samples may replace the Base Plain and transmitted light stands to significantly **increase user freedom**. All these stands require a separate illumination system following the requirements of the sample.



Illumination

Illumination is an integral part in the proper use of a stereo microscope. Motic offers a wide range of illumination options to be combined with the SMZ-171 optics. A **ring light** might be required for a **shadow-free image**, while the visualization of a surface structure may need a unidirectional illuminator by combining a cold light source with a light guide.

Description	SMZ-171-BP	SMZ-171-TP	SMZ-171-BLED	SMZ-171-TLED
SMZ-171 Binocular Head 45°	●		●	
SMZ-171 Binocular Head 60°	●		●	
SMZ-171 Trinocular Head 45°		●		●
Widefield 10X/23 eyepieces	●	●	●	●
Standard Stand - Pole version - Plain Stand	●	●		
Standard Stand - Pole version - Holder	●	●		
Standard Stand - Pole stand			●	●
Standard Stand - Arm Stand			●	●
ESD Stand - Pole version - Plain Stand	●	●		
ESD Stand - Pole version - Holder	●	●		
ESD Stand - Pole Stand			●	●
ESD Stand - Arm Stand			●	●
Incident Light - 3W LED			●	●
Transmitted Light - 3W LED			●	●



Standard Photomicrography

The adaption of a traditional single lens reflex camera (SLR), today mostly digital, requires a Trinocular version of the SMZ-171. The necessary **T2 adapter** is supplied by the respective camera manufacturer. This setup delivers **high resolution images of small fields**.

Digital Documentation

A more convenient setup is provided through **Motic's philosophy of easy image digitalization**. The combination of a SMZ-171 with a member of the Moticam Series of digital cameras delivers **excellent live images**. **All Motic cameras come equipped with software** to transform the SMZ-171 into an analysis and documentation workstation. The Trinocular SMZ-171 allows the use of **different camera adapters**, depending on the **chip size** of the camera in use.

Accessories

Gliding stage

A 360° rotatable gliding stage, for smooth multidirectional movement of the sample.

x/y-stage

An attachable x/y-stage with 76X54mm travel range enables a precise bidirectional movement.

Polarizer, Analyzer

To analyze the birefringence of transparent materials, a polarizing set-up is required.

Darkfield insert

The iris diaphragm allows variation of the illumination aperture according to the numerical aperture of the objective in use.

General Specifications

- Greenough Optical System
- Achromatic optics with anti-fungus treatment
- Widefield binocular/trinocular 45° observation tube (light distribution 0:100 left eyetube/trinotube in photo position)
- Widefield high eyepoint eyepieces, WF 10X/23 with diopter adjustment on eyepieces +/- 5dpt
- Interpupillary distance 48-75mm
- Zoom 6.7:1; 5 clickstops
- 7.5X-50X Standard magnification
- Working distance 110mm

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