BS-2095 Research Inverted Microscope

BS-2095A

BS-2095AF

BS-2095B

BS-2095BF

BS-2095CF

Introduction

As a research grade inverted microscope designed to meet advanced life science research, BS-2095 can meet your various needs. It is an all-around microscope that can achieve observation methods such as bright field, phase contrast, polarization, DIC, fluorescence, etc. It adopts an Infinite optical system, reasonable structure and ergonomic design. With an innovative optical and structure design idea, excellent optical performance and easy to operate system, this research inverted biological microscope makes your works enjoyable. It has a trinocular head, so digital camera or digital eyepiece can be added to the trinocular head to take photos and videos.

Fully considering the user's operating habits and adopting ergonomic design, it greatly reduces mechanical fatigue caused by long-term observation work. BS-2095C adopts high-speed electric control to simplify and visualize complex operations, making them easier and more convenient to operate.

Feature

1. Different models for different needs

BS-2095A is a manual research inverted microscope for bright field, phase contrast, fluorescence and DIC observation methods. A large display screen is added on BS-2095B for easier operation in darkroom. BS-2095C is full motorized research inverted microscope with operation screen to achieve fully motorized control.

2. Semi-apochromatic plan objectives

With multi-layer coating technology, semi-apochromatic objectives can compensate for spherical aberration and chromatic aberration from ultraviolet to near-infrared. The 20X and 40X semi-apochromatic objectives have built-in correction rings that can correct coverage errors caused by non-standard cover glass thickness.

3. Tilting transmitted illumination column

Tiltable transmitted illumination column ensures the users have a large workspace and easy for sample replacement.

4. Condenser meets various needs

The condenser can meet different observation methods including bright field, phase contrast and DIC, to provide maximum selection space for your experiment.

5. Multi optical ports

The left side of the microscope is equipped with an optical path output selection dial, which facilitates the allocation of optical images to different ports and provides expansion space for more optical image applications.

6. Intermediate magnification available

Through smooth dial operation, the intermediate magnification can achieve quick switching between 1x and 1.5x.

7. Touch screen

For easier operation in darkroom, BS-2095B has added a 4.3-inch touch screen display on the front panel to show the microscope usage status.

8. X/Y axis electric motorized stage

Equipped with the motorized stage with large stroke and high precision, BS-2095C can achieve quick positioning and is suitable for multi-point observation.

9. Motorized condenser turntable

The condenser module of BS-2095C can be motorized converted.

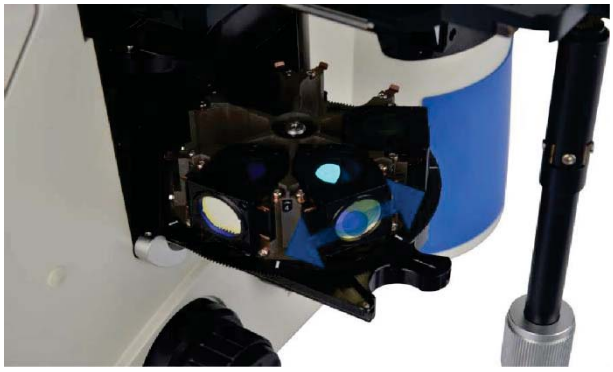
10. Z-axis auto focusing

BS-2095C can achieve fast and precise motorized Z-axis control.

11. Electric motorized nosepiece

BS-2095C can achieve motorized conversion of 6 objectives freely.

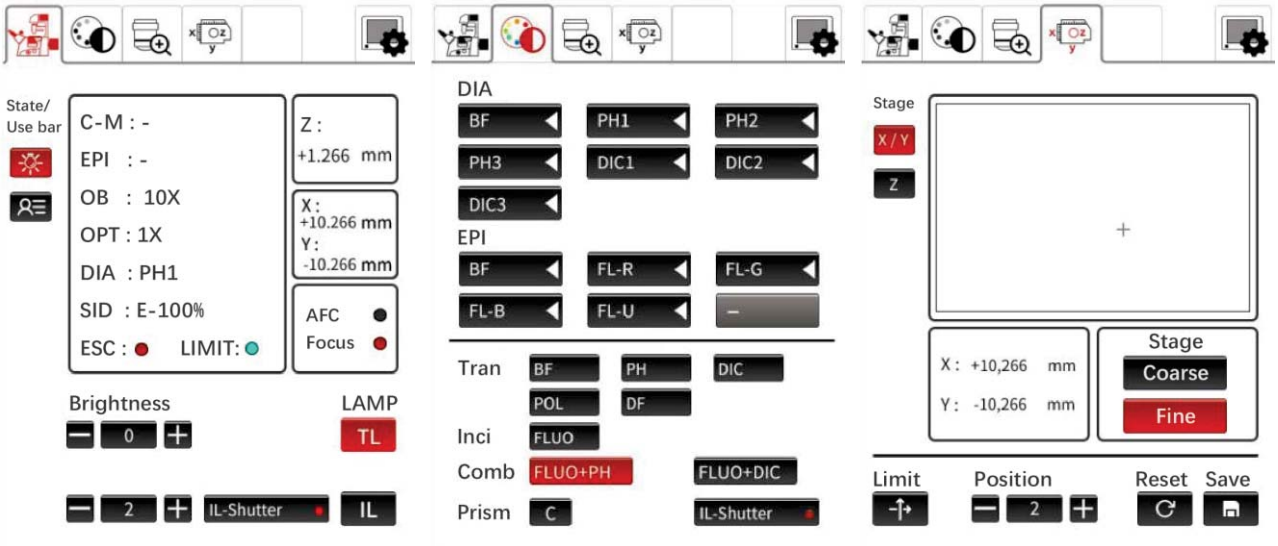
12. Electric fluorescence module turntable



BS-2095C can achieve motorized conversion of 6-hole fluorescence modules on the turntable.

13. Full motorized control

An operation screen is added at the front of BS-2095C, which can achieve almost all microscope controls, including motorized focusing, stage movement, objectives selection, condenser module conversion, intermediate magnification conversion, side optical port output selection, aperture adjustment, multifunctional turntable conversion and other functions. The control handle is integrated on the right side of the body, greatly saving space.



Microscope status display observation method selection stage control

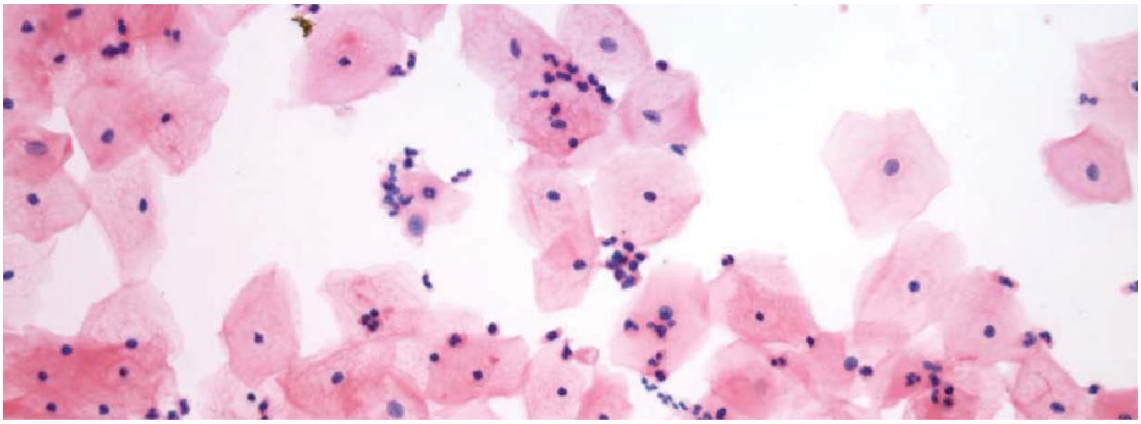
Application

BS-2095 Inverted microscope is used by medical and health units, universities, research institutes for observations of micro-organisms, cells, bacteria and tissue cultivation. It 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. This microscope is widely used in cytology, parasitology, oncology, immunology, genetic engineering, industrial microbiology, botany and other fields.

1. Bright Field

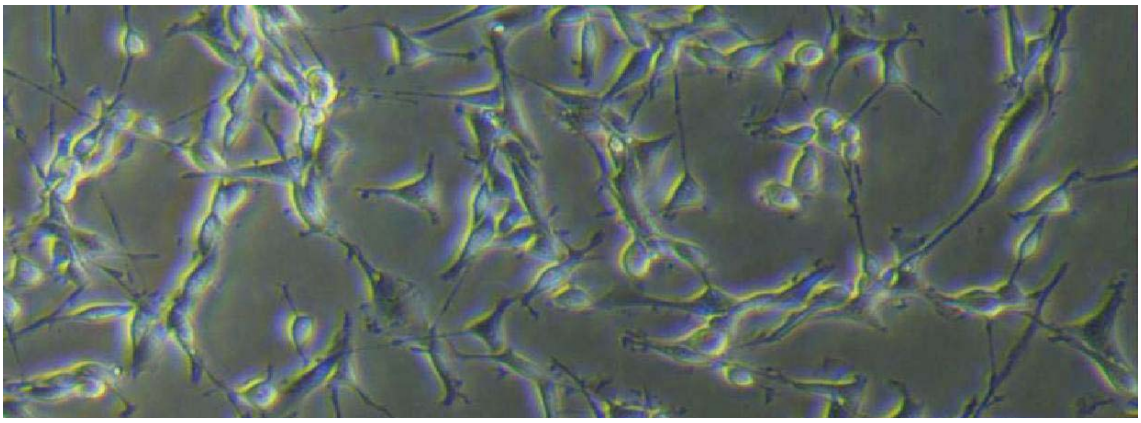
The unique NIS infinite optical system, combined with semi-apochromatic fluorescence objectives, effectively eliminates imaging problems such as field curvature, chromatic aberration, spherical aberration and coma, resulting

in brighter images with higher resolution and flatness at all magnifications.



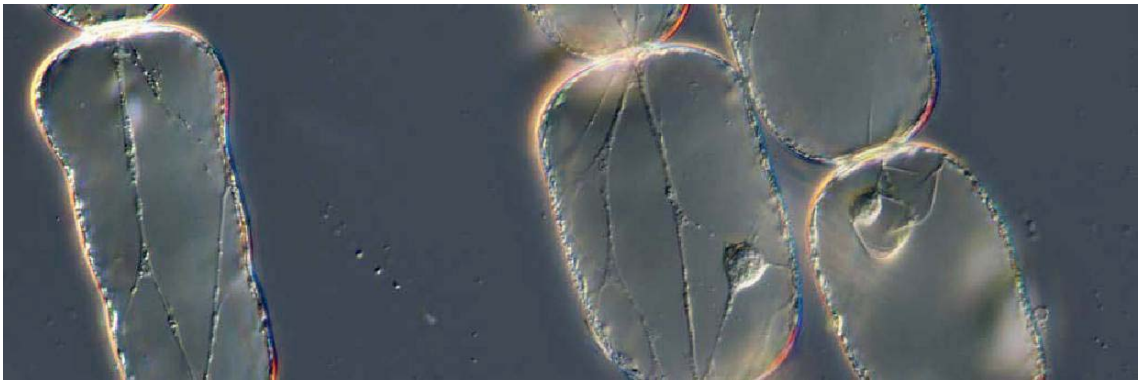
2. Phase Contrast

Phase contrast is an optical contrast technique that uses a phase contrast objective and a focusing ring. High efficiency halogen lamp can provide bright light sources for the system. Even at high magnification, clear images can be obtained.



3. DIC

Differential interference is a highly cost-effective optical technology that does not require expensive optical components. The relief contrast only needs a bright field objective and 2 phase contrast adjustment sliders. For thicker samples, such as induced pluripotent stem cells, differential interferometry can provide pseudo three-dimensional glare free images, while traditional phase contrast observation methods often result in halos. In addition, differential interferometry can be used in glass culture dishes and is a highly applicable observation technique.



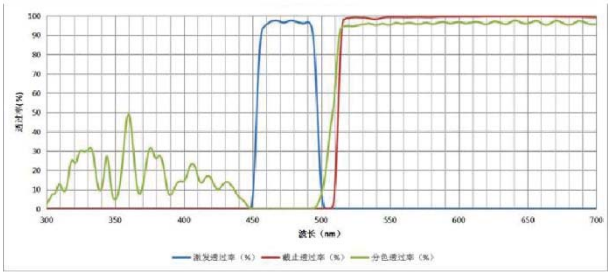
4. Fluorescence

Adopting the latest coating technology

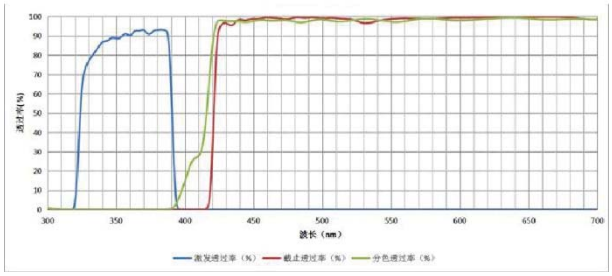
Adopting the latest advanced secondary ripple elimination coating technology, the transmittance of fluorescence is higher, the cutoff is more sensitive, and the detection efficiency is higher.

Fluorescence observation is more comfortable

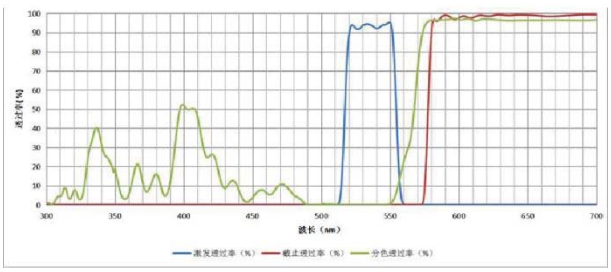
All fluorescence filter components are equipped with ultra-high performance color filters. The fluorescence lighting pillar can be equipped with six color filter groups, which can simultaneously image multiple stained specimens. High sensitivity fluorescence can achieve bright and high contrast imaging effects. The leading coating technology also reduces scattered light and spontaneous fluorescence, ensuring a higher signal-to-noise ratio.



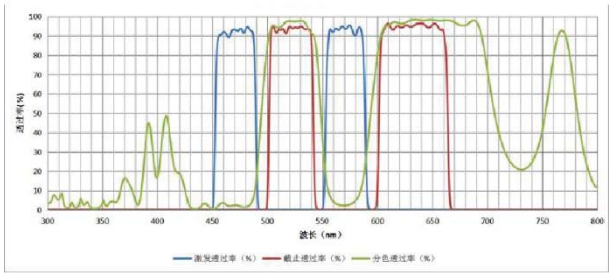
FITC Filters



DAPI Filters



TRITC Filters



B/G Filters

Specification

BS-2095A, BS-2095AF, BS-2095AF (LED)

Item	Specification	BS-2095A	BS-2095AF	BS-2095AF (LED)
Optical System	Infinite optical system	●	●	●
Eyepiece	SW10X/25mm, Φ30mm	●	●	●
	SW10X/22mm, Φ30mm	○	○	○
	EW12.5X/17.5mm, Φ30mm	○	○	○
	WF15X/16mm, Φ30mm	○	○	○

	WF20X/12mm, Φ30mm		○	○	○
Viewing Head	Trinocular head with Bertrand lens, inclined at 45°, Interpupillary 47-78mm, 3 position beam split ratio: 50/50, 100/0, 0/100		●	●	●
	Binocular ERGO head		○	○	○
Objectives	Infinite Plan Semi-APO Phase Contrast Objectives	4X/ NA=0.13, WD=16.5mm, cover glass 0-2mm	○	○	○
		10X/ NA=0.3, WD=8.1mm, cover glass 1.2mm	●	●	●
		20X/ NA=0.45, WD=7.5-8.8mm, cover glass 0-2mm	●	●	●
		40X/ NA=0.60, WD=3-4.4mm, cover glass 0-2mm	●	●	●
		60X/ NA=0.70, WD=1.8-2.6mm, cover glass 0.1-1.3mm	○	○	○
	Infinite Semi-APO Fluorescence Objectives	4X/ NA=0.13, WD=17mm	○	○	○
		10X/ NA=0.3, WD=7.4mm, cover glass 1.2mm	○	○	○
		20X/ NA=0.45, WD=8mm, cover glass 1.2mm	○	○	○
		40X/ NA=0.60, WD=3.3mm, cover glass 1.2mm	○	○	○
		60X/ NA=0.70, WD=1.8-2.6mm	○	○	○
	Infinite Plan Apochromatic Objectives	10X/ NA=0.45, WD=4.0mm	○	○	○
		20X/ NA=0.75, WD=1.1mm	○	○	○
		40X/ NA=0.95, WD=0.21mm	○	○	○
		(Oil) 60X/ NA=1.42, WD=0.25mm	○	○	○
		100X/ NA=1.45, WD=0.13mm	○	○	○
Nosepiece	6-hole nosepiece with DIC slot (DIC for transmitted and reflected)		●	●	●
Condenser	Long working distance condenser, NA0.55, WD=26mm, with 6-position plate		●	●	●
Illumination	Kohler illumination, 12V/100W halogen lamp		●	●	●
	ECO Auto-off function (automatically shut off in 15 mins if no users)		○	●	●
Focusing	Coaxial coarse & fine focusing. Movement range 9mm, coarse adjustment 2mm/rotation, fine adjustment 0.2mm/rotation		●	●	●
Internal Magnification	1X, 1.5X		●	●	●
Side Video Port	Switchable by turning plate, 3 models: left side port/eyepiece=50/50; right side port/eyepiece=20/80; left & right sides port/eyepiece=0/100		●	●	●
Dark Field	Dark field kit		○	○	○
Phase Contrast	Phase contrast kit		●	●	●
DIC	DIC kit		○	○	○
Hoffman Phase Contrast Attachment	Condenser		○	○	○
	Hoffman phase contrast 10X, 20X, 40X plug-in kit				
	Hoffman Phase Contrast Objectives	10X/ NA=0.25, WD=10.2mm			
		20X/ NA=0.24, WD=12mm			

		40X/ NA=0.6, WD=2.2mm			
	Centering telescope				
Stage	Three-layer mechanical stage, stage size: 340×230mm, movement range 130×85mm, flexible knob. Different small sizes stage could be attached to main stage		●	●	●
Fluorescence Attachment	Epi-fluorescence attachment with 100W HBO mercury lamp and B, G, UV fluorescence filters, field diaphragm, center adjustable.		○	●	○
	Epi-fluorescence attachment with 5W LED lamp of B, G, UV, R and B, G, UV fluorescence filters (input voltage: 100V-240V), field diaphragm, center adjustable.		○	○	●
	Multi-model plate structure, total 6 position, could be taken out from main frame and change different cube easily.		●	●	●
	V, FITC, DAPI, TRITC, Red, mCherry (Texas Red), FL-BG fluorescence filters		○	○	○
C-mount Adapter	0.5X C-mount adapter		○	○	○
	1× C-mount Adapter		○	○	○

BS-2095B, BS-2095BF, BS-2095BF (LED)

Item	Specification		BS-2095B	BS-2095BF	BS-2095BF (LED)
Optical System	Infinite optical system		●	●	●
Eyepiece	SW10X/25mm, Φ30mm		●	●	●
	SW10X/22mm, Φ30mm		○	○	○
	EW12.5X/17.5mm, Φ30mm		○	○	○
	WF15X/16mm, Φ30mm		○	○	○
	WF20X/12mm, Φ30mm		○	○	○
Viewing Head	Trinocular head with Bertrand lens, inclined at 45°, Interpupillary 47-78mm, 3 position beam split ratio: 50/50, 100/0, 0/100		●	●	●
	Binocular ERGO head		○	○	○
Objectives	Infinite Plan Semi-APO Phase Contrast Objectives	4X/ NA=0.13, WD=16.5mm, cover glass 0-2mm	○	○	○
		10X/ NA=0.3, WD=8.1mm, cover glass 1.2mm	●	●	●
		20X/ NA=0.45, WD=7.5-8.8mm, cover glass 0-2mm	●	●	●
		40X/ NA=0.60, WD=3-4.4mm, cover glass 0-2mm	●	●	●
		60X/ NA=0.70, WD=1.8-2.6mm, cover glass 0.1-1.3mm	○	○	○
	Infinite Semi-APO Fluorescence Objectives	4X/ NA=0.13, WD=17mm	○	○	○
		10X/ NA=0.3, WD=7.4mm, cover glass 1.2mm	○	○	○
		20X/ NA=0.45, WD=8mm, cover glass 1.2mm	○	○	○
		40X/ NA=0.60, WD=3.3mm, cover glass 1.2mm	○	○	○
		60X/ NA=0.70, WD=1.8-2.6mm	○	○	○

	Infinite Plan Apochromatic Objectives	10X/ NA=0.45, WD=4.0mm	○	○	○
		20X/ NA=0.75, WD=1.1mm	○	○	○
		40X/ NA=0.95, WD=0.21mm	○	○	○
		(Oil) 60X/ NA=1.42, WD=0.25mm	○	○	○
		100X/ NA=1.45, WD=0.13mm	○	○	○
Nosepiece	6-hole nosepiece with DIC slot (DIC for transmitted and reflected)		●	●	●
Condenser	Long working distance condenser, NA0.55, WD=26mm, with 6-position plate		●	●	●
Illumination	5W LED illumination (service life of minimum 50,000 hours)		●	●	●
	ECO Auto-off function (automatically shut off in 15 mins if no users)		○	●	●
Focusing	Coaxial coarse & fine focusing. Movement range 9mm, coarse adjustment 2mm/rotation, fine adjustment 0.2mm/rotation		●	●	●
Internal Magnification	1X, 1.5X		●	●	●
Side Video Port	Switchable by turning plate, 3 models: left side port/eyepiece=50/50; right side port/eyepiece=20/80; left & right sides port/eyepiece=0/100		●	●	●
Dark Field	Dark field kit		○	○	○
Phase Contrast	Phase contrast kit		●	●	●
DIC	DIC kit		○	○	○
Hoffman Phase Contrast Attachment	Condenser		○	○	○
	Hoffman phase contrast 10X, 20X, 40X plug-in kit				
	Hoffman Phase Contrast Objectives	10X/ NA=0.25, WD=10.2mm			
		20X/ NA=0.24, WD=12mm			
		40X/ NA=0.6, WD=2.2mm			
	Centering telescope				
Stage	Three-layer mechanical stage, stage size: 340×230mm, movement range 130×85mm, flexible knob. Different small sizes stage could be attached to main stage		●	●	●
Display	4.3-inch touch screen showing the microscope usage status		●	●	●
Fluorescence Attachment	Epi-fluorescence attachment with 100W HBO mercury lamp and B, G, UV fluorescence filters, field diaphragm, center adjustable.		○	●	○
	Epi-fluorescence attachment with 5W LED lamp and B, G, UV fluorescence filters (input voltage: 100V-240V), field diaphragm, center adjustable.		○	○	●
	Multi-model plate structure, total 6 position, could be taken out from main frame and change different cube easily.		●	●	●
	V, FITC, DAPI, TRITC, Red, mCherry (Texas Red), FL-BG fluorescence filters		○	○	○
C-mount Adapter	0.5X C-mount adapter		○	○	○
	1× C-mount Adapter		○	○	○

BS-2095C, BS-2095CF, BS-2095CF (LED)

Item	Specification		BS-2095C	BS-2095CF	BS-2095CF (LED)
Optical System	Infinite optical system		●	●	●
Eyepiece	SW10X/25mm, Φ30mm		●	●	●
	SW10X/22mm, Φ30mm		○	○	○
	EW12.5X/17.5mm, Φ30mm		○	○	○
	WF15X/16mm, Φ30mm		○	○	○
	WF20X/12mm, Φ30mm		○	○	○
Viewing Head	Trinocular head with Bertrand lens, inclined at 45°, Interpupillary 47-78mm, 3 position beam split ratio: 50/50, 100/0, 0/100		●	●	●
	Binocular ERGO head		○	○	○
Objectives	Infinite Plan semi-APO phase contrast objective	4X/ NA=0.13, WD=16.5mm, cover glass 0-2mm	○	○	○
		10X/ NA=0.3, WD=8.1mm, cover glass 1.2mm	●	●	●
		20X/ NA=0.45, WD=7.5-8.8mm, cover glass 0-2mm	●	●	●
		40X/ NA=0.60, WD=3-4.4mm, cover glass 0-2mm	●	●	●
		60X/ NA=0.70, WD=1.8-2.6mm, cover glass 0.1-1.3mm	○	○	○
	Infinite Semi-APO Fluorescence Objectives	4X/ NA=0.13, WD=17mm	○	○	○
		10X/ NA=0.3, WD=7.4mm, cover glass 1.2mm	○	○	○
		20X/ NA=0.45, WD=8mm, cover glass 1.2mm	○	○	○
		40X/ NA=0.60, WD=3.3mm, cover glass 1.2mm	○	○	○
		60X/ NA=0.70, WD=1.8-2.6mm	○	○	○
	Infinite Plan Apochromatic Objectives	10X/ NA=0.45, WD=4.0mm	○	○	○
		20X/ NA=0.75, WD=1.1mm	○	○	○
		40X/ NA=0.95, WD=0.21mm	○	○	○
		(Oil) 60X/ NA=1.42, WD=0.25mm	○	○	○
		100X/ NA=1.45, WD=0.13mm	○	○	○
Nosepiece	Motorized 6-hole nosepiece with DIC slot (DIC for transmitted and reflected)		●	●	●
Condenser	Motorized Long working distance condenser, NA0.55, WD=26mm, with 7-position plate		●	●	●
Transmitted Illumination	5W LED illumination (service life of minimum 50,000 hours)		●	●	●
Focusing	Motorized auto focusing mechanism, independent operation of left and right hand-wheels, three-speed speed adjustment, focusing range 9mm, repeat positioning accuracy: 0.1μm, motorized escape and recovery mechanism		●	●	●
Internal Magnification	1X, 1.5X		●	●	●

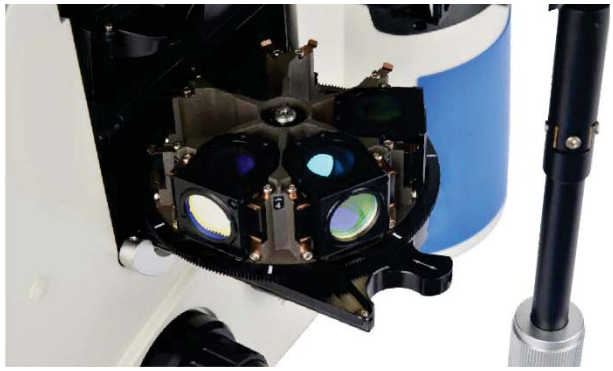
Side Video Port	Switchable by turning plate, 3 models: left side port/eyepiece=50/50; right side port/eyepiece=20/80; left & right sides port/eyepiece=0/100		●	●	●
Dark Field	Dark field kit		○	○	○
Polarizing Kit	Polarizer & analyzer		○	○	○
Phase Contrast	Phase contrast kit		●	●	●
DIC	DIC kit		○	○	○
Hoffman Phase Contrast Attachment	Condenser		○	○	○
	Hoffman phase contrast 10X, 20X, 40X plug-in kit				
	Hoffman Phase Contrast Objectives	10X/ NA=0.25, WD=10.2mm			
		20X/ NA=0.24, WD=12mm			
		40X/ NA=0.6, WD=2.2mm			
	Centering telescope				
Stage	Motorized Three-layer mechanical stage, stage size: 340×230mm, movement range 130(X)×100(Y)mm, flexible knob. Different small sizes stage could be attached to main stage		●	●	●
Display	Touch screen showing the microscope usage status		●	●	●
Fluorescence Attachment	Epi-fluorescence attachment with 100W HBO mercury lamp and B, G, UV fluorescence filters, field diaphragm, center adjustable.		○	●	○
	Epi-fluorescence attachment with 5W LED lamp and B, G, UV fluorescence filters (input voltage: 100V-240V), field diaphragm, center adjustable.		○	○	●
	Motorized multi-model filter block structure, total 6 position, could be taken out from main frame and change different cube easily.		●	●	●
	V, FITC, DAPI, TRITC, Red, mCherry (Texas Red), FL-BG fluorescence filters		○	○	○
C-mount Adapter	0.5X C-mount adapter		○	○	○
	1× C-mount Adapter		○	○	○

Note: ● Standard Outfit, ○ Optional

Accessories

1. Fluorescence module turntable

Adopting a multifunctional six-hole turntable structure, fluorescence modules can be easily removed from the main unit, making it convenient to replace various fluorescence excitation modules.



2. Diaphragm sliders

The three different types of light barrier sliders, including reflective field diaphragm, iris diaphragm and filter insert, enhance the multifunctionality of BS-2095 in live cell researches. When used in conjunction with iris diaphragm and fluorescence filter insert, the optimal fluorescence intensity can be adjusted according to the selected fluorescence module and objectives.

3. Fluorescence illumination

Mercury lamp

Standard OSRAM 100W HBO ultra-high pressure spherical mercury lamp, with high fluorescence brightness and uniform field of view. At the same time, a light gate is installed at the front of the vertical illuminator to cut off the fluorescence lighting at any time and protect the sample.

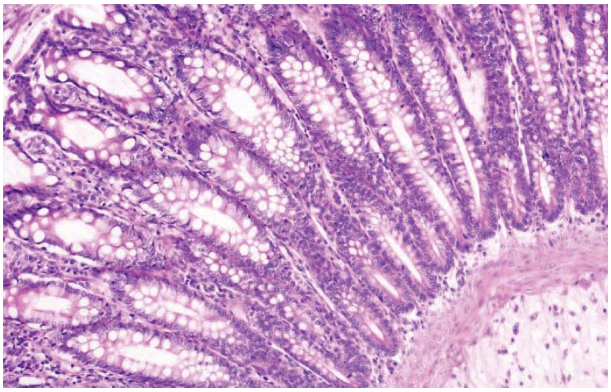
LED lamp

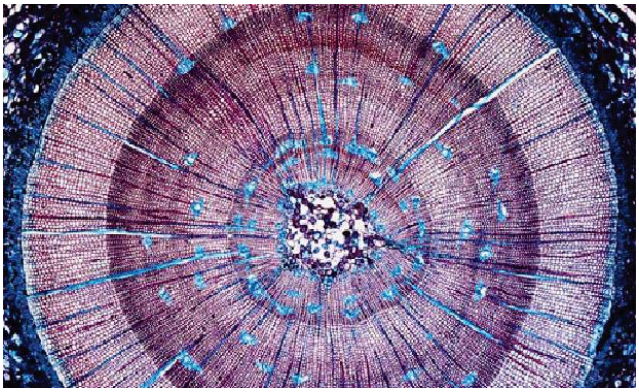
4-color LED illuminator, brightness adjustable. The lifespan of the bulb can be up to 10,000 hours. Low phototoxicity is friendly to fine samples such as cells. It solves the problems of traditional fluorescent mercury lamp requiring preheating, cooling, and high temperatures during use.

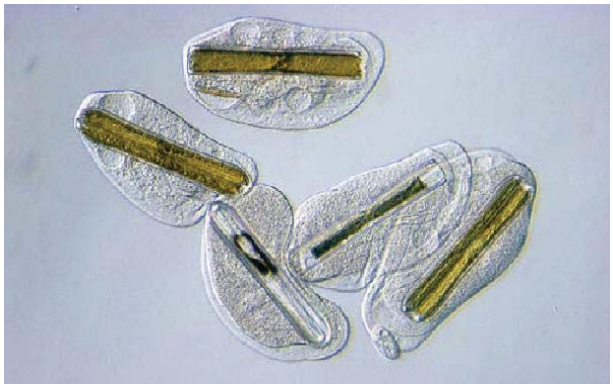
4. Hoffman phase contrast

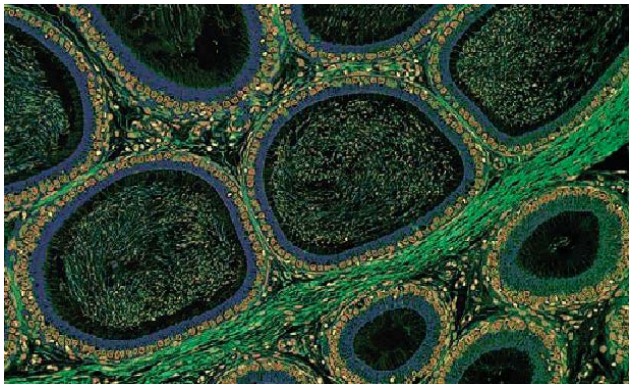
Hoffman phase contrast attachment, including condenser, Hoffman phase contrast 10X, 20X, 40X plug-in, 10X, 20X, 40X Hoffman phase contrast objectives and centering telescope.

Sample Images

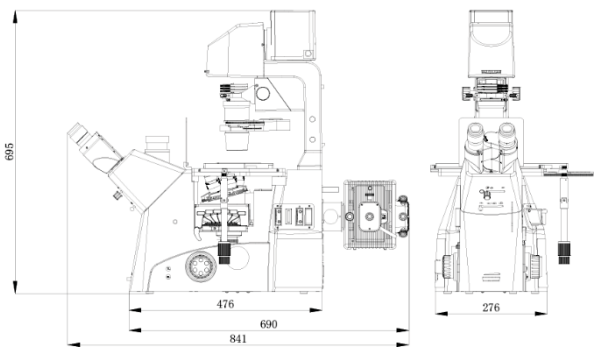




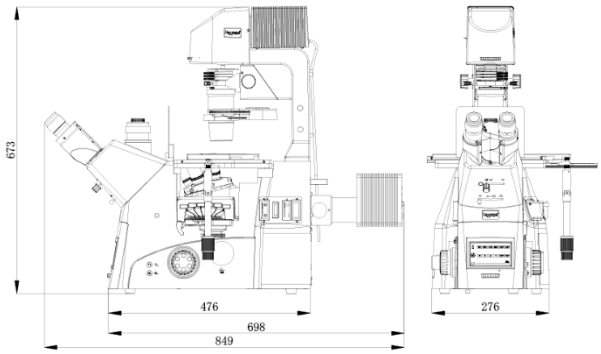




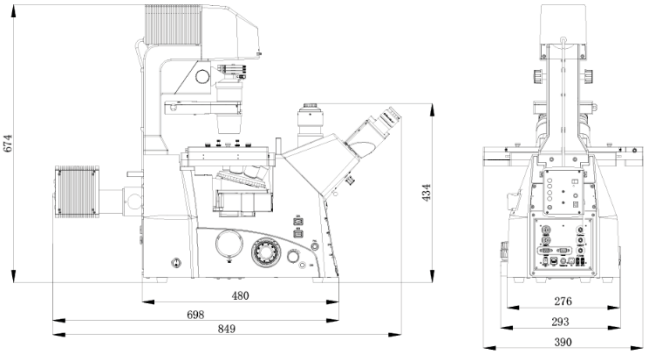
Dimension



BS-2095AF



BS-2095BF (LED)



BS-2095CF (LED)