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SHUNYU

NINGBO SUNNY
INSTRUMENTS CO.,LTD.

SZ Series Zoom Stereo Microscope

SZ45



- Excellent optical performance and image quality
- Big zoom ration , high resolution and third dimension
- Long working distance, easy to operate



As technical improvement, manufacturer has right to make renovation in designing without notice

SUNNY INSTRUMENTS CO.
is certified by
ISO 9001
ISO 14001
ISO 13485

SZ Series Zoom Stereo Microscope

Provide high quality optical system and stable operation system. Complete accessories and diversified combination specification. To meet high-precision requirements on modern biology, medicine, scientific research, inspection lines in modern electronics and other technology industry.



SZ45-ST2

SZ45-ST1

SZ45-BL1



SZ45-STL2

Functions and Characteristics

- High quality optical components coated with special film, build a high-quality optical system.
- Formed flat and good contrast image in a large visual field, especially in the peripheral, it is more bright and clear.
- Zoom objective lens 0.67X~4.5X (6.7:1), standard magnification 6.7X~45X. Use optional auxiliary lens, the magnification can be 2X~225X.
- The standard working distance is 100mm, with optional auxiliary lens, the working distance can extend to 26mm~287mm, to create enough space for the user.
- Viewing head 45° or 60° inclined, diopter adjustable in two tube, ensure users of different visions to get clear images.
- Ergonomic design, and the best height of the eyepoint, make you tireless after long time operation.
- The zoom hand wheel (axial) bilateral settings, easy operation, high precision zoom repeat.
- A variety of accessories, expand application areas

Specifications

Magnification	Standard: 6.7X~4.5X. Using optional eyepiece and auxiliary lens, it can extend to 2X~225X		
Objective	Zoom objective lens 0.67X~4.5X (6.7:1)		
Viewing Head	45° or 60° inclined, 360° rotatable, inter-pupillary range 54~76mm, both sides diopter adjustable(± 5mm), binocular or trinocular		
Eyepiece	Standard: 10X/22mm, large field, wide angle, high eyepoint, to facilitate the user who wear glasses		
Optional Eyepiece	15X/16mm, 20X/10mm, 25X/9mm (All can be mounted the reticle)		
Working Distance	Standard:100mm, using optional auxiliary lens can expand to 26mm~287mm		
Auxiliary Lens	Optional: 0.3X/287mm, 0.4X/217mm, 0.5X/177mm, 0.75X/117mm, 1.5X/117mm, 2X/26mm		
Focus	Two focusing knobs is tension adjustable, adjustment range 50mm		
Top Illuminator	Halogen bulb 12V/15W oblique lighting High brightness LED oblique lighting	Independent top/bottom illuminator switch, both with continuous brightness adjustment, and the brightness is stable	
Bottom Illuminator	Transmitted halogen bulb 12V/15W		
	Transmitted fluorescent bulb 230V/7W		
	Transmitted high brightness LED		
Photo Tube & TV Adapter	Special C-mount adapter, can connect with common camera, digital camera, simulate CCD and digital CCD		

Optical Parameter

● Eyepiece: wide-field eyepiece Working distance: effective working distance

Objective	0.3X	0.4X	0.5X	0.75X	1X	1.5X	2.0X
Working distance (mm)	287mm	217mm	177mm	117mm	100mm	47mm	26mm
10X	Magnification	2.0X~13.5X	2.7x~18.0x	3.4x~22.5x	5.0x~33.8x	6.7x~45.0x	10.1x~67.5x
	View Field (mm)	109.5~16.3	82.1~12.2	65.7~9.8	43.8~6.5	32.8~4.9	21.9~3.3
15X	Magnification	3.0X~20.3X	4.0x~27.0x	5.0x~33.8x	7.5x~50.6x	10.1x~67.5x	15.1x~101.3x
	View Field (mm)	79.6~11.9X	59.7~8.9	47.8~7.1	31.8~4.7	23.9~3.6	15.9~2.4
20X	Magnification	4.0x~27.0x	5.4x~36.0x	6.7x~45.0x	10.1x~67.5x	13.4x~90.0x	20.1x~135.0x
	View Field (mm)	59.7~8.9	44.8~6.7	35.8~5.3	23.9~3.6	17.9~2.7	11.9~1.8
25X	Magnification	5.0x~33.8x	6.7x~45.0x	8.4x~56.3x	12.6x~84.4x	16.8~112.5x	25.1x~168.8x
	View Field (mm)	44.8~6.7	33.6~5.0	26.9~4.0	17.9~2.7	13.4~2.0	9.0~1.3

Focus Arm



SZA1

Standard focus arm

Plane focus arm, focused by rack and pinion with ball bearing guide
Focusing range: 50mm Pillar size: ϕ 32mm
Drawtube size: ϕ 76mm
Centers' distance: 150mm(the pillar's to the drawtube's)
Suit for following stands: SZ-ST2, SZ-ST3,B5, SZ-STL1 or SZ-STL2
Including holes for fixing illuminator holder
SZ-PD1 or SZFH1



SZA2

Focus arm NO.1 for industry machines

Plane focus arm, focused by dovetail rack mechanism
Focusing range: 50mm
Pillar size: ϕ 24.5mm
Drawtube seize: ϕ 76mm
Connector diameter: ϕ 18mm

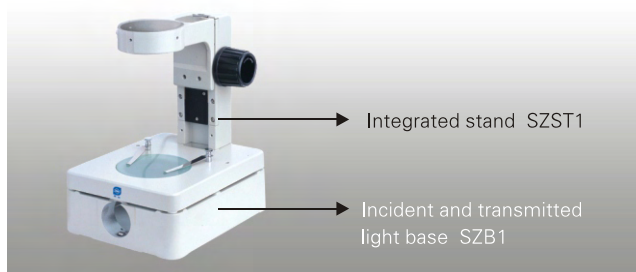


SZA3

Focus arm NO.2 for industry machines

Plane focus arm, focused by rack and pinion with ball bearing guide
Focusing range: 50mm
Drawtube seize: ϕ 76mm
Connector diameter: ϕ 18mm

Base and Stand



Integrated stand

Fixed type focusing mechanism with rack and pinion and ball bearing guide. Tension adjustment can be freely changed by two focusing knobs. Focusing range 114mm, can be matched with SZB1. The base includes clips and ϕ 100mm white/black plate. Post height: 187mm. Drawtube size: ϕ 76mm. Focusing bracket: range 117mm. Stage size: 230mmX180mmX26mm.

Incident and transmitted light base

Used with SZ-ST1. Built-in condenser and adjustable mirror. With the hole to install oblique illuminator SZ-L1. Stage size: 230mmX180mmX61mm.



Large rectangular stand

Used with SZA1 focus arm. The base includes clips and ϕ 100mm white/black plate. Post height: 248mm, Diameter: ϕ 32mm. Stage size: 260mmX320mmX12mm.



Pillar style transmitted light stand

Used with SZA1 focus arm. The base includes clips and ϕ 100mm glass plate. Bottom illuminator: 12V/15W halogen bulb, brightness-adjustable. Post height: 248mm, Diameter: ϕ 32mm. Stage size: 240mmX240mmX73mm.



Pillar style LED transmitted light stand

Used with ST70A1 focus arm. Built-in wide range voltage 110V~240V, top and bottom high brightness LED illuminator. Uniform lighting, independent switch and adjustment, secure low voltage, low power consumption, small heat and long life. Ergonomic design, better stability. Post height: 280mm, Diameter: ϕ 32mm. Stage size: 303mmX290mmX47mm.



Single armed pillar stand

Expand your working area, the objective can be observed at any angle in any direction and can be used with all standard focus arms. Vertical post height: 380mm. Diameter: ϕ 32mm. Focus post height: 104mm. Diameter: ϕ 32mm. Horizontal moving range: 235mm. Stage size: 230mmX230mmX40mm.



Double armed pillar stand

Double armed, better stability for observing. Can be used with all standard focus arms. Vertical post height: 380mm. Diameter: ϕ 32mm. Focus post height: 140mm. Diameter: ϕ 32mm. Horizontal moving range: 235mm. Stage size: 210mmX260mmX20mm.

Auxiliary Lens



Expand the magnification from the standard 6.7X~45X to 2X~225X. There are 0.3X, 0.4X, 0.5X, 0.75X, 1.5X and 2X for option.

Darkfield condenser and gem clamp



Observe the jewelry and precious stones. Used with SZST3, BL1, BL3 stand.

Illuminators



LY220-8

Fluorescent ring light

Can be mounted under the drawtube with special adapter. Small heat, uniform light and long life. Good look, a little space and easy to install. High brightness fluorescent ring light 220V/8W.



SZ-L1/SZ-T1/SZFH1/SZPD1

Outlay oblique illuminator

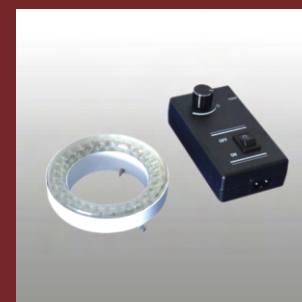
SZL1: Reflected illuminator, 12V/15W halogen bulb. SZ-T1: Transformer, to be used with SZML1. SZFH1: Reflected light holder. SZPD1: Reflected light connector.



RLP/SLP/DLP

Code light source

Small size, low weight, high efficiency. Stable voltage output makes halogen bulb work stable and long life. 150W, color temperature 3200K, built-in infrared filter, no heat in lighting area.



LLED

LED illuminator

Low power consumption, small heat and long life. Small size, brightness adjustable. No flicker, no change in color temperature when changing brightness. Wide-voltage design, overcoming the defect of other illuminators' high requests of light source.

Photo Tube & TV Adapter (used with SZ series trinocular head)



SZCTV

Digital CCD accessories

Special C-mount, the images could be directly output to the computer or projector by digital video signals.



SZDM

Digital Camera accessories

Made up by special C-mount and relay mirror.



SZPH

Photo accessories

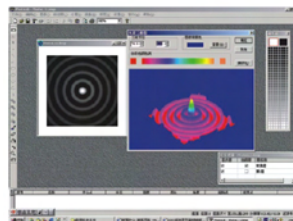
Made up by photo tube, photo eyepiece and PK/MD mount.



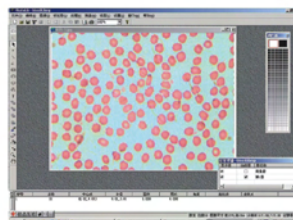
SZCTV

Simulate CCD accessories

Special C-mount for connection, the images output by video signals to the TV or monitor. Used with A/D converter with USB, the images would be output to the computer by digital video signals. Special C-mount and video capture, make images output to the computer or projector by digital video signals.



- 3D Simulation

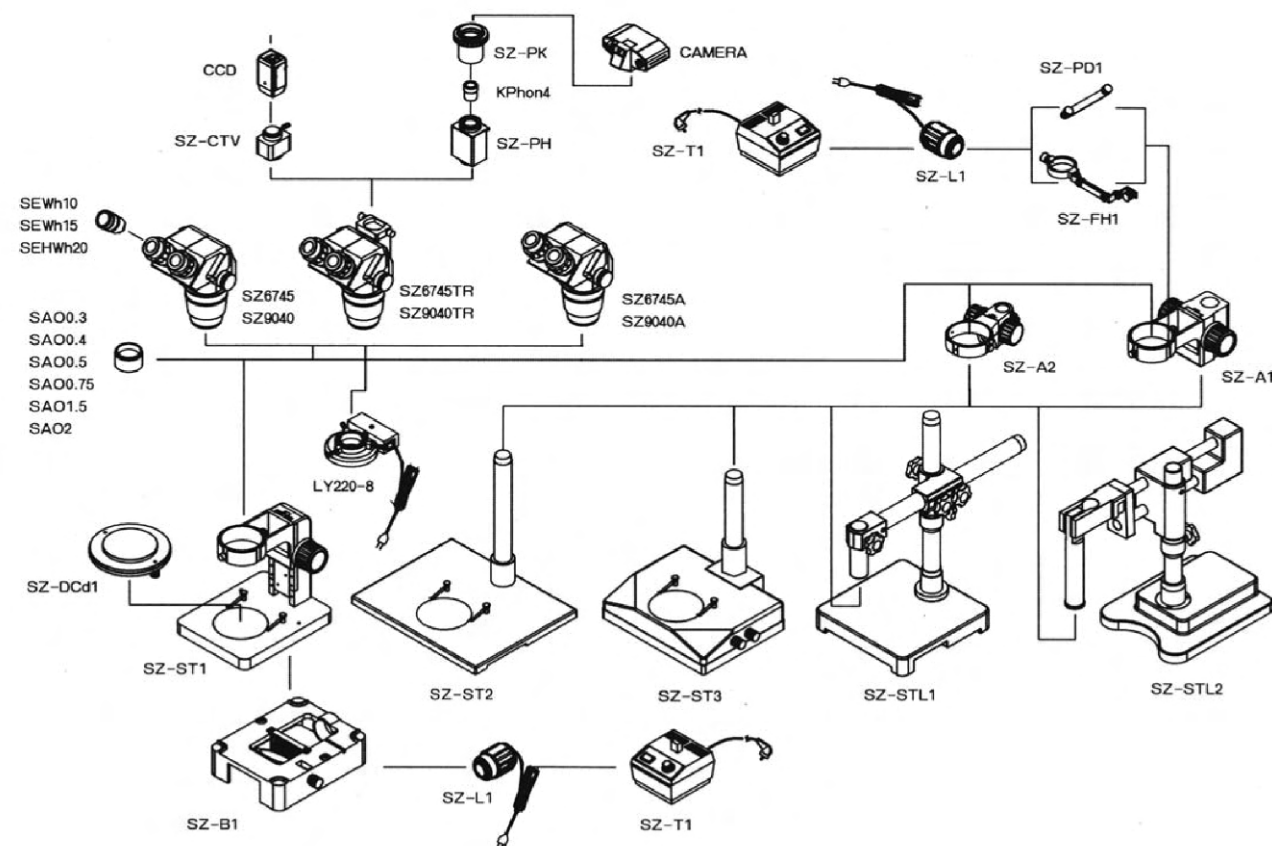


- Quantitative Analysis

SoftwareSunny Photolib

Function	<p>1.Support TWAIN standard scanners, digital cameras and a variety of image acquisition cards</p> <p>2.The up to date programming tools, best performance with pictures and words</p> <p>3. More than one hundred functions of professional image processing and analysis. Including: color adjustment, image deformation, digital form processing, image enhancement, texture analysis, feature identification and so on</p> <p>4.Support 24 bit true color image acquisition, processing and analysis of color models like RGB, CMYK, HSV and YUV</p> <p>5.Advanced particle auto-identification system, distinguishing adhesive particles automatically</p> <p>6.Geometric measurement, automatic quantitative analysis, with all kinds of common parameters</p>
Operation systems	Support WIN95,Win98,WIN2000 and WINXP

SZ Series Zoom Stereo Microscope System Diagram



SZ Series Zoom Stereo Microscope Specifications

Specification		Model				Order No.
Parts	Description	SZ45-ST1	SZ45-ST2	SZ45	SZ45-STL2	
Eyepiece	WF10X/22mm	●●	●●	●●	●●	SZEWh10X22
	WF10X/22mm with reticle	○	○	○	○	SZEWh10X22r
	WF15X/16mm	○○	○○	○○	○○	SZEWh15X16
	WF20X/12mm	○○	○○	○○	○○	SZHEWh20X10
	WF25X/9mm	○○	○○	○○	○○	SZEHWh25X9
Eye-cap		●●	●●	●●	●●	SZCAP
Binocular head	Sz6745 45° inclined	●	●	●	●	SZ6745
	SZ9040 45° inclined	/	/	○	/	SZ9040
	SZ6745 60° inclined	/	/	○	/	SZ6745A
	SZ9040 60° inclined	/	/	○	/	SZ9040A
Trinocular head	SZ6745TR 45° inclined	/	/	○	/	SZ6745TR
	SZ9040TR 45° inclined	/	/	○	/	SZ9040TR
	SZ6745TR 60° inclined	/	/	○	/	SZ6745ATR
	SZ9040TR 60° inclined	/	/	○	/	SZ9040ATR
Auxiliary objective	0.3X/287mm,0.4X/217mm,0.5X/177mm	○	○	○	○	SAO0.3/0.4/0.5
	0.75X/117mm,1.5X/47mm,2X/26mm	○	○	○	○	SAO0.75/1.5/2
Standard focus arm	SZM-A1	/	/	/	/	SZMA1
	SZ-A1	/	●	●	●	SZA1
	ST70A1	/	/	○	/	ST70A1
Industry focus arm	SZA2, SZA3	/	/	/	/	SZA2/SZA3
Stand	SZST1	●	/	○	/	SZST1
	SZST2	/	●	○	/	SZST2
	SZMST1	/	/	○	/	SZMST1
	B4	/	/	○	/	B4
	B5	/	/	○	/	B5
	B6	/	/	○	/	B6
	SZST3	/	/	●	/	SZST3
	SZMST2	/	/	○	/	SZMST2
	SZMST3	/	/	○	/	SZMST3
	BL1	/	/	○	/	BL1
	BL3	/	/	○	/	BL3
	SZ-STL1	/	/	○	/	SZSTL1
	SZ-STL2	/	/	○	●	SZSTL2
	SZ-B1	○	/	○	/	SZB1
Transformer	SZ-T1	○	○	○	○	SZT1
Epi-illuminator	SZML1	/	/	○	/	SZML1
	SZ-L1	○	○	●	○	SZL1
	ST70L1	/	/	○	/	ST70L1
Illuminator holder	SZFH1/ SZPD1	○	○	○	○	SZFH1/SZPD1
Photo accessories	SZPH(photo tube, 4X photo eyepiece and PK/C mount)	/	/	○	/	SZPH
Digital camera accessories	C-mount and relay mirror	/	/	○	/	SZDM
C-mount adapter	1/2"C-mount adapter	/	/	○	/	SZCTV(1/2)
	1/3"C-mount adapter	/	/	○	/	SZCTV(1/3)
Dark field condenser	SZ-DCd1	/	/	○	/	SZDCd1
Gem clamp	S/ST-GC	/	/	○	/	S/STGC
Dust proof	SZDCL	○	○	○	○	SZDCL
Rotatable stage	SZMSGR	○	○	○	/	SZMSGR
Measurement stage	SZMSGM1 (0~25mm/150X150mm)	○	○	○	/	SZMSGM1
Ring light	220V/110V, 8W	○	○	○	○	LY220-8
Ring LED light	36pcs/40pcs/54pcs	○	○	○	○	22ED36/40/54
Code light source	Ring light tube	○	○	○	○	RLP
	Double light tube	○	○	○	○	DLP
	Single light tube	○	○	○	○	SLP

"●"Standard specifications "○"Optional parts;