

## BS-2190A Inverted Biological Microscope



BS-2190A



BS-2190AF

### Introduction

BS-2190A series Inverted Biological Microscopes are specially designed for observation of cell tissues culture and can be used to observe cell growth processes, tissue contours and internal structures. Optional professional fluorescence attachment can be used to observe autofluorescence phenomena in cells, fluorescence transfection, protein transfer and other fluorescence phenomena of biological cells.

With innovative infinite optical system and ergonomic design, the microscopes have excellent optical performance and easy to operate features. The microscopes have smooth and comfortable operation, they could be used for medical and health units, universities, research institutes to observe cultured living cells and tissues.

### Feature

1. Color corrected infinite optical system, excellent optical performance and great images.
2. Application of high-contrast and low chromatic phase contrast observation, access to detailed examination of internal structure of the cells.
3. Supply long working distance and high N.A. objectives to get the flat and clear images.
4. Long working distance condenser has capacity to use revolution bottle and suitable for many sample petri-dishes.
5. Well-designed body structure, steady and reliable and better anti-vibration performance.
6. Low position coaxial coarse and fine adjustment, ergonomic design.
7. Professional vertical fluorescent technology, to get clear and bright fluorescent images.
8. Long working distance infinite plan achromatic objective, phase contrast objective and fluorescent objectives are available.



Long working distance infinite plan and phase contrast achromatic objective



Long working distance fluorescent infinite plan and semi-APO phase contrast objective

## Application

BS-2190A series inverted microscopes can be used by medical and health units, universities, research institutes for observations of micro-organisms, cells, bacteria and tissue cultivation. They can be used for continuous

observation of process of cells, bacteria grow and divide in the culture medium. Videos and images can be taken during the process. These microscopes are widely used in cytology, parasitology, oncology, immunology, genetic engineering, industrial microbiology, botany and other fields.

## Specification

Item	Specification	BS-2190A	BS-2190AF	
Optical System	Infinite Optical System, Tube Length 180mm, Parfocal Distance 45mm	●	●	
Viewing Head	45° inclined Seidentopf trinocular head, diopter adjustment on left eyepiece tube, inter-pupillary range: 50-76mm, eyepiece: trinocular=80:20,100:0, Eyepiece Tube Diameter 30mm	●	●	
	45° inclined Seidentopf binocular head, diopter adjustment on left eyepiece tube, inter-pupillary range: 50-76mm, Eyepiece Tube Diameter 30mm	○	○	
Eyepiece	High eye-point wide field plan eyepiece PL10×/22mm	●	●	
	High eye-point wide field plan eyepiece PL10×/22mm with eyepiece micrometer	○	○	
	High eye-point wide field plan eyepiece PL15×/16mm	○	○	
Objective (Parfocal distance 45mm, RMS (20.32x 0.706mm))	Infinite LWD Plan Achromatic Objective	4× /0.13, WD=10.75mm	○	○
		10×/0.25, WD=7.45mm	○	○
		20×/0.40, WD=6.92mm	○	○
		40×/0.65, WD=2.74mm	○	○
		60×/0.70, WD=1.28mm	○	○
	Infinite LWD Plan Phase Contrast Achromatic Objective	PH4×/0.13, WD=10.75mm	●	○
		PH10×/0.25, WD=7.45mm	●	●
		PH20×/0.40, WD=6.92mm	●	○
		PH40×/0.65, WD=2.74mm	●	○
	Infinite LWD Plan Fluorescent Objective	Fluor 4×/0.13, WD=18.95mm	○	●
		Fluor 10×/0.30, WD=7.27mm	○	●
		Fluor 20×/0.45, WD=6.03mm	○	○
		Fluor 40×/0.65, WD=1.79mm	○	○
		Fluor 60×/0.75, WD=1.28mm	○	○
	Infinite LWD Semi-APO Plan Phase Contrast and Fluorescent Objective	FL PH20×/0.45, WD=6.12mm	○	●
FL PH40×/0.65, WD=1.79mm		○	●	
Centering Objective	Fluorescent centering objective	○	●	
Nosepiece	Inward Quintuple Nosepiece	●	●	
	Inward Quadruple Nosepiece	○	○	
Condenser	N.A. 0.3 LWD Condenser, Working Distance 72mm, detachable	●	●	
Telescope	Centering Telescope(Φ30mm): used to adjust the center of phase annulus	●	●	
Phase Annulus	4×, 10×-20×, 40× Phase Annulus Plate (center adjustable)	●	●	
Stage	Stage 160 (X)×250(Y) mm fixed stage with glass insert plate (Φ110mm)	●	●	
	Attachable Mechanical Stage, X-Y Coaxial Control, Moving Rang: 120(X)×80(Y) mm	○	●	
	Extension stage, used to extend the stage	○	●	

	Terasaki Holder: used for $\Phi$ 35mm Petri Dish Holder and $\Phi$ 65mm petri dishes ( $\Phi$ 65mm and 56 $\times$ 81.5mm)	○	●
	Glass Slide Holder and Petri Dish Holder ( $\Phi$ 54mm and 26.5 $\times$ 76.5mm)	○	●
	Petri Dish Holder $\Phi$ 35mm	●	●
	Metal plate $\Phi$ 12mm (water drop type)	○	○
	Metal plate $\Phi$ 25mm (water drop type)	●	○
	Metal plate (kidney type)	○	●
Focusing	Coaxial Coarse and Fine Adjustment, tension adjustment knob, Fine Division 0.002mm, Fine stroke 0.2mm per rotation, Coarse stroke 37.5mm per rotation. Moving Range: 9mm, focal plane up 6.5mm, down 2.5mm	●	●
Transmitted Illumination	6V/30W long working life halogen lamp(Philips), Pre-centered, Brightness Adjustable	●	●
EPI-Fluorescent Attachment	EPI fluorescent attachment, 3-position for fluorescent filters, 1-position for bright field	○	●
	Lamp house for mercury lamp, center adjustable	○	●
	Power supply box for mercury lamp, input voltage 100-240V AC	○	●
	100W mercury (ORSAM)	○	●
	Eyes Protective Plate, used to prevent harm from fluorescent light	○	●
	B1 fluorescent filter (band-pass type)	○	●
	G1 fluorescent filter (band-pass type)	○	●
	V1 fluorescent filter (band-pass type)	○	○
Filters for Transmitted Illumination	Green filter ( $\Phi$ 45mm)	●	●
	Blue filter ( $\Phi$ 45mm), only used for halogen illumination	●	●
	IR filter ( $\Phi$ 45mm)	○	○
ND Filter	ND25 filter (25% light transmittance)	○	●
	ND50 filter (50% light transmittance)	○	○
C-mount Adapter	0.35 $\times$ C-mount Adapter (focus adjustable, could not work with fluorescent microscope)	○	
	0.5 $\times$ C-mount Adapter (focus adjustable)	○	○
	0.65 $\times$ C-mount Adapter (focus adjustable)	○	○
	1 $\times$ C-mount Adapter (focus adjustable)	○	○
Trinocular Tube	Trinocular Tube $\Phi$ 23.2mm, used to connect camera	○	○
Other Accessories	Allen wrench, M3 and M4, 1pc each	●	●
	Fuse, T250V500mA	●	●
	Dust cover	●	●
Packing	1 cartons/set, Packing Size: 80cm $\times$ 57cm $\times$ 31cm, Gross Weight: 13kgs, Net Weight: 9kgs	●	
	1 cartons/set, Packing Size: 80cm $\times$ 57cm $\times$ 60cm, Gross Weight: 26kgs, Net Weight: 20kgs		●

Note: ● Standard Outfit, ○ Optional

Sample Images

