BS-2094 Inverted Biological Microscope

BS-2094A   BS-2094B

Introduction

BS-2094 Series Inverted Biological Microscope are high level microscopes which are specially designed for medical and health units, universities, research institutes to observe cultured living cells. With innovative infinite optical system and ergonomic design, they have excellent optical performance and easy to operate features. The microscopes have adopted long life LED lamps as transmitted and fluorescent light source. Digital cameras can be added to the microscope on left side to take photos, videos and make measurement.

The main difference between BS-2094A and BS-2094B is that BS-2094B has an intelligent illumination management system, the illumination intensity will automatically change after you change the objectives and make the microscope to get the best illumination effect, BS-2094B also has a LCD screen to show the working mode like magnification, light intensity, transmitted or fluorescent light source, working or sleep etc.

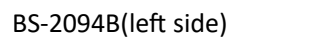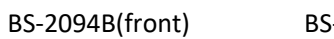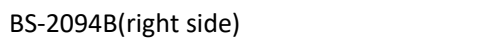BS-2094A(left side)   BS-2094A(front)   BS-2094A(right side)

BS-2094B(left side)   BS-2094B(front)   BS-2094B(right side)

Feature

1. Excellent infinite optical system, Φ22mm wide field eyepiece, 45° inclined viewing head, more comfortable for observation.

2. Camera port is on left side, less disturb for operation. Light distribution (both): 100 : 0 (100% for eyepiece); 0 : 100 (100% for camera).

3. Long working distance condenser N.A. 0.30, Working distance: 75mm(with condenser), Working distance: 187mm (without condenser), available for extra high culture dishes. Condenser is detachable, without condenser, it is suitable for culture flask.

4. Large size stage, convenient for research. Stage Size: 170mm(X) × 250 (Y)mm, Mechanical stage moving range: 128mm (X) × 80 (Y)mm. 6 types of petri-dish holders are available.
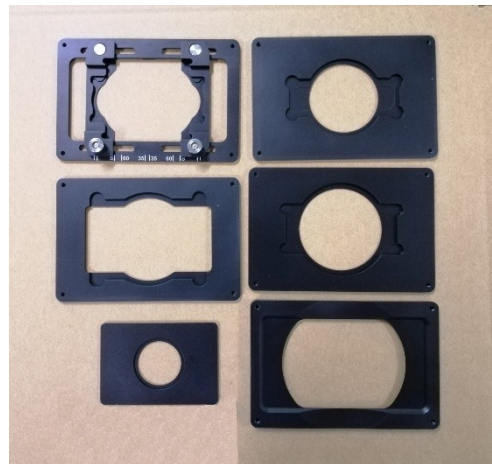
5. BS-2094B has an intelligent illumination management system.

(1) Coded Quintuple Nosepiece can memorize the illumination brightness of each objective. When different objectives are converted to each other, the light intensity is automatically adjusted to reduce visual fatigue and improve work efficiency.
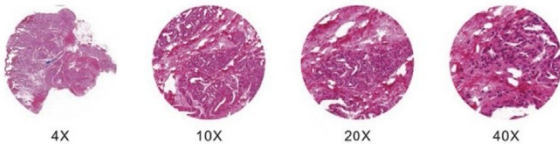
(2) Use a dimming knob to achieve multiple functions.

Click: Enter standby(sleep) mode

Double click: light intensity lock or unlock

Rotation: Adjust brightness

Press + clockwise rotate: Switch to the transmitted light source

Press + contrarotate: Switch to the fluorescent light source

Press 3 seconds: Set the time of turning off the light after leaving

(3) Display microscope working mode.

The LCD screen in the front of the microscope can display the working mode of the microscope, including magnification, light intensity, sleep mode and so on.

   Start& working   Lock mode   Turn off the light in 1 hour   Sleep mode

6. The microscope body is compact, stable and suitable for clean bench. The microscope body has been coated with anti-UV material and can be placed into the clean bench for sterilization under UV lamp.

7. Phase Contrast, Hoffman Modulation Phase Contrast and 3D Emboss Contrast observation method are available with transmitted illumination.

(1) Phase contrast observation is a microscopic observation technique that produces a high-contrast microscopic image of a transparent sample by utilizing a change in refractive index. The advantage is that the details of live cell imaging can be obtained without staining and fluorescent dyes.

Application range: Living cells culture, Micro-organism, Tissue slide, cell nuclei and organelles etc.
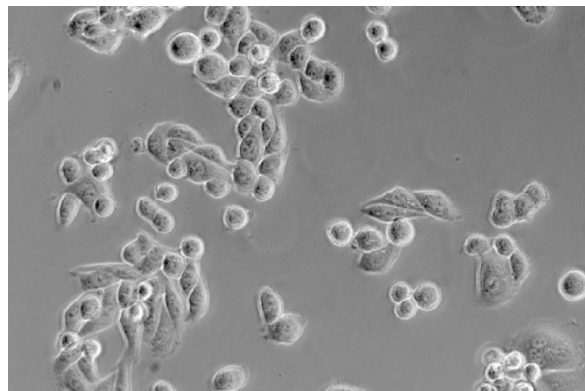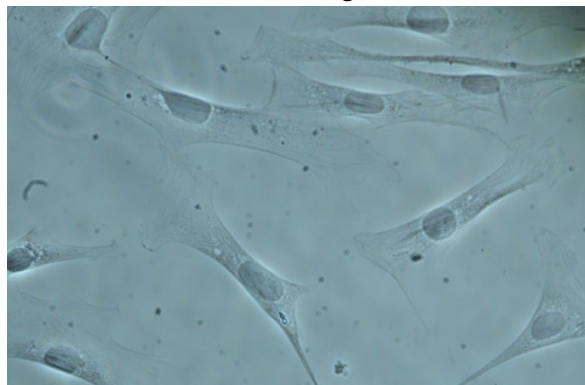
(2) Hoffman Modulation Phase Contrast. With slant light, Hoffman phase contrast changes phase gradient into light intensity variety, it can be used to observe unstained cells and living cells. Giving 3D effect for thick samples, it can greatly reduce the halo in thick specimens.

(3) 3D Emboss Contrast. No need for expensive optical components, just add a contrast adjustment slider to achieve a pseudo 3D glare-free image. Both glass culture dishes or plastic culture dishes can be used.
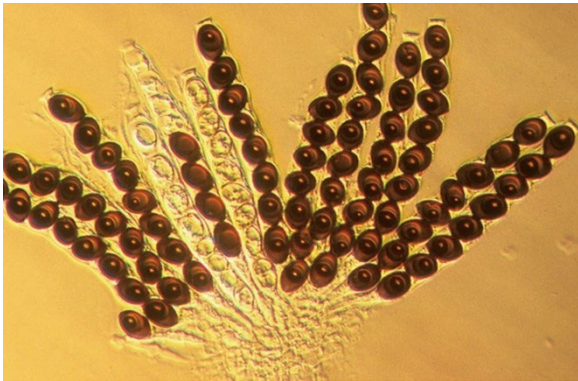
With Hoffman Modulation Phase Contrast

With 3D Emboss Contrast

8. LED Fluorescent attachment is optional.

(1) LED light makes fluorescent observation easier.

Fly-eye lens and Kohler illumination have provided a uniform and bright field of view, which is benefit to get high definition images and perfect details. Compared with traditional mercury bulb, the LED lamp has much longer working life, it saves money and has greatly improved the working efficiency. The problems of preheating, cooling and high temperature of mercury lamp has also been solved.

(2) Suitable for a variety of fluorescent dyes.

The LED fluorescent attachment has equipped with 3 fluorescent filter blocks, it can be applied to a wide range of dyes and capture clear high contrast fluorescence images.
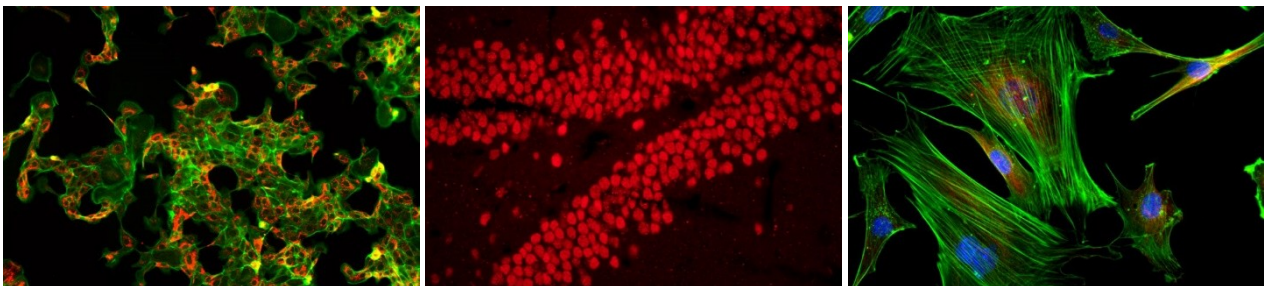
Breast cancer   Hippocampus   Mouse brain nerve cells
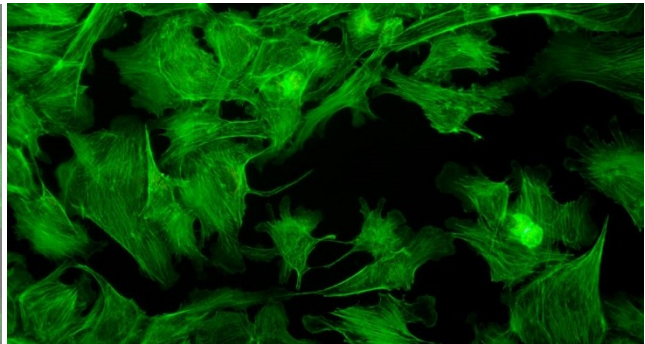
(3) Light barrier plate(contrast shield).

The light barrier plate can be attached to the condenser and effectively block the external light, increase the contrast of the fluorescent image and provide a high quality fluorescent image. When need phase contrast observation, the light barrier plate is very convenient to be removed from the light path, avoiding influence on the

quality of phase contrast.
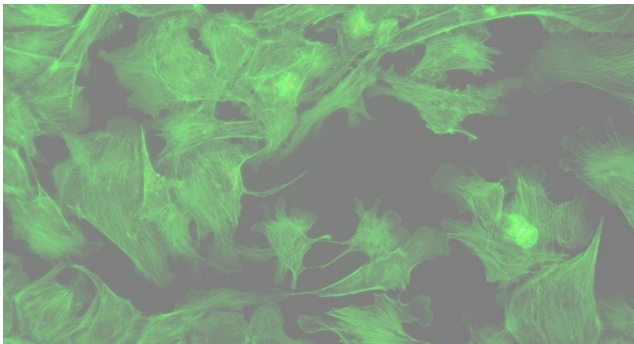
Without Contrast barrier plate   With Contrast barrier plate

Application

BS-2094 series inverted microscopes are 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.
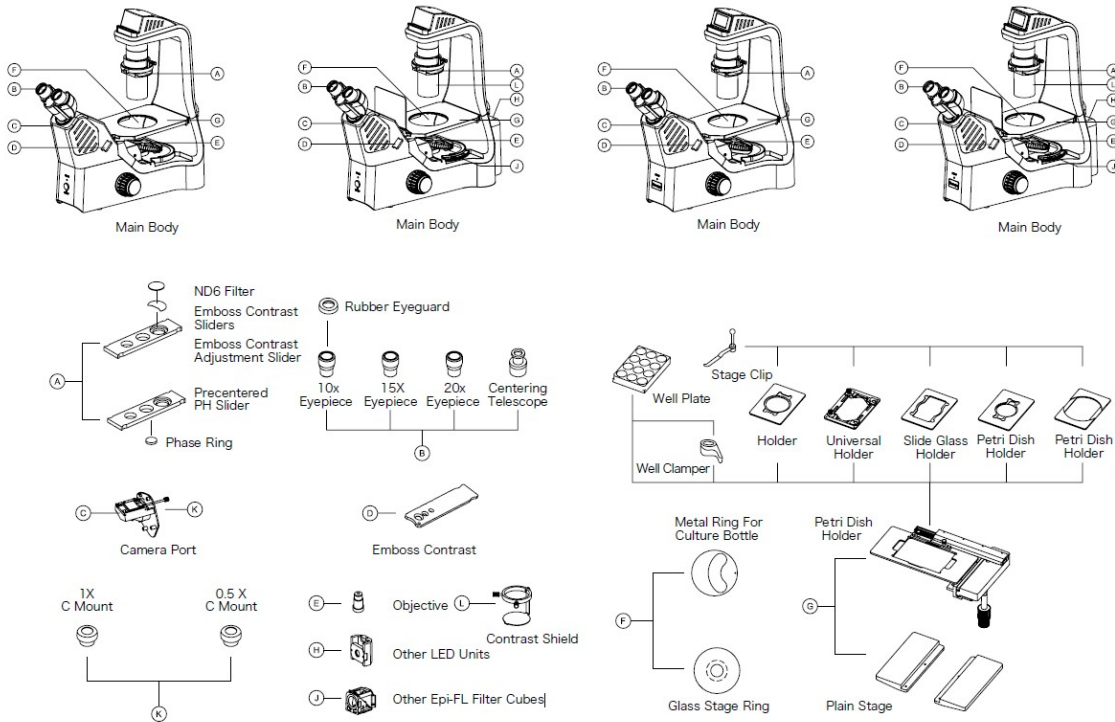
Specification

Item	Specification		BS-2094 A	BS-2094 AF	BS-2094 B	BS-2094 BF
Optical System	NIS 60 Infinite Optical System, Tube length 200mm		●	●	●	●
Viewing Head	Seidentopf Binocular Head, Inclined at 45°, Interpupillary Distance 48-75mm, Left side camera port, Light distribution: 100: 0 (100% for eyepiece), 0:100 (100% for camera), Eyepiece Tube Diameter 30mm		●	●	●	●
Eyepiece	SW10×/ 22mm		●	●	●	●
	WF15×/ 16mm		○	○	○	○
	WF20×/ 12mm		○	○	○	○
Objective	NIS60 Infinite LWD Plan Achromatic Objective (Parfocal distance 60mm, M25×0.75)	4×/0.1, WD=30mm	●	●	●	●
	NIS60 Infinite LWD Plan Phase Contrast Achromatic Objective (Parfocal distance 60mm, M25×0.75)	PH10×/0.25, WD=10.2mm	●	●	●	●
		PH20×/0.40, WD=12mm	●	●	●	●
		PH40×/0.60, WD=2.2mm	●	●	●	●
Nosepiece	Quintuple Nosepiece		●	●		
	Coded Quintuple Nosepiece				●	●
Condenser	Long Working Distance Condenser, N.A. 0.3, Working Distance 75mm (with condenser), 187mm (without condenser)		●	●	●	●
Telescope	Centering Telescope: used to adjust the center of phase annulus		●	●	●	●
Phase Annulus	10×-20×-40× Phase Annulus Plate (center adjustable)		●	●	●	●
	4× Phase Annulus Plate		○	○	○	○

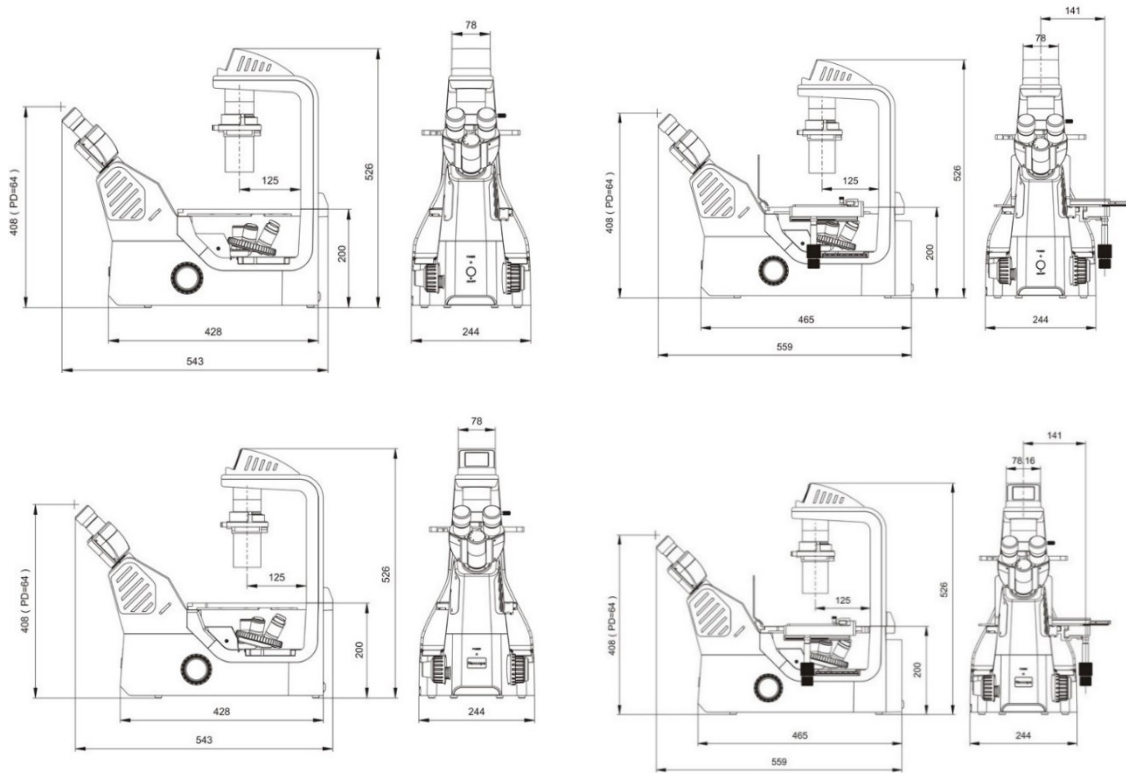|					
Stage	Stage 170 (X)×250(Y) mm with glass insert plate (diameter 110mm)	●	●	●	●
	Attachable Mechanical Stage, X-Y Coaxial Control, Moving Rang: 128mm×80mm, accept 5 types of petri-dish holders, well plates and stage clips	●	●	●	●
	Auxiliary stage 70mm×180mm, used to extend the stage	○	○	○	○
	Universal Holder: used for Terasaki plate, glass slide and Φ35-65mm petri dishes	●	●	●	●
	Terasaki Holder: used for Φ35mm Petri Dish Holder and Φ65mm petri dishes	○	○	○	○
	Glass Slide and Petri Dish Holder Φ54mm	○	○	○	○
	Glass Slide and Petri Dish Holder Φ65mm	○	○	○	○
	Petri Dish Holder Φ35mm	○	○	○	○
	Petri Dish Holder Φ90mm	○	○	○	○
Focusing	Coaxial Coarse and Fine Adjustment, tension adjustment, Fine Division 0.001mm, Fine stroke 0.2mm per rotation, Coarse stroke 37.5mm per rotation. Moving Range: up 7mm, down 1.5mm; Without limitation can up to 18.5mm	●	●	●	●
Transmitted Illumination	3W S-LED, Brightness Adjustable	●	●		
	3W S-LED Koehler illumination, Brightness Adjustable			●	●
EPI-Fluorescent Attachment	LED illuminator, built-in Fly-eye lens, can be configured with up to 3 different fluorescence blocks; B, B1, G, U, V, R fluorescent filters are available	○	○	○	○
Hoffman phase contrast	Hoffman Condenser with 10×, 20×, 40× insert plate, centering telescope and special objective 10×, 20×, 40×	○	○	○	○
3D Emboss Contrast	Main emboss contrast plate with 10×-20×-40× will be inserted into condenser	○	○	○	○
	Auxiliary emboss contrast plate will be inserted into slot which is near viewing head	○	○	○	○
C-mount Adapter	0.5× C-mount Adapter (focus adjustable)	○	○	○	○
	1× C-mount Adapter (focus adjustable)	○	○	○	○
Other Accessories	ECO function: will turn off after 15 minutes if no user	○	○	○	○
	Warm stage	○	○	○	○
	Light barrier plate(contrast shield), can be attached to the condenser and block the external light	○	○	○	○
	Dust cover	●	●	●	●
Power Supply	AC 100-240V, 50/60Hz	●	●	●	●
Fuse	T250V500mA	●	●	●	●
Packing	2cartons/set, Packing Size: 47cm×37cm×39cm, 69cm×39cm×64cm Gross Weight: 20kgs, Net Weight: 18kgs	●	●	●	●

Note: ● Standard Outfit, ○ Optional

System Diagram

Main Body

Main Body

Main Body

Main Body

ND6 Filter
Emboss Contrast Sliders
Emboss Contrast Adjustment Slider
Precentered PH Slider
Phase Ring

Rubber Eyeguard
10x Eyepiece
15X Eyepiece
20x Eyepiece
Centering Telescope

Well Plate
Stage Clip
Well Clamper
Holder
Universal Holder
Slide Glass Holder
Petri Dish Holder
Petri Dish Holder

Camera Port
Emboss Contrast

1X C Mount
0.5 X C Mount

Objective
Other LED Units
Other Epi-FL Filter Cubes

Contrast Shield

Metal Ring For Culture Bottle
Glass Stage Ring

Petri Dish Holder
Plain Stage

Dimension

Unit: mm