

The SMZ168 Stereo Zoom microscope represents the top-of-the-line model in Motic's successful SMZ Series of stereo microscopes. Designed for a wide range of electronics, biological and material science applications, the SMZ168's optical quality and versatile accessories satisfy the most demanding users in both routine and research fields.

Features:

- Greenough optical system
- Large zoom range of 6.7:1, parfocal at all magnifications.
- Complete documentation station in combination with a Moticam camera
- 5-position click-stop magnification mechanism enables precise reproduction of magnifications, thus simplifying measurements.
- Impressive 3-dimensional upright image



SMZ 168-Series Standard Specifications

Model	SMZ-168-BP	SMZ-168-TLED	SMZ-168-INCP	SMZ-168-INCP-3MP
Optical System	Greenough Optical System			
Optics	Achromatic; Anti-fungus treatment			
Observation Tube	Widefield Binocular 35°	Widefield Trinocular 35°, light distribution 0:100 left eyetube/trinotube in photo position		
Eyepieces	Widefield high eyepoint, WF 10X/23 Diopter adjustment on both eyepiece tubes +/- 5dpt	Widefield high eyepoint, WF 10X/23 & 20X/13 Diopter adjustment on both eyepiece tubes +/- 5dpt		
Interpupillary distance	52-75mm			
Zoom Range	Zoom 6.7:1; 5 clickstops			
Standard Magnification	7.5X-50X	3.8X-200X		
Working distance	113mm	192 mm		
Auxiliary Lens	-	0.5X & 2X		
Stand	Pole type stand without illumination	Pole type stand with transmitted illumination and cold light input		
Incident illumination	-	3W LED with intensity control		
Transmitted illumination	-	3W LED with reflector and intensity control		
Focussing adjustment	-	50mm		
Dimensions	303x239x405mm	303x239x370mm		
Weight	6.0 Kg	6.8Kg		

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Scope of Supply

Description	SMZ-168-BP	SMZ-168-TLED	SMZ-168-INCP	SMZ-168-INCP-3MP
Binocular Zoom Body	●			
Trinocular Zoom Body		●	●	●
Head holder/focusing drive with incident light LED		●	●	●
Head holder/focusing drive without incident light	●			
Plain Stand (without transmitted light)	●			
Stand with transmitted light LED		●	●	●
Flourescent Ring Light			●	●
Extra Auxiliary Lenses(0.5X &2X) and 1 (20x) eyepiece			●	●
Manual X-Y Stage				●
3 MP Digital Camera Kit				●



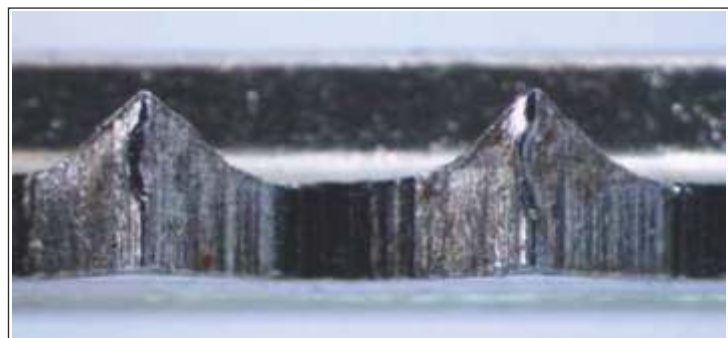
Zoom Range

Continous zoom allows changing from a macro sample overview down to viewing micro details easily. With one rotation of the zoom knob, the complete magnification range can be easily accessed. Five defined click-stop positions within this continuous zoom allow exact reproduction of magnification, a necessary precondition for precise measurements - especially for critical measurements done by reticules or digital cameras.

The standard configuration of a 6.7:1 zoom ratio enables a total magnification of 7.5X-50X. No need for re-adjusting the focus while changing the zoom position, the complete optical system is designed for parfocality through the complete zoom range. To increase the model's magnification range there is a selection of auxiliary objectives and eyepieces available.

3-D Image

Motic's SMZ168 is based on the Greenough Optical System, an optical concept proven for more than 100 years in microscope history. With separated optical paths for both eyes, the SMZ168 delivers **impressive 3-D images, distortion-free**, with an uncompromised high resolving power (220lp/mm in standard configuration).



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SMZ 168 Optical Data

Eyepiece	Zoom Position	Standard Objective		Auxiliary Objectives			
				0.5X		2X	
		WD 113mm		WD 192mm		WD 34.5mm	
		Mag.	F.N.(mm)	Mag.	F.N.(mm)	Mag.	F.N.(mm)
10X/23	0.75	7.5	30.7	3.8	61.3	15.0	15.3
	1	10.0	23.0	5.0	46.0	20.0	11.5
	2	20.0	11.5	10.0	23.0	40.0	5.8
	3	30.0	7.7	15.0	15.3	60.0	3.8
	4	40.0	5.8	20.0	11.5	80.0	2.9
20X/13	5	50.0	4.6	25.0	9.2	100.0	2.3
	0.75	15.0	17.3	7.5	34.7	30.0	8.7
	1	20.0	13.0	10.0	26.0	40.0	6.5
	2	40.0	6.5	20.0	13.0	80.0	3.3
	3	60.0	4.3	30.0	8.7	120.0	2.2
	4	80.0	3.3	40.0	6.5	160.0	1.6
	5	100.0	2.6	50.0	5.2	200.0	1.3



Illumination

The built-in illumination of the basic stands, provide the most compact and easy illumination options. However, for more demanding samples, a more powerful or variable solution may be required. We provide the option of a ring light for a shadow-free image.

- Color temperature: 6400K
- Even white light
- 12W Fluorescent



X-Y Stage with Rotatable Insert

An attachable X/Y-stage with 76X54mm travel range enables a precise bidirectional movement. A rotatable insert is available as an option.

- Base stand mountable
- Max X Distance: 76mm
- Max Y distance: 54mm



Auxiliary Objectives

The standard configuration of the SMZ168 has a working distance of 113mm, offering sufficient space for sample manipulation under the microscope. The maximum field diameter (with lowest zoom position and 10X eyepieces) will be 30.7mm.

To get a larger overview the customer may choose the following option

Auxiliary Objective	Magnification	W. D. (mm)	Max. Field diameter (with 10X eyepiece)
0.5X	3.8X	192	61.3mm

Higher magnifications can be achieved by using the following auxiliary objectives:

Auxiliary Objective	Magnification	W. D. (mm)	Max. Field diameter (with 10X eyepiece)
2X	100X	34.5	2.3mm

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Image Capturing & Digital Documentation - Moticam & Image Plus Software

The SMZ168-INCP-3MP Model includes a 3 Mega Pixel Digital Camera and Motic Image Plus Software for image capturing, analysis purposes. The combination of SMZ168 and Moticam delivers excellent live images,



Features:

- Live Resolution: 3.0 Mega Pixel
- Sensor type: CMOS
- Optical Calculation: 1/2"
- Focusable Lens: 16mm
- Software included: Motic Image Plus

Features of Motic Image Plus Software:

- Capture
- Auto Capture
- Video Recording
- Measurements
- Automated Counting
- Creating Reports
- Image Comparison
- Amalgamation

Motic Image Analysis Software Measures distance, Circle, Angle, Diameter etc.

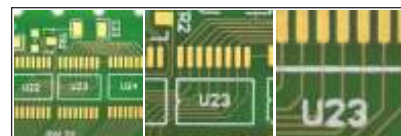
Another strength of SMZ168 Digital USB Video Microscope is its Image Analysis Software. Supplied Software makes the job of taking measurements very easy. Measurement functions include line distance, radius, diameter, circumference, area of circle and angle etc.



Main Menu of software screen with various measurements

Real Time Controls for image and video:

- Brightness
- Contrast
- Gamma
- Hue
- Saturation
- Sharpness
- Snapshot Size
- USB Bandwidth
- Exposure
- White Balance



Snap shots of a PCB at different magnifications

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