

## IMM-40 Inverted Metallurgical Microscope

### Applications:

IMM-40 series metallurgical microscopes are used for identification and analysis of the structures in different metals and alloys. They are the important instruments for researching metallography in metal physics. The instruments can select special photography device to take euploid pictures of atlas metallograph. The instruments are suitable for scientific research, colleges and factory .



### Features:

- ◆ With plan achromatic objectives with long working distance (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field.
- ◆ Coaxial coarse/fine focus system, with tension adjustable and up stop, minimum division of fine focusing: 2μm.
- ◆ 6V 20/30W halogen lamp, brightness control.
- ◆ Trinocular is compensation, can switch to observe normally or to observe the Polarize, can send 100% of light to top photography port.

### Specification list:

Model	IMM-40AT	IMM-40BT
Eyepiece	Wide field WF10X(Φ18mm)	
Objective	Plan achromatic objectives with long working distance (no cover glass) PL 10X/0.25	Achromatic objectives(no cover glass) 10X/0.25
	Plan achromatic objectives with long working distance (no cover glass) PL L20X/0.40	Achromatic objectives(no cover glass) 20X/0.40
	Plan achromatic objectives with long working distance (no cover glass) PL L40X/0.60	Achromatic objectives(no cover glass) SP 40X/0.65
	Plan achromatic objectives with long working distance (no cover glass) PL 100X/1.25(Spring, oil)	Achromatic objectives(no cover glass) 100X/1.25(Spring, oil)
Eyepieces tube	Trinocular, Inclination of 30°	
Filter	Frosted filter	
	Blue filter	
	Green filter	
	Yellow filter	
Focus system	Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm.	
Nosepiece	Quadruple(Ball bearing inner locating)	
Stage	Double layer mechanical (Size:180mmX150mm,moving range: 15mmX15mm)	
Illumination unit	6V 20/30W halogen lamp, brightness control.	

## IMM-50 Trinocular Inverted polarized Metallurgic Microscope

### Suitable for metallography image analysis system

#### Applications:

A new type Trinocular Inverted Metallurgic Microscope, is used for identification and analysis of the microstructure of all kinds of metals and alloy materials; quality identification for castings; inspection of raw material or metallographic structure analysis of process material and research some surface such as craze and surface coating. Operating with the polished surface down and no inlays, suitable for big and all kinds of specimen. With elegant design & making and complete system, it is suitable for observation, analysis and measurement of the metallographic structure, infiltrate layers, clad layers, melt deep and crazing. With the polarizer device and iris diaphragm brightfield illumination, it is suitable for observation and photography of grain, grain boundaries and ductile iron.



It can avoid the knocking between the specimen and objective as equipped with parfocal objectives and lifting parfocal objectives with locking device, it is suitable for mass detection to improve work efficiency. With two optical output, the microscope can be routine used and provides synchronized image output, expand photography or digital photography system and professional quantitative metallography image analysis computer operating system.

#### Specification list:

Model		IMM-50	
Optical	Magnification	50×-1250×	
	Plan Achromatic Objective	PL10× PL 20× PL 40× PL 100×	
	Eyepiece	PL10× PL12.5×	
Eyepiece		10×(focusing) 0.1/18mm micrometer 0.01/1mm	
Frame	configuration	Inverted, optical trinocular tube, gemel type, obliquity 45°, pupil 55-75mm dioptr ±5% adjustable	
	Revolving objective	4 hole circumvolve	
	Double layer stage	Stage size:	175x150mm
		moving range	75x50mm X-Y resolution 0.1mm
	Rotary stage	Diameter Φ100mm , 360°Rotatable, Graduation 90°	
	Loading plate	hole Diameter Φ10/Φ15/Φ20/Φ40 mm	
Focus system	coaxial jiggle Up/down movement:	15mm	
	Fine adjustment:	0.002mm Up and down locking & torsion adjustment	
Light System	Brightfield illumination	Kohler illumination; Variable aperture & field diaphragm ;	
		Adjustable brightness ;	
		Halogen Lamp: 20W/6V ; Filters: Yellow/Green/Blue/Frosted	
	Polarizing	Polarizing and checking plate	
Power supply		AC90-240V/50-60Hz 30W	
Dimensions & Weight		Machine N.W.:13KG Dimensions: 340(L)x400(W)x460(H)mm	

## IMM-60 Trinocular Inverted polarized Metallurgic Microscope

### Applications:

A new type Trinocular Inverted Metallurgic Microscope, is used for identification and analysis of the microstructure of all kinds of metals and alloy materials; quality identification for castings; inspection of raw material or metallographic structure analysis of process material and research some surface such as craze and surface coating. Operating with the polished surface down and no inlays, suitable for big and all kinds of specimen.

With elegant design & making and complete system, it is suitable for observation, analysis and measurement of the metallographic structure, infiltrate layers, clad layers, melt deep and crazing.

With the polarizer device and iris diaphragm brightfield illumination, it is suitable for observation and photography of grain, grain boundaries and ductile iron.

It can avoid the knocking between the specimen and objective as equipped with parfocal objectives and lifting parfocal objectives with locking device, it is suitable for mass detection to improve work efficiency.

With two optical output, the microscope can be routine used and provides synchronized image output, expand photography or digital photography system and professional quantitative metallography image analysis computer operating system.



### Specification list:

Model		IMM-60
Optical	Magnification	50×-1250×
	Plan Achromatic Objective	PL10× PL 20× PL 40× PL 100×(oil)
	Eyepiece	PL10× PL12.5×
Eyepiece		10×(focusing) 0.1/18mm micrometer 0.01/1mm
Frame	configuration	Inverted, optical trinocular tube, gemel type, obliquity 45°, pupil 55-75mm dioptre ±5% adjustable
	Revolving objective	4 hole ball bearing circumvolve
	Double layer stage	Stage size:180x155mm
		moving range 75x50mm X-Y resolution 0.1mm
	Rotary stage	Diameter Φ100mm , 360°Rotatable, Graduation 90°
	Loading plate	hole Diameter Φ10/Φ15/Φ20/Φ40 mm
Focus system	coaxial jiggle Up/down movement: 30mm	
	Fine adjustment: 0.002mm Up and down locking & torsion adjustment	
Light System	Bright-field illumination	Kohler illumination; Variable aperture & field diaphragm ;
		Adjustable brightness ;
	Halogen Lamp: 30W/6V ; Filters: Yellow/Green/Blue/Frosted	
Polarizing		Polarizing and checking plate
Power supply		AC90-240V/50-60Hz 30W
Dimensions & Weight		Machine N.W.:16 KG Dimensions 680(L)x470(W)x340(H)mm

**IMM-70 Trinocular Inverted polarized Metallurgic Microscope**  
**excellent UIS optical system Suitable for metallography image analysis system**

**Applications:**

IMM-70 Inverted metallurgical microscope is equipped excellent UIS optical system and modularization function design so that update system expediently and achieved polarization, dark field observation. Compact and steady main frame body is embodiment for the shock resistance. The ideal ergonomic design is adopted in this unit and has easier operation and wider space. This is ideal optical instrument for micro observation in metallurgical structure and surface morphology. It is suitable for research in metallography, mineralogy, precision engineering, etc.



**Specification list:**

Model		IMM-70 (Bright-field)				IMM-70BD (Bright & Dark-field)			
Optical	Magnification	100X	200X	500X	1000X	50X	100X	200X	500X
	Plan Achromatic Objective	10X	20X	50X	100X Dry	5X	10X	20X	50X
	W F Eyepiece	WF 10x/20mm							
Eyepiece		10x(focusing) 0.1/20mm micrometer 0.01/1mm							
Frame	configuration	Inverted, optical trinocular tube, gemel type, obliquity 45°, pupil 55-75mm dioptré ±5% adjustable							
	Revolving objective	5 hole ball bearing circumvolve							
	Double layer stage	Stage size:242x200mm							
		moving range 30x30 mm X-Y resolution 0.1mm							
	Rotary stage	Loading plateΦ130mm							
Focus system	coaxial jiggle Up/down movement: 30mm								
	Fine adjustment: 0.002mm Up and down locking & torsion adjustment								
Light System	Bright-field/ Bright & Dark-field illumination	Kohler illumination; Variable aperture & field diaphragm ;							
		Adjustable brightness ;							
		Halogen Lamp: 30W/12V ;				Halogen Lamp: 50W/12V			
	Polarizing	Filters: Yellow/Green/Blue/N/T							
Power supply		Polarizing and checking plate							
Dimensions & Weight		AC90-240V/50-60Hz 45W							
		Machine N.W.:12 KG							
		Dimensions 500(L)x360(W)x630(H)mm							

## IMM-70 DIC Metallurgic Microscope

### Applications:

IMM-70DIC Inverted metallurgical microscope is equipped excellent UIS optical system and modularization function design so that update system expediently and achieved polarization, dark field observation. Compact and steady main frame body is embodiment for the shock resistance. The ideal ergonomic design is adopted in this unit and has easier operation and wider space. This is ideal optical instrument for micro observation in metallurgical structure and surface morphology. It is suitable for research in metallography, mineralogy, precision engineering, etc.



### Specification list:

Model		IMM-70 DIC				
DIC observation system		10XDIC plate group				
		20XDIC plate group				
Optical	Magnification	Bright-field	100X	200X	500X	1000X
		(Bright & Dark-field)	50X	100X	200X	500X
	Plan Achromatic Objective	Bright-field	10X	20X	50X	100X Dry
		(Bright & Dark-field)	5X	10X	20X	50X
	W F Eyepiece	WF 10X/20mm				
Eyepiece		10×(focusing) 0.1/20mm micrometer 0.01/1mm				
Frame	configuration	Inverted, optical trinocular tube, gemel type, obliquity 45°, pupil 55-75mm dioptr ±5% adjustable				
	Revolving objective	5 hole ball bearing circumvolve				
	Double layer stage	Stage size:242x200mm				
		moving range 30x30 mm X-Y resolution 0.1mm				
	Rotary stage	Loading plateΦ130mm				
Focus system	coaxial jiggle Up/down movement: 30mm					
	Fine adjustment: 0.002mm Up and down locking & torsion adjustment					
Light System	Bright-field/ Bright & Dark-field illumination	Kohler illumination; Variable aperture & field diaphragm ;				
		Adjustable brightness ;				
		Bright-field	Halogen Lamp: 30W/12V			
		(Bright & Dark-field)	Halogen Lamp: 50W/12V			
		Filters: Yellow/Green/Blue/N/T				
	Polarizing	Polarizing and checking plate				
Power supply		AC90-240V/50-60Hz 45W				
Dimensions & Weight		Machine N.W.:12 KG				
		Dimensions 500(L)x360(W)x630(H)mm				

## UMM-12A Upright Metallurgical Microscope

### Features:

UMM-12A series reflected metallurgical microscopes are suitable to observe the surfaces of non-transparent object. They are equipped with vertical illuminator, plan achromatic objectives with long working distance (no cover glass), wide-field eyepieces and set polarizer device in trinocular. They provide clear and high-contrast picture, convenient operation and etc. They are the ideal instruments for research work in metallography, mineralogy, precision engineering, electronics and etc. They are suitable for scientific research, teaching demonstration in the colleges and factory.

- ◆ With plan achromatic objectives with long working distance (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field.
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm.
- ◆ 6V 20W Halogen lamp, adjustable control.
- ◆ Trinocular, can switch to observe normally or to observe the polarize, can send 100% of light to the binocular eyepieces or to the top port.



### Specifications:

Model	UMM-12A	UMM-12AT	
Eyepiece	Wide Field WF10X ( Field Number: Φ18mm)		
Objective	PL L5X/0.12 Working Distance: 18.3mm		
	PL L10X/0.25 Working Distance: 8.8mm		
	PL L40/0.60 ( Spring ) Working Distance: 3.7mm		
	PL L60/0.75 ( Spring ) Working Distance: 1.34mm		
Eyepiece Tube	Trinocular Tube, Inclination 30°, Integrated Analyzer		
Epi-illumination System	6V, 20W Halogen Lamp ( Adjustable Brightness )		
	Integrated Field, Aperture Diaphragm, Filter Switching Device, Puller Polarizer		
	Attached Yellow, Blue, Green Filters & Frosted Glass		
Transmitted Illumination System	/		
Focusing System	Coaxial coarse/fine focusing system with tension adjustable and up stop Minimum division of fine focusing is 2 μm.		
Nosepiece	Quadruple(4) ( Backward ball bearing inner locating )	Quintuple(5) ( Backward ball bearing inner locating )	
Stage	Double Layer Mechanical Stage Moving Range: 75 x 50mm Size: 185 x 140mm		
Optional Accessories	Eyepiece	Dividing Eyepiece ( Φ18mm )	
	Objective	20X, 50X, 60X, 100X ( Dry )	
	CCD Adapter	0.4X, 0.5X, 1X, 0.5X (With Divided Scale)	
	Camera	USB & Video Synchronously Output: Video Output: 380/520TV Line; USB Output: 0.42Mega Pixels	
		USB Output: 1.3M/3.0M/5.0M/9.0M Pixels Video Output: 380/520 TV Line	
Digital Camera Adapter	Canon ( EF ) , Nikon ( F )		

## UMM-12B Upright Metallurgical Microscope

### Features:

UMM-12B series reflected metallurgical microscopes are suitable to observe the surfaces of non-transparent object. They are equipped with vertical illuminator, plan achromatic objectives with long working distance (no cover glass), wide-field eyepieces and set polarizer device in trinocular. They provide clear and high-contrast picture, convenient operation and etc. They are the ideal instruments for research work in metallography, mineralogy, precision engineering, electronics and etc. They are suitable for scientific research, teaching demonstration in the colleges and factory.



- ◆ With plan achromatic objectives with long working distance (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field.
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm.
- ◆ 6V 20W Halogen lamp, adjustable control.
- ◆ Trinocular, can switch to observe normally or to observe the polarize, can send 100% of light to the binocular eyepieces or to the top port.

### Specifications:

Model	UMM-12B	UMM-12BT	
Eyepiece	Wide Field WF10X ( Field Number: Φ18mm)		
Objective	PL L5X/0.12 Working Distance: 18.3mm		
	PL L10X/0.25 Working Distance: 8.8mm		
	PL L40/0.60 ( Spring ) Working Distance: 3.7mm		
	PL L60/0.75 ( Spring ) Working Distance: 1.34mm		
Eyepiece Tube	Trinocular Tube, Inclination 30°, Integrated Analyzer		
Epi-illumination System	6V, 20W Halogen Lamp ( Adjustable Brightness )		
	Integrated Field, Aperture Diaphragm, Filter Switching Device, Puller Polarizer		
	Attached Yellow, Blue, Green & Red Filters		
Transmitted Illumination System	Outside Field Diaphragm , 6V, 20W Halogen Lamp ( Adjustable Brightness )		
	Abbe Condenser NA.1.25 ( Rack & Pinion Adjustable )		
	Attached Blue, Green Filters & Frosted Glass		
Focusing System	Coaxial coarse/fine focusing system with tension adjustable and up stop Minimum division of fine focusing is 2 μm.		
Nosepiece	Quadruple (4) ( Backward ball bearing inner locating )	Quintuple (5) ( Backward ball bearing inner locating )	
Stage	Double Layer Mechanical Stage    Moving Range: 75 x 50mm	Size: 160 x 140mm	
Optional Accessories	Eyepiece	Dividing Eyepiece ( Φ18mm )	
	Objective	20X, 50X, 60X, 100X ( Dry )	
	CCD Adapter	0.4X, 0.5X, 1X, 0.5X (With Divided Scale)	
	Camera	USB & Video Synchronously Output: Video Output: 380/520TV Line    USB Output: 0.42Mega Pixels	
		USB Output: 1.3M/3.0M/5.0M/9.0M Pixels Video Output: 380/520 TV Line	
Digital Camera Adapter	Canon ( EF ) , Nikon ( F )		

## UMM-12C Upright Metallurgical Microscope

### Features:

UMM-12C series reflected metallurgical microscopes are suitable to observe the surfaces of non-transparent object. They are equipped with vertical illuminator, plan achromatic objectives with long working distance (no cover glass), wide-field eyepieces and set polarizer device in trinocular. They provide clear and high-contrast picture, convenient operation and etc. They are the ideal instruments for research work in metallography, mineralogy, precision engineering, electronics and etc. They are suitable for scientific research, teaching demonstration in the colleges and factory.



- ◆ With plan achromatic objectives with long working distance (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field.
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm.
- ◆ 6V 20W Halogen lamp, adjustable control.
- ◆ Trinocular, can switch to observe normally or to observe the polarize, can send 100% of light to the binocular eyepieces or to the top port.

### Specifications:

Model	UMM-12C	UMM-12CT	
Eyepiece	Wide Field WF10X ( Field Number: Φ18mm)		
Objective	PL L5X/0.12 Working Distance: 18.3mm		
	PL L10X/0.25 Working Distance: 8.8mm		
	PL L40/0.60 ( Spring ) Working Distance: 3.7mm		
	PL L60/0.75 ( Spring ) Working Distance: 1.34mm		
Eyepiece Tube	Trinocular Tube, Inclination 30°, Integrated Analyzer		
Epi-illumination System	6V, 20W Halogen Lamp ( Adjustable Brightness )		
	Integrated Field, Aperture Diaphragm, Filter Switching Device, Puller Polarizer		
	Attached Yellow, Blue, Green Filters & Frosted Glass		
Transmitted Illumination System	Outside Field Diaphragm , 6V, 20W Halogen Lamp ( Adjustable Brightness )		
	Abbe Condenser NA.1.25 ( Rack & Pinion Adjustable )		
	Attached Blue Filter & Frosted Glass		
Focusing System	Coaxial coarse/fine focusing system with tension adjustable and up stop Minimum division of fine focusing is 2 μm.		
Nosepiece	Quadruple(4) ( Backward ball bearing inner locating )	Quintuple(5) ( Backward ball bearing inner locating )	
Stage	Double Layer Mechanical StageMoving Range: 75 x 50mm	Size: 185 x 140mm	
Optional Accessories	Eyepiece	Dividing Eyepiece ( Φ18mm )	
	Objective	20X, 50X, 60X, 100X ( Dry )	
	CCD Adapter	0.4X, 0.5X, 1X, 0.5X (With Divided Scale)	
	Camera	USB & Video Synchronously Output: Video Output: 380/520TV Line USB Output: 0.42Mega Pixels	
		USB Output: 1.3M/3.0M/5.0M/9.0M Pixels Video Output: 380/520 TV Line	
	Digital Camera Adapter	Canon ( EF ) , Nikon ( F )	



## UMM-15A Upright Metallurgical Microscope

### Features:

UMM-15A reflected metallurgical microscope is applicable to observe the opaque objects. It is equipped with Epi-illumination system, infinity plan achromatic and long working distance objectives, wide-field eyepieces and integrated polarizing device. It provides clear and good contrast picture, beautiful sculpt, convenient operation. It is the ideal instruments for research work in metallography, mineralogy, precision engineering, electronics, etc. It is suitable for scientific research, teaching demonstration in the colleges and factory.

- ◆ Adopt infinity optical system and modularization function design.
- ◆ Infinity long W.D plan objectives , the field of view is widely and clear.
- ◆ Wide-field plan eyepieces: field number  $\Phi 22\text{mm}$ .
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing:  $2\mu\text{m}$ .
- ◆ Integrated polarization observation device, the polarizer can be circumrotated for  $360^\circ$ .
- ◆ The Epi- illumination is 6V 30W halogen lamp and the lamp box cover can be revolved, replacing lamp facility and safety.
- ◆ Trinocular can be observation for eyepieces and microphotography in 100% light flux, suits for low illuminance microphotography.



### Specifications:

Model	UMM-15A
Eyepiece	Wide field WF10X( $\Phi 22\text{mm}$ )
Objective	Infinity plan achromatic objectives with long working distance (no cover glass)
	PL L5X/0.12 (Work distance): 26.1 mm
	PL L10X/0.25 (Work distance): 20.2 mm
	PL L40X/0.60 (spring) (Work distance:3.98 mm)
	PL L60X/0.70 (spring£) (Work distance :3.18 mm)
Eyepieces tube	Trinocular, Inclination of $30^\circ$ , (Analyzer with field diaphragm to switch)
Epi- illumination system	6V 30W, halogen lamp, adjustable brightness
	Integrated field, aperture diaphragm and (Y,B,G, ground glass) switching device. Push-pull type polarizer.
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: $2\mu\text{m}$ .
Nosepiece	Quintuple (Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:210mmX140mm,movingrange:75mmX50mm)

## UMM-15B Upright Metallurgical Microscope

### Features:

UMM-15B reflected and transmitted microscope is suitable to observe surfaces of non-transparent object or transparent object. It is equipped with vertical illuminator, infinity plan achromatic objectives with long working distance (no cover glass), wide-field eyepieces and set polarizer device in trinocular. It provides clear and high-contrast image, beautiful sculpt, convenient control, etc. It is the ideal instruments in research work in biology, metallography, mineralogy, precision engineering, electronics, etc. It is suitable for scientific research, teaching demonstration in the colleges and factory.



- ◆ With infinity plan achromatic objectives with long working distance (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field.
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ Movement of stage: 30mm
- ◆ With vertical illuminator and transmitted illuminator, can observe surfaces of non-transparent object or transparent object.
- ◆ Trinocular, can switch to observe normally or to observe the Polarize, can send 100% of light to the binocular eyepieces or to the top port.

### Specifications:

Model	UMM-15B
Eyepiece	Wide field WF10X(Φ22mm)
Objective	Infinity plan achromatic objectives with long working distance (no cover glass)
	PL L5X/0.12(Work distance): 26.1 mm
	PL L10X/0.25(Work distance): 20.2 mm
	PL L40X/0.60 (Spring) Work distance: 3.98 mm
	PL L60X/0.70 (Spring) Work distance): 3.18 mm
Eyepieces tube	Trinocular inclined 30°, can be shot in 100% light flux.
Epi- illumination system	6V 30W, halogen lamp, adjustable brightness
	Integrated field diaphragm, aperture diaphragm and filter switching device. Push-pull type analyzer and polarizer
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: 2μm.
Nosepiece	Quintuple (Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:210mmX140mm,movingrange:75mmX50mm)
Transmitted illumination system	Abbe condenser NA.1.25 Rack & pinion adjustable
	Blue filter and Ground glass
	Collector for illumination with halogen lamp (With field diaphragm )
	6V 30W halogen lamp, adjustable brightness

## UMM-15BD Upright Metallurgical Microscope

### Features:

UMM-15BD upright bright or dark transmitted or reflected light metallurgical microscope is a multi-purpose industrial inspection optical instrument. It is equipped with bright or dark field objectives, wide field eyepieces and integrated polarization observation device, the Kohler illuminator is used in the transmitted and reflected illuminating system, the whole field is clear and uniformity. It is suitable for inspecting, such as semiconductor silicon wafer, LCD floor plate, electrocircuit plate, solid powder and all kind of industry sample that translucent or opaque. It is the ideal instruments in research work in biology, metallography, mineralogy, precision engineering, electronics, etc.



- ◆ Adopt infinity optical system and modularization function design.
- ◆ Long W.D bright or dark field plan objectives (no cover glass), the field of view is widely and clear.
- ◆ Wide-field plan eyepieces: field number  $\Phi 22\text{mm}$ .
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing:  $2\mu\text{m}$ .
- ◆ Integrated polarization observation device, the polarizer can be circumrotated for  $360^\circ$ .
- ◆ The Epi- illumination is 12V 50W halogen lamp and the lamp box cover can be revolved, replacing lamp facility and safety. The transmitted illumination is 12V 30W halogen lamp and adding radiator.
- ◆ Trinocular can be observation for eyepieces and microphotography in 100% light flux, suits for dark field microphotography

### Specifications:

Model	UMM-15BD
Eyepiece	Wide field WF10X (field number: $\Phi 22\text{mm}$ )
objective	Infinity plan achromatic bright or dark field with long work distance. (no cover glass)
	PL L5X/0.12 B.D (Work distance: 9.7 mm)
	PL L10X/0.25 B.D (Work distance: 9.3 mm)
	PL L20X/0.40 B.D (Work distance: 7.2 mm)
	PL L40X/0.60 B.D (Work distance: 3.0 mm)
Eyepieces tube	Trinocular, Inclination of $30^\circ$ , (Integrated analyzer and switching freely), Brinocular
Epi- illumination system	12V 50W halogen lamp, adjustable brightness
	Integrated field diaphragm, aperture diaphragm and filter switching device. Push-pull type analyzer and polarizer
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: $2\mu\text{m}$ .
Nosepiece	Quintuple (Backward ball bearing inner locating)
Stage	Double layer mechanical (Size: $210\text{mm} \times 140\text{mm}$ , moving range: $75\text{mm} \times 50\text{mm}$ )
Transmitted illumination system	Abbe condenser NA.1.25 Rack & pinion adjustable
	Blue filter and Ground glass
	Collector for illumination with halogen lamp (With field diaphragm )
	12V 30W halogen lamp, adjustable brightness

## UMM-15DIC Upright Metallurgical Microscope

### Features:

UMM-15DIC differential interference contrast microscope is suitable to observe many different kinds of object. It is equipped with transmitted illuminator and reflected DIC system, infinity plan achromatic objectives with long working distance, wide-field eyepieces and polarizer device. It provides clear and 3D image, beautiful sculpt, convenient control, etc. It is the ideal instruments in research work in biology, metallography, mineralogy, precision engineering, electronics, etc.

- ◆ Excellent UIS optical system can obtain excellent optical performance.
- ◆ Compact and steady main frame body is embodiment for the shock resistance.
- ◆ Modularization function design so that update system expediently and achieved polarization, DIC observation.
- ◆ Ideal ergonomic design is adopted in this unit and have easier operation and wider space.



### Specifications:

Model	UMM-15DIC
Eyepiece	Wide field WF10X(Φ18mm)
Objective	Infinity plan achromatic objectives with long working distance (no cover glass)
	PL L5X/0.12 Work distance:26.1 mm
	PL L10X/0.25 Work distance:20.2 mm
	PL L20X/0.40 Work distance:8.8 mm
	PL L40X/0.60 (spring) Work distance:3.98 mm
DIC observation system	10XDIC push-pull group
	20XDIC push-pull group
Eyepieces tube	Trinocular, Inclination of 30°, Binocular
Epi- illumination system	12V 50W, halogen lamp, adjustable brightness
	Integrated field diaphragm, aperture diaphragm and (Y,B,G, ground glass) switching device. Push-pull type analyzer and polarizer.
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: 2μm.
Nosepiece	Quintuple (Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:210mmX140mm,movingrange:75mmX50mm)
Transmitted illumination system	Abbe condenser NA.1.25 Rack & pinion adjustable
	Blue filter and Ground glass
	Collector for halogen lamp illumination and integrated field diaphragm
	12V 30W halogen lamp, adjustable brightness

## UMM-16A Upright Metallurgical Microscope

### Features:

UMM-16A reflected metallurgical microscope is suitable to observe the surfaces of non-transparent object. It is equipped with vertical illuminator, plan achromatic objectives with long working distance (no cover glass), wide-field eyepieces and set polarizer device in trinocular. It provide clear and high-contrast picture, beautiful sculpt, convenient operation, etc. It is the ideal instruments for research work in metallography, mineralogy, precision engineering, electronics, etc. It is suitable for scientific research, teaching demonstration in the colleges and factory.

- ◆ With plan achromatic objectives with long working distance (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field.
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm.
- ◆ 6V 20W halogen lamp, adjustable brightness.
- ◆ Trinocular, can switch to observe normally or to observe the polarize, can send 100% of light to the binocular eyepieces or to the top port.



### Specifications:

Model	UMM-16A
Eyepiece	Wide field WF10X(Φ18mm)
Objective	Plan achromatic objectives with long working distance (no cover glass) PL 5X/0.12
	Plan achromatic objectives with long working distance (no cover glass) PL L10X/0.25
	Plan achromatic objectives with long working distance (no cover glass) PL L20X/0.40
	Plan achromatic objectives with long working distance (no cover glass) PL L50X/0.70
Eyepieces tube	Trinocular, Inclination of 30°, (Analyzer with field diaphragm to switch)
Vertical illumination unit	6V 20W, Halogen lamp, Adjustable brightness
	Vertical illumination With field diaphragm ,aperture diaphragm and polarizer,(Y,B,G)filter and Ground glass
Focus system	Coaxial coarse/fine focus system, with tension adjustable and up stop, minimum division of fine focusing: 2μm.
Nosepiece	Quadruple Backward ball bearing inner locating
Stage	Double layer mechanical ( Size: 210mmX140mm,movingrange:75mmX50mm)

## UMM-16B Upright Metallurgical Microscope

### Features:

UMM-16B reflected and transmitted microscope is suitable to observe surfaces of non-transparent object or transparent object. It is equipped with vertical illuminator, plan achromatic objectives with long working distance (no cover glass), wide-field eyepieces and set polarizer device in trinocular. It provide clear and high-contrast image, beautiful sculpt, convenient control, etc. It is the ideal instruments in research work in biology, metallography, mineralogy, precision engineering, electronics, etc. It is suitable for scientific research, teaching demonstration in the colleges and factory.

- ◆ With plan achromatic objectives with long working distance (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field.
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm.
- ◆ With vertical illuminator and transmitted illuminator, can observe surfaces of non-transparent object or transparent object.
- ◆ 6V 20W halogen lamp, adjustable brightness.
- ◆ Trinocular, can switch to observe normally or to observe the Polarize, can send 100% of light to the binocular eyepieces or to the top port.



### Specifications:

Model	UMM-16B
Eyepiece	Wide field WF10X(Φ18mm)
Objective	Plan achromatic objectives with long working distance (no cover glass) PL 5X/0.12
	Plan achromatic objectives with long working distance (no cover glass) PL L10X/0.25
	Plan achromatic objectives with long working distance (no cover glass) PL L20X/0.40
	Plan achromatic objectives with long working distance (no cover glass) PL L50X/0.70
Eyepieces tube	Trinocular, Inclination of 30°, (Analyzer with field diaphragm to switch)
Vertical illumination unit	6V 20w, halogen lamp, adjustable brightness
	Vertical illumination with field diaphragm, aperture diaphragm and polarizer,(Y,B,G)filter and Ground glass
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: 2μm.
Nosepiece	Quadruple(Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:210mmX140mm,movingrange:75mmX50mm)
Vertical illumination unit	Abbe condenser NA.1.25 Rack & pinion adjustable
	Blue filter and Ground glass
	Collector for illumination with halogen lamp (With field diaphragm )
	6V 20w, halogen lamp, adjustable brightness

## Upright Metallurgical Microscope UMM-100 and UMM-200

The Upright Trinocular Metallurgical Microscope Has A Polariscope With A Big Working Stage.

### Features:

Upright design is suitable to find a fixture object and to observe, research and analyse the object on a broader surface. The instruments are widely applicable in the field of IT, PCB and micro pellets, threads, fibre, surface coatings etc., and testing, researching, and analysing metallurgical structure of materials. They are also broadly suitable for factories, laboratories, and teaching and researching areas.

A big shifting range loading stage is suitable to observe the specimen of large PCBs and silicon wafers etc.

The polarising co-axial epi-illuminating system, generating sharp pictures and clarifying contrasts, is proper for various complicated observations and shoots.

Swift co-axial vertical and horizontal shifting loading stage and a variety built-in filter switching make operation easy.



### Specifications:

Models		UMM-100	UMM-200	UMM-100A	UMM-200A
Optical system	Total amplification	50×100×200×400×600×			
	achromatic objective	PL 5× PLL 10× PLL 20× PLL 40×			
	Wide field	WF10×/18			
Attachment	Cross WF eyepiece and	10×zoom graduation 0.1/18 mm micrometer 0.01/1 mm			
Frame	Basic Structure	Upright Design, Hinge Trinocular Tube; 45°obliquity,			
	Revolving objective	5 hole ball bearing circumvolve			
	Double layer stage	230x230mm; move range: 150×150mm,		270x270mm, moving range 200x200mm	
	focusing system	Coaxial coarse and fine, Up-down adjusting range:35mm, Vernier Calibration 0.002			
	focusing modes	Lifting stage	Lifting	Lifting stage	Lifting
Illumination systems	Reflected illumination	Kohler Illumination, Variable Aperture and field diaphragm,			
		Inside switching color filters: yellow/green/blue/frosted			
		Built-in	External	Built-in	External
	Polarizing light system	Co-axial epi-illuminating polarizing setting: polarizer and analyzer			
Power supply		AC220V/50Hz 30W			
Package		Weight: 17Kg, Package Size: 550x540x470 Cm			

## UMM-300 Upright Metallurgical Microscope

### Features:

UMM-300 upright metallurgical microscope is suitable to observe surfaces of opaque object. It is equipped excellent UIS optical system and modularization function design so that update system expediently and achieved polarization, dark field observation. Compact and steady main frame body is embodiment for the shock resistance. The ideal ergonomic design is adopted in this unit and has easier operation and wider space. This is ideal optical instrument for micro observation in metallographic structure and surface morphology. It is suitable for research in metallography, mineralogy, precision engineering, etc.



- ◆ With long working distance plan achromatic objectives (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field
- ◆ With large move range mechanical stages, moving range: 8"X8"(204mmX204mm)
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 0.8μm
- ◆ 6V 30W halogen lamp, adjustable brightness
- ◆ Trinocular, can switch to normally/polarize observation, bright field / dark field observation. Can send 100% of light to the binocular eyepieces or to the top port

### Specifications:

Model	UMM-300	UMM-300BD
		Equipped with bright field objectives
Eyepiece	Wide field WF10X(field number: Φ22mm)	
Infinity plan achromatic objective	PL L5X/0.12 (Work distance): 26.1 mm	PL L5X/0.12 BD (Work distance): 9.70 mm
	PL L10X/0.25 (Work distance): 20.2 mm	PL L10X/0.25 BD (Work distance): 9.30 mm
	PL L20X/0.40 (Work distance): 8.80 mm	PL L20X/0.40 BD (Work distance): 7.23mm
	PL L50X/0.70 (Work distance): 3.68 mm	PL L50X/0.70 BD (Work distance): 2.50 mm
	PL L80X/0.80 (Work distance): 1.25 mm	PL L80X/0.80 BD (Work distance): 1.25 mm
Epi- illumination system	6V30W halogen and brightness enable control	12V50W halogen and brightness enable control
	Integrated field diaphragm, aperture diaphragm and (Y, B, G, ground glass) switching device. Push-pull type analyzer and polarizer.	
Eyepieces tube	Trinocular inclined 30°, can be shot in 100% light flux.	
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: 0.7μm.	
Nosepiece	Quintuple (Backward ball bearing inner locating)	
Stage	Mechanical stage size: 280mmX270mm (moving range: 204mmX204mm)	



## UMM-300DIC Upright Metallurgical Microscope

### Features:

UMM-300DIC differential interference contrast microscope is suitable to observe many different kinds of object. It is equipped with transmitted illuminator and reflected DIC system, infinity plan achromatic objectives with long working distance, wide-field eyepieces and polarizer device. It provides clear and 3D image, beautiful sculpt, convenient control, etc. It is the ideal instruments in research work in biology, metallography, mineralogy, precision engineering, electronics, etc.

- ◆ Excellent UIS optical system can obtain excellent optical performance.
- ◆ Compact and steady main frame body is embodiment for the shock resistance.
- ◆ The large-mobile range mechanical stage is adapted to observation big size specimen or quick check.
- ◆ Modularization function design so that update system expediently and achieved polarization,DIC observation.
- ◆ Ideal ergonomic design is adopted in this unit and have easier operation and wider space.



### Specifications:

	Type	Magnification	Number aperture	Working distance (mm)	Thickness of cover glass (mm)
Objective (Infinity and long working distance plan achromatic objective)	Bright Field objective	5X	0.12	26.1	0
		10X	0.25	20.2	0
		20X	0.4	8.8	0
		40X	0.6	3.98	0
		80X	0.8	1.28	0

Eyepiece	10X Wide-field plan eyepiece (field of view Φ18mm)
Eyepiece tube	Inclination of 30° and interpupillary distance is 53-75mm
Focusing system	Coaxial coarse/fine focus, with tension adjustable and up stop minimum division of fine focusing: 0.8μm
Nosepiece	Quintuple (Backward ball bearing inner locating)
Stage	Mechanical stage size: 280mmX270mm (moving range: 204mmX204mm)
Polarization Unit	Polarizer enable 360°rotate and switched in or out
	Analyzer can be switched in or out
Light source DIC observation system	12V 50W halogen, brightness enable control
	10X DIC push-pull group
	20X DIC push-pull group

## BM-100 Inverted Microscope

BM-100 Inverted microscope is equipped with wide field eyepieces, long working distance plan achromatic objectives, long working distance condenser and phase contrast unit. It can be observed transparent and unfinished living specimen in culture bottle or culture utensil. It is the ideal instrument suitable for research of living specimen structure, liquid, deposits and so on. It also can be used in research institutes, universities, medical treatment, agriculture and animal husbandry etc.



### Features:

- ◆ Equipped with wide field eyepieces, long working distance plan achromatic objectives
- ◆ Equipped with phase contrast unit, include long working distance condenser, phase contrast objective and centering telescope
- ◆ Coaxial coarse/fine focus system with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ 6V 20W halogen lamp with brightness control

### Specification List:

Model	BM-100
Eyepiece	Wide field WF10X(Φ20mm)
Objective	Long working distance plan achromatic PL L 10X/0.25
	Long working distance plan achromatic PL L 25X/0.40
	Long working distance plan achromatic PL L 40X/0.60
	Long working distance plan achromatic phase contrast objective PL L 10X/0.25 PHP
Eyepiece tube	Trinocular (Inclination of 30°, 100% image light for photography capable)
Focus system	Coaxial coarse/fine focus, with tensional adjustable and up stop minimum division of fine focusing: 2μm.
Nosepiece	Quadruple (Ball bearing inner locating)
Stage	Double layer mechanical ( Size200mmX152mm,moving range:75mmX30mm )
Shelf of specimen	Match to install Φ68mm or 77mmX33mm culture utensil
	Match to install Φ68mm culture utensil
Filter	Blue filter Green filter Frosted filter
Impellent style phase contrast unit	Centering telescope
	10X Impellent style phase plate
	Condenser Rack & pinion adjustable, NA=0.4,working distance: 30mm
Light source	6V 20W Halogen lamp with brightness control.

### Optional:

Name	Technique parameter	
Eyepiece	WF16X(Φ11mm)	
	Dividing 10X(Φ20mm), 0.1mm/Div	
Nosepiece	Quintuple ( Ball bearing inner locating )	
Condenser	Ultra long working distance,W.D.:70mm	
Filter	Yellow filter	
Impellent style phase contrast unit	Objectives	Long working distance plan achromatic phase contrast objective PL L 25X/0.40 PHP
		Long working distance plan achromatic phase contrast objective PL L 40X/0.60 PHP
	Impellent phase plate	25X
		40X
Sliding phase contrast unit	Objectives	Long working distance plan achromatic phase contrast objective PL L 10X/0.25 PHP2
		Long working distance plan achromatic phase contrast objective PL L 25X/0.40 PHP2
		Long working distance plan achromatic phase contrast objective PL L 40X/0.60 PHP2
	Sliding phase plate	10X
		25X/40X
Condenser Rack & pinion adjustable, NA=0.4,working distance: 55mm		
CCD adapter	0.4X 0.5X 1X 0.5X with dividing 0.1mm/Div	

## BM-200 Inverted Microscope

BM-200 Inverted microscope is equipped with wide field eyepieces, long working distance plan achromatic objectives and very long working distance condenser and phase contrast unit. It can be observed transparent and unfinished living specimen in culture bottle or culture utensil. It is the ideal instrument suitable for research of living specimen structure, liquid, deposits and so on. It also can be used in research institutes, universities, medical treatment, agriculture and animal husbandry, etc.

### Features:

- ◆ Equipped with wide field eyepiece, long working distance plan achromatic objectives
- ◆ Equipped with phase contrast unit, include very long working distance condenser, phase contrast objective and centering telescope
- ◆ Coaxial coarse/fine focus system with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ 6V30W halogen lamp with brightness control



### Specification List:

Model	BM-200
Eyepiece	Wide field WF10X(Φ20mm)
Objective	Long working distance plan achromatic PL L 10X/0.25
	Long working distance plan achromatic PL L 25X/0.40
	Long working distance plan achromatic PL L 40X/0.60
	Long working distance plan achromatic phase contrast objective PL L 10X/0.25 PHP2
Eyepiece tube	Trinocular (Inclination of 30°, 100% image light for photography capable)
Focus system	Coaxial coarse/fine focus, with tensional adjustable and up stop minimum division of fine focusing: 2μm.
Nosepiece	Quadruple ( Ball bearing inner locating )
Stage	Double layer mechanical (Size: 224mm x 208mm, Moving Range: 112mm x 79mm)
Shelf of specimen	Match to install Φ68mm or 77mm x 29mm culture utensil
	Match to install 82mm x 57mm culture utensil
	Match to install 128mm x 85mm 96 holes culture utensil
Filter	Blue filter
	Green filter
	Frosted filter
Sliding phase contrast unit	Centering telescope
	10X Sliding phase plate
	Condenser Rack & pinion adjustable, NA=0.4, working distance: 50mm
Light source	6V 30W Halogen lamp with brightness control.

### Optional Accessories:

Name	Sort/Technique parameter	
Eyepiece	Wide field WF16X(Φ11mm)	
	Dividing 10X(Φ20mm), 0.1mm/Div	
Nosepiece	Quintuple(Ball bearing inner locating)	
Condenser	Ultra long working distance, W.D.: 70mm	
Filter	Yellow filter	
Sliding phase contrast unit	Objectives	Long working distance plan achromatic phase contrast objective PL L 25X/0.40 PHP2
		Long working distance plan achromatic phase contrast objective PL L 40X/0.60 PHP2
	Sliding phase plate	25X/40X
CCD adapter	0.4X	
	0.5X	
	1X	
	0.5X with dividing 0.1mm/Div	

## BM-300 Inverted Microscope

BM-300 Inverted microscope is equipped with wide field eyepieces, long working distance plan achromatic objectives and very long working distance condenser and phase contrast unit. It can be observed transparent and unfinished living specimen in culture bottle or culture utensil. It is the ideal instrument suitable for research of living specimen structure, liquid, deposits and so on. It also can be used in research institutes, universities, medical treatment, agriculture and animal husbandry, etc.



### Specification List:

Model	BM-300	
Eyepiece	Wide field WF10X(field number:Φ22mm) Centering telescope	
Infinity and long working distance plan achromatic objective	Objective	PLL 10X0.25 Work distance: 4.3 mm, Cover glass thickness: 1.2mm.
		PLL 20X0.40 Work distance: 8.0 mm, Cover glass thickness: 1.2mm.
		PLL 40X0.60 Work distance: 3.5 mm, Cover glass thickness: 1.2mm.
	Phase Contrast Objective	PLL 10X0.25 PHP2 Work distance: 4.3 mm. Cover glass thickness: 1.2mm.
Eyepiece tube	Inclination angle is 45° and interpupillary distance is 53~75mm.	
Focus system	Coaxial coarse/fine focus, with tension adjustable and up stop minimum division of fine focusing is 2μm.	
Nosepiece	Quintuple nosepiece	
Stage	Fixed stage overall size is 227mmX208mm	
	Glass rotundity stage overall size is Φ118mm	
	Mechanical moving device, moving range is 77mm (longitudinal)X114mm (transverse)	
	Culture dish holder 1	Inside locating slot size: 86mm (W)X129.5mm (L), optional with a circular culture dish Φ87.5mm
	Culture dish holder 2	Inside locating slot size: 34mm (W)X77.5mm (L), optional with a circular culture dish Φ68.5mm
	Culture dish holder 3	Inside locating slot size: 57mm (W)X82mm (L)
Condenser system	Long working distance condenser, working distance: 55mm, and with turn plate phase contrast unit	
Illumination system	6V30W halogen, brightness enable control	
Filter	Frosted glass and blue , green filter	

### Optional Accessories:

Name	Sort/Technique parameter
eyepiece	Dividing eyepiece(field number:Φ22mm) 0.10mm/Div
Phase Contrast Objective	PL L20X/0.40 PHP2 Work distance: 8.0 mm
	PL L40X/0.60 PHP2 Work distance: 3.5 mm
Nosepiece	Hexad nosepiece
CCD Adapter	0.5X
	1X

## BM-15A Biological Microscopes

BM-15A biological microscopes are equipped with achromatic objectives and wide field eyepieces. They have clear image and wide view field through optical system. They can be broadly applied in biology medicine, agriculture etc. They are the ideal instruments for medical treatment, teaching and scientific research.



### Features:

- ◆ With wide field eyepieces and achromatic objectives, the field of view is widely and clear
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ 6 Volt 20 Watt Halogen lamps with brightness control.

### Specification List:

Model	BM-15A
Eyepiece	Wide field WF10X(Φ18mm)
Objective (Achromatic)	4X/0.10; 10X/0.25 ; 40X/0.65(Spring); 100X/1.25(Spring, oil)
Eyepiece tube	Binocular(Inclination of 30°)
Focus system	Coaxial coarse/fine focus, with tensional adjustable and up stop, minimum division of fine focusing: 2μm.
Nosepiece	Quadruple(Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:135mmX125mm, Move range: 75mmX35mm)
Abbe condenser	N.A.1.25 Rack & pinion adjustable
Filter	Blue filter; Frosted filter
Collector	For halogen lamp
Light source	6V 20W Halogen lamp with brightness control

### Optional accessories:

Name	Technique parameter		
Eyepiece	Wide field WF16X(Φ11mm) ; Dividing 10X(Φ18mm) 0.1mm/Div		
Objective	Plan achromatic 4X/0.10	Eyepiece tube Monocular(Inclination of 30°)	
	Plan achromatic 5X/0.12		Binocular, Sliding(Inclination of 45°)
	Plan achromatic 10X/0.25		Trinocular, Sliding(Inclination of 45°)
	Plan achromatic 20X/0.40		Trinocular( Inclination of 30°)
	Plan achromatic 40X/0.65(Spring)		Dual viewing tube( Inclination of 30°)
	Plan achromatic 60X/0.85(Spring)		
	Plan achromatic 100X/1.25(Spring, oil)		
Nosepiece	Quintuple(Backward ball bearing inner locating)		
Filter	Green filter; Yellow filter		
Light source	LED Collector	Bright and white light	
Condenser	Dark field	Dry; Immersion	
Phase contrast unit	Eyepiece	Centering telescope	
	plan achromatic Objectives	10X/0.25 PHP; 20X/0.40 PHP; 40X/0.65 PHP(Spring) ; 100X/1.25 PHP(Spring, oil)	
		(PH-φñ) Turnplate phase contrast condenser; (PH-φδ) Turnplate phase contrast condenser	
		Flashboard phase contrast condenser; Pull board phase contrast condenser	
Infinity optical system	Eyepiece tube	Binocular (Inclination of 30°); Trinocular (Inclination of 30°)	
	Eyepiece	Centering telescope	
	Objectives	Infinity plan achromatic 4X/0.10; 10X/0.25; 20X/0.40	
		Infinity plan achromatic 40X/0.65(Spring); 100X/1.25(Spring, oil)	
		Infinity phase contrast plan achromatic 10X/0.25 PHP	
		Infinity phase contrast plan achromatic 20X/0.40 PHP	
		Infinity phase contrast plan achromatic 40X/0.65 PHP(Spring) Infinity phase contrast plan achromatic 100X/1.25 PHP(Spring, Oil)	
CCD adapter	0.4X ; 0.5X; 1X; 0.5X with dividing 0.1mm/Div		
Facility polarize	Polarizer(360° rotatable stage); Analyzer		
Adapter( LED illumination)	Input: 110/230V; 50/60HZ Output: 9V 500mA		

## BM-16A Biological Microscopes

BM-16 series biological microscopes are equipped with achromatic objectives or semi-plan achromatic and wide field eyepieces. They provide clear image and wide field. They can be used for biology medicine and agriculture area widely. They are the ideal instruments in medical treatment and scientific research.

### Features:

- ◆ With wide field eyepieces, achromatic objectives or semi-plan achromatic, the field of view is widely and clear
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ 6 Volt 20 Watt Halogen lamps with brightness control.



### Specification list:

Model	BM-16A	BM-16B
Eyepiece	Wide field WF10X(Φ18mm)	
Objective	Achromatic 4X/0.10	Semi-plan achromatic 4X/0.10
	Achromatic 10X/0.25	Semi-plan achromatic 10X/0.25
	Achromatic 40X/0.65(Spring)	Semi-plan achromatic 40X/0.65(Spring)
	Achromatic 100X/1.25(Spring, oil)	Semi-plan achromatic 100X/1.25(Spring, oil)
Eyepiece tube	Binocular (Inclination of 30°)	
Focus system	Coaxial coarse/fine focus, with tensional adjustable and up stop minimum division of fine focusing: 2μm.	
Nosepiece	Quadruple(Frontward ball bearing inner locating)	
Stage	Double-layer mechanical (Size:135mmX125mm, Move range: 75mmX35mm)	
Abbe condenser	N.A.1.25 Rack & pinion adjustable	
Filter	Blue filter	
	Frosted filter	
Collector	For halogen lamp	
Light source	6V 20W Halogen lamp with brightness control	

## BM-17A Biological Microscopes

BM-17 series biological microscopes are equipped with achromatic objectives or semi-plan achromatic and wide field eyepieces. They provide clear image and wide field. They can be used for biology medicine and agriculture area widely. They are the ideal instruments in medical treatment and scientific research.



### Features:

- ◆ With wide field eyepieces, achromatic objectives or semi-plan achromatic, the field of view is widely and clear
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ 6Volt 20Watt Halogen lamp with brightness control

### Specification List:

Model	BM-17A	BM-17B
Eyepiece	Wide field WF10X(Φ18mm)	
Objective	Achromatic 4X/0.10	Semi-plan achromatic 4X/0.10
	Achromatic 10X/0.25	Semi-plan achromatic 10X/0.25
	Achromatic 40X/0.65(Spring)	Semi-plan achromatic 40X/0.65(Spring)
	Achromatic 100X/1.25(Spring, oil)	Semi-plan achromatic 100X/1.25(Spring, oil)
Eyepiece tube	Binocular (Inclination of 30°)	
Focus system	Coaxial coarse/fine focus, with tension adjustable and up stop minimum division of fine focusing: 2μm.	
Nosepiece	Quadruple ( Backward ball bearing inner locating )	
Stage	Double layer mechanical ( Size:135mm x 125mm, Move Range: 75mm x 35mm )	
Abbe condenser	N.A.1.25 Rack & pinion adjustable	
Filter	Blue filter	
	Frosted filter	
Collector	For halogen lamp	
Light source	6V 20W Halogen lamp with brightness control	

## BM-18A biological microscopes



BM-18 series biological microscopes are equipped with achromatic objectives or semi-plan achromatic, wide field eyepieces. They have clear image, wide field, beautiful sculpt, convenient operation etc. They can be used for medicine, and assay area widely. They are the ideal instruments in medical treatment, teaching demonstration and scientific research.

### Features:

- ◆ With wide field eyepieces, semi-plan achromatic or achromatic objectives, the field of view is widely and clear
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ 6Volt 20Watt Halogen lamp with brightness control

### Specification List:

Model	BM-18A	BM-18B
Eyepiece	Wide field WF10X (Φ18mm)	
Objective	Achromatic 4X/0.10	Semi-plan achromatic 4X/0.10
	Achromatic 10X/0.25	Semi-plan achromatic 10X/0.25
	Achromatic 40X/0.65(Spring)	Semi-plan achromatic 40X/0.65(Spring)
	Achromatic 100X/1.25(Spring, oil)	Semi-plan achromatic 100X/1.25(Spring, oil)
Eyepiece tube	Binocular (Inclination of 30°)	
Focus system	Coaxial coarse/fine focus, with tension adjustable and up stop minimum division of fine focusing: 2μm.	
Nosepiece	Quadruple ( Backward ball bearing inner locating )	
Stage	Double layer mechanical ( Size:160mmX140mm, Move Range: 75mm x 50mm)	
Abbe condenser	N.A.1.25 Rack & pinion adjustable	
Filter	Blue filter	
	Frosted filter	
Collector	For halogen lamp	
Light source	6V 20W Halogen lamp with brightness control	



## BM-20A biological microscopes



BM-20 series biological microscopes are equipped with plan achromatic objectives and wide field eyepieces. They provide clear image, wide field, convenience operation. They can be used for biology medicine agriculture and industry area widely. They are the ideal instrument in medical treatment, teaching demonstration and scientific research.

### Features:

- ◆ With wide field eyepieces and plan achromatic objectives, the field of view is widely and clear
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ Using Kohler illumination with 6 Volt 20 Watt Halogen lamps with brightness control.

### Specification list:

Model	BM-20A	BM-20B
Eyepiece	Wide field WF10X(Φ20mm)	
Objective	Plan achromatic PL 4X/0.10	Plan achromatic PL 4X/0.10
	Plan achromatic PL 10X/0.25	Plan achromatic PL 10X/0.25
		Plan achromatic PL 20X/0.40
	Plan achromatic PL 40X/0.65(Spring)	Plan achromatic PL 40X/0.65(Spring)
	Plan achromatic PL 100X/1.25(Spring, oil)	Plan achromatic PL 100X/1.25(Spring, oil)
Eyepiece tube	Binocular(Inclination of 30°)	
Focus system	Coaxial coarse/fine focus, with tensional adjustable and up stop minimum division of fine focusing: 2μm.	
Nosepiece	Quadruple(Backward ball bearing inner locating)	Quintuple(Backward ball bearing inner locating)
Stage	Double layer mechanical ( Size:160mmX140mm, Move range: 75mmX50mm)	
Abbe condenser	N.A.1.25 Rack & pinion adjustable	
Filter	Blue filter	
	Frosted filter	
Collector	For halogen lamp	
Light source	6V 20W Halogen lamp with brightness control	

## BM-21 Biological Microscopes



BM-21 biological microscopes are equipped with plan achromatic objectives and wide field eyepieces. They have clear image, wide field, beautiful sculpt, convenient operation and etc. they can be used for biology, medicine, agriculture and industry area widely. They are the ideal instruments in medical treatment, teaching demonstration and scientific research.

### Features:

- ◆ With wide field eyepieces and plan achromatic objectives, the field of view is widely and clear
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ Using Kohler illumination with 12V 50w halogen lamp with brightness control.

### Specification list:

Model	BM-21
Eyepiece	WF10X(Φ20mm)
Objective	Plan achromatic PL 4X/0.10
	Plan achromatic PL 10X/0.25
	Plan achromatic PL 20X/0.40
	Plan achromatic PL 40X/0.65(Spring)
	Plan achromatic PL 100X/1.25(Spring, oil)
Eyepiece tube	Binocular(Inclination of 30°)
Focus system	Coaxial coarse/fine focus, with tensional adjustable and up stop minimum division of fine focusing: 2μm.
Nosepiece	Quintuple ( Backward ball bearing inner locating )
Stage	Double layer mechanical ( Size:160mm x 140mm, Move Range: 75mm x 50mm )
Abbe condenser	N.A.1.25 Rack & pinion adjustable
Filter	Blue filter
	Frosted filter
Collector	For halogen lamp
Light source	12V 50W Halogen lamp with brightness control.

## BM-28 Biological Microscopes



BM-28 biological microscopes are equipped with infinity plan achromatic objectives and wide field eyepieces. They have beautiful sculpt and provide clear image, wide field, convenience operation. They can be used for biology medicine agriculture and industry area widely. They are the ideal instrument in medical treatment, teaching demonstration and scientific research.

### Specification list:

Model	BM-28
Eyepiece	Wide Field WF10X ( Field Number: $\Phi$ 22mm)
Objective	PL 4X/0.10 Working Distance: 19.8mm
	PL 10X/0.25 Working Distance: 5.0mm
	PL 40X/0.65 ( Spring ) Working Distance: 0.66mm
	PL 100/1.25 ( Spring, Oil ) Working Distance: 0.36mm
Eyepiece	Trinocular Tube, Inclination 30o
Nosepiece	Quadruple ( Backward ball bearing inner locating )
Focusing System	Coaxial coarse/fine focusing system with tension adjustable and up stop Minimum division of fine focusing is 2 $\mu$ m.
Transmitted Illumination System	6V, 20W Halogen Lamp
	Abbe Condenser NA. 1.25, Rack and Pinion Adjustable
	Attached Blue Filter & Frosted Glass
Stage	Double Layer Mechanical Stage Moving Range: 75 x 50mm Overall Size: 193 x 155mm

### Optional Accessories:

Eyepiece	Dividing Eyepiece ( Field Number: $\Phi$ 22mm , 0.10mm/Div. )		
Objective	Infinity Plan Achromatic Objective PL 20X/0.40 Working Distance: 8.8mm		
	Infinity Plan Achromatic Objective PL 60X/0.85 Working Distance: 0.25mm		
Phase Contrast Unit	Eyepiece	Centering Telescope	
	Objective	Infinity Phase Contrast Plan Achromatic 10X/0.25 PHP	
		Infinity Phase Contrast Plan Achromatic 20X/0.40 PHP	
		Infinity Phase Contrast Plan Achromatic 40X/0.65 PHP ( Spring )	
		Infinity Phase Contrast Plan Achromatic 100X/1.25 PHP ( Spring, Oil )	
Sliding Phase Contrast Condenser			
Polarizing System	Polarizer	3600 Rotatable Stage	
	Analyzer	Sliding Type	
Filter	Blue Filter / Green Filter		
CCD Adapter	0.4X 0.5X 1X 0.5X With Divided Scale ( 0.10mm/Div. )		
Illumination System	6V, 30W Halogen Lamp		

## BM-30 Biological Microscope



BM-30 series biological microscope is equipped with plan achromatic objectives and wide field eyepieces. It provides clear image, wide field, convenience operation. It can be used for biology medicine agriculture and industry area widely. It is the ideal instrument in medical treatment,teaching demonstration and scientific research.

### Features:

- ◆ With wide field eyepieces and plan achromatic objectives, the field of view is widely and clear
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ Using Kohler illumination with 6V 20W halogen lamp with brightness control

### Specification list:

Model	BM-30A	BM-30B
Eyepiece	WF10X(Φ20mm)	
Objective	Plan achromatic PL 4X/0.10	Plan achromatic PL 4X/0.10
	Plan achromatic PL 10X/0.25	Plan achromatic PL 10X/0.25
		Plan achromatic PL 20X/0.40
	Plan achromatic PL 40X/0.65 (Spring)	Plan achromatic PL 40X/0.65(Spring)
	Plan achromatic PL 100X/1.25 (Spring, oil)	Plan achromatic PL 100X/1.25(Spring, oil)
Eyepiece tube	Binocular (Inclination of 30°)	
Focus system	Coaxial coarse/fine focus, with tension adjustable and up stop minimum division of fine focusing: 2μm.	
Nosepiece	Quadruple(Backward ball bearing inner locating)	Quintuple(Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:210mmX140mm, Move range: 75mmX50mm)	
Abbe condenser	N.A.1.25 Rack & pinion adjustable	
Filter	Blue filter	
	Frosted filter	
Collector	For halogen lamp	
Light source	6V 20W Halogen lamp with brightness control	

## BM-32A Biological Microscopes

BM-32A biological microscopes are equipped with infinity plan achromatic objectives and wide field eyepieces. They have beautiful sculpt and provide clear image, wide field, convenience operation. They can be used for biology medicine agriculture and industry area widely. They are the ideal instrument in medical treatment, teaching demonstration and scientific research.



### Features:

- ◆ Equipped with wide field eyepieces and infinity plan achromatic objectives, the field of view is widely and clear
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ Maximal movement of stage is 30mm
- ◆ Using Kohler illumination with Integrated field diaphragm and 6V30W halogen lamp, adding radiator and brightness control.
- ◆ Trinocular can be observation for eyepieces and microphotography in 100% light flux, suits for low illuminance microphotography.

### Specification List:

Model	BM-32A	
Eyepiece	WF10X(Φ22mm)	
Objective	Infinity plan achromatic objective	
	PL 4X/0.10(Work distance): 19.8 mm	
	PL 10X/0.25(Work distance): 5.0mm	
	PL 40X/0.65(Spring)(Work distance): 0.66 mm	
Eyepiece tube	L3200HBG	Binocular (Inclination of 30°)
	L3200HTG	Trinocular(Inclination of 30°)
Focus system	Coaxial coarse/fine focus, with tension adjustable and up stop minimum division of fine focusing: 2μm.	
Nosepiece	Quadruple(Backward ball bearing inner locating)	
Stage	Double layer mechanical (Size:210mmX140mm, Move range: 75mmX50mm)	
Abbe condenser	N.A.1.25 Rack & pinion adjustable	
Filter	Blue filter	
	Frosted filter	
Collector	For halogen lamp (With field diaphragm )	
Light source	6V 30W Halogen lamp with brightness control	

## PM-1 Series Polarization Microscopes

PM-1 series polarization microscopes are utilized polarize light to observe and research the matter which have double refraction features, the user can make single polarizing view, orthogonal polarizing view, cone light view. They are applied in geology, chemicals, physic and leechdom fields. They are also widely used to observe the crystal of liquid macromolecule polymer, biomedical polymer and liquid crystal. They are the ideal instruments for scientific research and universities teaching demo.



### Features:

- ◆ Equipped with strain-free plan achromatic objectives or infinity strain-free plan achromatic objectives and wide field eyepiece
- ◆ Nosepiece can adjust the center of objective
- ◆ Coaxial coarse/fine focus system with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ Take-down style polarizer, 360°rotatable, have 0,90,180,270 four scale, located down the aperture diaphragm
- ◆ Impellent style analyzer, 360°rotatable, push in / out from optical path conveniently
- ◆ Revolving round stage, 360°part scale and graduated in 1°increments, minimum resolution 6' when using vernier scale, center adjustable and with tightener
- ◆ Illumination with 6V20W halogen lamp, adjustable brightness

### Specification list:

Model	PM-1	PM-1A
Eyepiece	Wide field WF10X(Φ18mm)	
	Division eyepiece 10X(Φ18mm) 0.1mm/Div	
Objective	Strain-free plan achromatic PL 4X/0.10	Infinity strain-free plan achromatic PL
	Strain-free plan achromatic PL 10X/0.25	Infinity strain-free plan achromatic PL
	Strain-free plan achromatic PL 40X/0.65(Spring)	Infinity strain-free plan achromatic PL
	Strain-free plan achromatic PL	Infinity strain-free plan achromatic PL
Eyepieces tube	Trinocular, ,inclination of 30°,100% image light for photography capable	
Intermediate attachment	360° rotatable with scale and minimum vernier	
	Bertrand lens ,impellent style, center adjustable	
	λ, λ/4 Compensator	
	λ/4 Compensator	
	Quarts wedge compensator	
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division	
Nosepiece	Quadruple (Frontward ball bearing inner locating)	
Stage	Rotatable stage, Diameter Φ150mm, 360° graduated (in 1° increments), minimum retardation	
Abbe condenser	NA.1.25 Rack & pinion adjustable	
Polarizer	360° rotatable, with four scale is 0°,90°,180°, 270°	
Filter	Frosted filter	
	Blue filter	
Collector	For illumination with halogen lamp (With field diaphragm)	
Illumination unit	With polarizer,6V 20w, halogen lamp, adjustable brightness	

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Eyepiece	Wide field WF16X(Φ11mm)	1051016
Eyepieces tube	Binocular, Inclination of 30°	11009
Objective	Strain-free plan achromatic PL 5X/0.12	2810105
	Strain-free plan achromatic PL 20X/0.40	2810120
	Strain-free plan achromatic PL 60X/0.85 (Spring)	2810160
	Infinity strain-free plan achromatic PL 4X/0.10	2820104
	Infinity strain-free plan achromatic PL 20X/0.40	2820120
Nosepiece	Quintuple(Frontward ball bearing inner locating)	32004
Filter	Green filter	115002
	Yellow filter	115003
CCD adapter	0.4X	810001
	0.5X	810004
	1X	810002
	0.5X with dividing 0.1mm/Div	810003
Camera	DV-1 With USB & video output	800001
	DV-2 With USB output	800003
	DV-3 With video output	800005
Photo unit	2.5X/4X Change over photograph attachment with 10X viewing eyepiece	840001
	4X Focusing photograph attachment	840002
	MD Adapter	840003
	PK Adapter	840004
Digital camera adapter	CANON(A610,A620,A630,A640)	820001



**PM1500 Series Transmitted and Reflected Polarization Microscopes**



PM1500  
(Transmitted illumination)



PM1503  
(Reflected illumination)



PM1530  
(Transmitted & reflected illumination)

PM1500 series transmitted and reflected polarization microscopes are utilized polarize light to observe and research the matter which have double refraction features, the user can make single polarizing observation, orthoscopic observation, conoscopic observation. They are applied in geology, chemicals, physic and leechdom fields. They are also widely used to observe the crystal of liquid macromolecule polymer, biomedical polymer and liquid crystal. They are the ideal instruments for scientific research and universities teaching demo.

**Features:**

- ◆ Transmitted, Reflected, transmitted/reflected illumination can be choosn
- ◆ Equipped with strain-free plan objectives(center adjustable) and wide field eyepiece
- ◆ Coaxial coarse/fine focus system with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ Rotatable stage, 360° graduated in 1° increments, minimum retardation resolution 6' center adjustable and with tightened-Stage vertical effective movement up to 30mm
- ◆ Wide voltage range power supply (85-265V 47-60HZ), 6V20W halogen lamp, brightness adjustable



**Specification list:**

Model		PM1500 (Transmitted illumination)	PM1530 (Transmitted & reflected illumination)	PM1503 (Reflected illumination)
Eyepiece		Wide field WF10X (Φ18mm)		
		Division eyepiece 10X (Φ18mm) 0.10mm/div		
Objective (center adjustable)		Strain-free plan achromatic objective (cover glass:0.17mm) PL 4X/0.10	Strain-free plan achromatic objective (no cover glass) PL 5X/0.12	
		Strain-free plan achromatic objective (cover glass:0.17mm) PL 10X/0.25	Strain-free plan achromatic objective (no cover glass) PL L 10X/0.25	
		Strain-free plan achromatic objective(cover glass:0.17mm) PL 40X/0.65 (spring)	Strain-free plan achromatic objective (no cover glass) PL L40X/0.60 (spring)	
		Strain-free plan achromatic objective(cover glass:0.17mm) PL 60X/0.85 (spring)	Strain-free plan achromatic objective (no cover glass) PL L 60X/0.75 (spring)	
		Reflected illumination	Polarizer Illumination	Rotatable 6V 20w, halogen lamp, adjustable brightness
Transmitted illumination	Polarizer	360° rotatable, have 0,90,180,270 four scale		
	Collector	For halogen lamp illumination		
	Illumination	6V 20w, halogen lamp, adjustable brightness		
	Abbe condenser	N.A. 1.25 Rack & pinion adjustable		
Eyepieces tube		Trinocular, Inclination of 30°, can send 100% of the image light to top photography port		
Intermediate attachment		Built-in analyzer, can switch to normal observe or polarizing observe freely ,90° rotatable with scale, minimum retardation resolution 12'		
		Bertrand lens , impellent style , center adjustable		
		λ compensator		
		λ/4 compensator		
Nosepiece		Quadruple (Frontward ball bearing inner locating)		
Focus system		Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: 2μm		
Stage		Rotatable stage, Diameter Φ18150mm, 360° graduated (in 1° increments), minimum retardation resolution 6' center adjustable and with tightener		

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Eyepiece	Wide field WF16X (Φ11mm)	1051016
Objective (center adjustable)	Strain-free plan achromatic objective(cover glass:0.17mm) PL 20X/0.40	2810320
	Strain-free plan achromatic objective(cover glass:0.17mm) PL 100X/1.25 (Oil ,spring)	2810311
	Strain-free plan achromatic objective(no cover glass) PL L 20X/0.40	2850320
	Strain-free plan achromatic objective(no cover glass) PL L 50X/0.70	2850350
	Strain-free plan achromatic objective(no cover glass) PL L 80X/0.80	2850380
	Strain-free plan achromatic objective (Dry) (no cover glass) PL L 100X/0.85 (Spring)	2850311
Nosepiece	Quadruple (Frontward ball bearing inner locating) adjust the center of objective	31007
Slide moving holder	Moving range: 30mmX25mm	116202
CCD adapter	0.4X	810001
	0.5X	810004
	1X	810002
	0.5X with dividing 0.1mm/Div	810003
Camera	DV-1 With USB & video output	800001
	DV-2 With USB output	800003
	DV-3 With video output	800005
Photo unit	2.5X/4X Change over photograph attachment with 10X viewing eyepiece	840001
	4X Focusing photograph attachment	840002
	MD Adapter	840003
	PK Adapter	840004
Digital camera adapter	CANON (A610,A620,A630,A640)	820001

PM3230 Transmitted & Reflected Polarizing Microscope



PM3230 transmitted & reflected polarizing microscope is utilized polarizing light to observe and research the matter which have double refraction features, the user can make single polarizing observation, orthogonal observation, conoscopic observation. It is applied in geology, chemicals, physics and leechdom fields, widely used to observe the crystal of liquid macromolecule polymer, biomedical polymer and liquid crystal. It is the ideal instrument for scientific research and universities teaching demo. Features

**Features:**

- ◆ Adopt infinity optical system and modularization function design.
- ◆ Infinity long W.D plan objectives, the field of view is widely and clear.
- ◆ Wide-field plan eyepieces: field number  $\Phi 22\text{mm}$ .
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing:  $2\mu\text{m}$ .
- ◆ Polarizing unit can be move out or into optical path, polarizer and analyzer can be rotated from  $0^\circ$  to  $360^\circ$ .
- ◆ Rotatable stage,  $360^\circ$  graduated in  $1^\circ$  increments, minimum retardation resolution  $6'$  center adjustable and with tightener. Stage vertical effective movement up to 30mm
- ◆ Wide voltage range power supply (85-265V 50/60Hz), 6V30W halogen lamp, brightness adjustable.
- ◆ Trinocular can be observation for eyepieces and microphotography in 100% light flux, suits for low illuminance microphotography.

**Specification list:**

Model	PM-3230
Eyepiece	Wide field WF10X(Φ22mm)
	Dividing eyepiece(field number:Φ22mm) 0.10mm/Div
Objective	Strain-free plan achromatic objective (no cover glass)
	PL L5X/0.12 (Work distance): 26.1 mm
	PL L10X/0.25 (Work distance): 20.2 mm
	PL L40X/0.60 (spring) (Work distance): 3.98 mm
Reflected illuminating system	PL L60X/0.70£ (spring) (Work distance): 3.18 mm
	6V30W halogen, brightness enable control.
	Polarizer can be rotated 360°.
	Analyzer can be rotatable 360° with scale and minimum vernier
	Integrated field and aperture diaphragm.
Nosepiece	Quadruple (the center of objective is adjustable )
Intermediate attachment	Puller type bertrand lens and center adjustable.
Compensator	$\lambda$ , $\lambda/4$ and quarts wedge compensator.
Eyepiece tube	Trinocular is inclined 30° and enable to shoot in 100% light flux.
Focus system	Coaxial coarse/fine focus with tension adjustable and up stop device, minimum division of fine focusing: 2 $\mu$ m.

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Infinity objective	Strain-free plan achromatic objective (no cover glass)	
	PL L 20X/0.40(Work distance): 8.80mm	
	PL L50X/0.70 (spring) (Work distance): 3.68 mm	
	PL L80X/0.80 (spring) (Work distance): 1.25 mm	
	PL L100X//0.85 (spring) (Work distance): 0.4 mm	
Nosepiece	Quintuple(Backward ball bearing inner locating)	
Slide moving holder	Moving range: 30mmX25mm	
CCD adapter	0.4X	
	0.5X	
	1X	
	0.5X with dividing 0.1mm/Div	
Camera	DV-1 Video output (380/520 TV line) USB output (0.42 M pixel)	
	DV-2 With USB output (1.3M,2.0M,3.0M pixel)	
	DV-3 With video output (380/520 TV line)	
Digital camera adapter	CANON(A570,A610,A620,A630,A640,A650,EF) NIKON( F)	
	DV-9 (9 M pixel)	

## FLM3001 Fluorescent Microscope



FLM3001 fluorescent microscope is used for fluorescence microscopy and transmitted field observation. It is equipped with infinity plan achromatic objectives and wide field eyepieces, have clear picture and wide view field. It is the ideal instrument in biology, cytology, oncology, genetics, immunology etc. It also can be used in scientific research, universities, medical treatment, epidemic prevention etc.

### Features:

- ◆ With wide field eyepieces and infinity plan achromatic objectives, the field of view is widely and clear
- ◆ Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division of fine focusing: 2μm
- ◆ 20W 6V halogen lamp with electronic dimmer

### Specification list:

Model	FLM3001
Eyepiece	Wide field WF10X(φ20mm)
Objective	Infinity plan achromatic Objectives PL 4X/0.10
	Infinity plan achromatic Objectives PL 10X/0.25
	Infinity plan achromatic Objectives PL 40X/0.65(Spring)
	Infinity plan achromatic Objectives PL 100X/1.25(Spring, oil)
Eyepiece tube	Trinocular (Inclination of 30°)
Focus system	Coaxial coarse/fine focus, with tensional adjustable and up stop minimum division of fine focusing: 2μm.
Nosepiece	Quadruple(Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:210mmX140mm, Move range: 75mmX50mm)
Abbe condenser	N.A.1.25 Rack & pinion adjustable
Filter	Blue filter
	Frosted filter
Collector	For halogen lamp
Light source	6V 20W Halogen lamp ,adjustable brightness
Reflected fluorescence system	Mercury lamp house 100W/DC
	Power supply unit:AV:110V or 220V
	Fluorescence filter system B exciton wavelength:420~485nm
	Fluorescence filter system G exciton wavelength:460~550nm
	Fluorescence filter system UV exciton wavelength:330~400nm
Fluorescence filter system V exciton wavelength:395~415nm	

**Optional accessories:**

Name	Sort/Technique parameter	NO.	
Eyepiece	WF16X( $\phi$ 11mm)	1051016	
	Dividing 10X( $\phi$ 20mm),0.1mm/Div	1121010	
Objectives	Infinity plan achromatic 20X/0.40	2060120	
Eyepiece tube	Binocular(Inclination of 30°)	11104	
Nosepiece	Quintuple(Backward ball bearing inner locating)	32002	
Filter	Green filter	115002	
	Yellow filter	115003	
Phase contrast unit	Eyepiece	Centering telescope	110002
	Objectives	Infinity phase contrast plan achromatic 10X/0.25 PHP	2470110
		Infinity phase contrast plan achromatic 20X/0.40 PHP	2470120
		Infinity phase contrast plan achromatic 40X/0.65 PHP(Spring)	2470140
		Infinity phase contrast plan achromatic 100X/1.25 PHP(Spring, oil)	2470111
	(PH-I) Turnplate phase contrast condenser		52001
	(PH-II) Turnplate phase contrast condenser		52004
	Flashboard phase contrast condenser		52002
	Pull board phase contrast condenser		52003
	CCD adapter	0.4X	810001
0.5X		810004	
1X		810002	
0.5X with dividing 0.1mm/Div		810003	
Camera	With USB & video output	800001	
	With USB output	800003	
	With video output	800005	
Digital camera adapter	CANON digital camera adapter(A610,A620,A630,A640)	820001	
Photograph unit	2.5X/4X Change over photograph attachment with 10X viewing eyepiece	840001	
	4X Focusing photograph attachment	840002	
	MD Adapter	840003	
	PK Adapter	840004	

## FLM3201 Fluorescent Microscope



FLM3201 fluorescent microscope is used for fluorescence microscopy and transmitted bright field observation. It is equipped with no magnification spherochromatic aberration infinity plan achromatic fluorescent objectives and wide field eyepieces, has clear and high contrast picture in your wide view field. The main body design meets with the ergonomics needs and makes you feel comfortable and relaxed in process of operation. It is the ideal instrument in biology, cytology, oncology, genetics, immunology etc. It also can be used in scientific research, universities, medical treatment, epidemic prevention etc.

### Features:

- ◆ Adopt infinity optical system and modularization function design.
- ◆ Equipped with infinity plan achromatic fluorescent objectives, enable obtain more clearer and brighter image.
- ◆ Wide-field plan eyepieces: field number  $\Phi 22\text{mm}$ .
- ◆ Coaxial coarse/fine focus system, with tension adjustable and limit stopper , minimum division of fine focusing:  $2\ \mu\text{m}$
- ◆ Transmitted illumination system: Integrated field diaphragm and 6V30W halogen lamp; Adding radiator and brightness control.
- ◆ Epi-illumination system: 100W/DC mercury lamp. The voltage of power supply is 220V or 110V.
- ◆ Trinocular can be observation for eyepieces and microphotography in 100% light flux, suits for low illuminance microphotography.

**Specification list:**

Model	FLM3201
Eyepiece	Wide field WF10X( $\phi$ 22mm)
Objective	Infinity plan achromatic objectives
	PL 4X/0.10 (Work distance): 19.8 mm
	PL 10X/0.25 (Work distance): 5.0 mm
	PLF L40X/0.85(Spring)(Work distance): 0.42mm(No magnification spherochromatic aberration )
	PL 100X/1.25(Spring, oil) (Work distance): 0.36mm
Eyepieces tube	Trinocular, Inclination of 30°.
Epi-fluorescent illumination system	Power supply unit, 110V or 220V can be selected.
	Mercury lamp is 100W/DC
	Turnplate Epi-fluorescence illuminator (UV.V.B.G filters system)
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of
Nosepiece	Quintuple(Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:210mmX140mm,movingrange:75mmX50mm)
Transmitted illumination system	Abbe condenser NA.1.25 Rack & pinion adjustable
	Blue filter and Ground glass
	Collector for halogen lamp illumination and integrated field diaphragm
	6V 30W halogen lamp, adjustable brightness

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Eyepiece	Dividing eyepiece(field number: $\phi$ 22mm) 0.10mm/Div	1122010
Objective	Infinity plan achromatic objective PL 60X/0.80(Work distance): 0.46 mm	2060160
	Infinity plan achromatic fluorescent objective	2610110
	PL FL10X/0.35(Work distance): 2.37 mm	
Filter	Green filter	115002
	Yellow filter	115003
CCD adapter	0.4X	810001
	0.5X	810004
	1X	810002
	0.5X with dividing 0.1mm/Div	810003
Camera	DV-1 Video output(380/520 TV line) USB output(0.42 M pixel)	800001
	DV-2 With USB output (1.3M,2.0M,3.0M pixel)	800003
	DV-3 With video output(380/520 TV line)	800005
Digital camera adapter	CANON(EF) NIKON(F)	820001

## FLM3201-LED Fluorescent Microscope



**FLM3201-LED** fluorescent microscope is used for fluorescence microscopy and transmitted field observation. It is equipped with no magnification spherochromatic aberration infinity plan achromatic fluorescent objectives and wide field eyepieces, has clear picture and wide view field. The transmitted and epi-fluorescent illumination light source are high power & brightness LED, but power consumption is lower and use life longer, very good radiating heat effect. Safely and comfortably using the instrument, the cost of use and maintenance are more lower. It is the ideal instrument in biology, cytology, oncology, genetics, immunology etc. It also can be used in scientific research, universities, medical treatment, epidemic prevention etc.

### Features:

- ◆ Adopt infinity optical system and modularization function design.
- ◆ Equipped with infinity plan achromatic fluorescent objectives, enable obtain more clearer and brighter image.
- ◆ Wide-field plan eyepieces: field number  $\Phi 22\text{mm}$ .
- ◆ Coaxial coarse/fine focus system, with tension adjustable and limit stopper , minimum division of fine focusing:  $2\mu\text{m}$
- ◆ Transmitted illumination: 3W high brightness white LED, brightness adjustable.
- ◆ Epi-illumination: 3W high brightness monochromatic LED, enable changing for different wave length LED, but the brightness can't be adjustable.
- ◆ Trinocular can be observation for eyepieces and microphotography in 100% light flux, suits for low illuminance microphotography.
- ◆ Wide voltage range power supply (85-265V 50/60Hz).



**Specification list:**

Model	FLM3201-LED
Eyepiece	Wide field WF10X( $\phi$ 22mm)
Objective	Infinity plan achromatic objectives
	PL 4X/0.10 (Work distance): 19.8 mm
	PL 10X/0.25 (Work distance): 5.0 mm
	PLF L40X/0.85 spring (Work distance): 0.42 mm (No magnification spherochromatic
	PL 100X/1.25(Spring, oil) (Work distance): 0.36mm
Eyepieces tube	Trinocular, Inclination of 30°.
Epi-fluorescent illumination system	3W high brightness LED. Enable selecting monochromatic or bichromatic LED for light source,
	Fluorescence filters: B(Blue) and G(Green).
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division
Nosepiece	Quadruple(Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:210mmX140mm,movingrange:75mmX50mm)
Transmitted illumination system	Abbe condenser NA.1.25 Rack & pinion adjustable
system	Blue filter and Ground glass
	Collector for LED illumination and integrated field diaphragm
	3W high brightness white LED, brightness adjustable.

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Eyepiece	Dividing eyepiece(field number ( $\phi$ 22mm) 0.10mm/Div	1122010
Objective	Infinity plan achromatic objective PL 60X/0.80(Work distance): 0.46 mm	2060160
	Infinity plan achromatic fluorescent objective	2610110
	PL FL10X/0.35(Work distance): 2.37 mm	
Nosepiece	Quintuple(Backward ball bearing inner locating)	32002
Filter	Green filter	115002
	Yellow filter	115003
LED	Violet(390nm~400nm)	/
	Ultraviolet(360nm~370nm)	/
Fluorescent filters	V(Violet)	/
	UV(Ultraviolet)	/
CCD adapter	0.4X	810001
	0.5X	810004
	1X	810002
	0.5X with dividing 0.1mm/Div	810003
Camera	DV-1 Video output(380/520 TV line) USB output (0.42 M pixel)	800001
	DV-2 With USB output (1.3M,2.0M,3.0M pixel)	800003
	DV-3 With video output(380/520 TV line)	800005
Digital camera adapter	CANON(EF) NIKON( F)	820001

**XTC SERIES STEREO MICROSCOPES**



XTC series stereo microscopes are a kind of positive image microscope; they have long working distance, clear and smooth image quality, wide field, convenience operation etc. They can be used for culture and education, scientific research, farming and forestry, electronics and precision machine industries widely.

**Features:**

- ◆ Eyepiece field is wide and clear.
- ◆ Equipped with two pairs of objectives
- ◆ Optical tube, 45° inclination. can be rotated 360°, interpupillary distance and the left eyepiece tube diopter can be adjusted,interpupillary distance adjustable range from 55mm~75mm.

**Specification list:**

Model								
	XTC200A	XTC200B	XTC200C	XTC200D	XTC300A	XTC300B	XTC300C	XTC300D
Eyepiece	WF10X(φ20mm)				WF10X(φ20mm)			
Objective	1X,3X		2X,4X		1X,3X		2X,4X	
Total magnification	10X,30X		20X,40X		10X,30X		20X,40X	
Visual field	φ20~φ6.7mm		φ10~φ5mm		φ20~φ6.7mm		φ10~φ5mm	
Working distance	88mm				88mm			
Vertical movement	88mm<h<265mm		88mm<h<130mm		88mm<h<265mm		88mm<h<130mm	
Base size	215X160X60mm				215X160X60mm			
Reflected light source	12V10W halogen lamp with reflector cup and adjustable brightness				12V10W halogen lamp with reflector cup and adjustable brightness			
Transmitted light source:	/				12V10W halogen lamp and adjustable brightness			

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Eyepiece	Divisional wide field eyepiece 10X(φ20mm) 0.1mm/Div	1111010

**XTD series stereo microscopes**



XTD series stereo microscopes are a kind of positive image microscope; they have long working distance, clear and smooth image quality, wide field, convenience operation etc. They can be used for culture and education, scientific research, farming and forestry, electronics and precision machine industries widely.

**Features:**

- ◆ Eyepiece field is wide and clear.
- ◆ XTD-100、XTD-200、XTD-300 series equipped with two pairs of objectives;
- ◆ Optical tube, 45° inclination. can be rotated 360°, interpupillary distance and the left eyepiece tube diopter can be adjusted

**Specification list:**

Model						
	XTD-100A	XTD-100B	XTD-200A	XTD-200B	XTD-300A	XTD-300B
Eyepiece	WF10X(φ20mm)		WF10X(φ20mm)		WF10X(φ20mm)	
Objective	1X,2X	2X,4X	1X,2X	2X,4X	1X,2X	2X,4X
Total magnification	10X,20X	20X,40X	10X,20X	20X,40X	10X,20X	20X,40X
Visual field	φ20, φ10	φ10, φ5	φ20, φ10	φ10, φ5	φ20, φ10	φ10, φ5
Work distance	50mm		50mm		50mm	
Vertical effective movement	50mm<H<95mm		50mm<H<115mm		50mm<H<115mm	
Base size	170X120X21mm		170X120X54mm		190X120X55mm	
reflected light	/	/	6V8W halogen lamp		6V8W halogen lamp	
transmitted light	/	/	/	/	6V8W halogen lamp	

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Eyepiece	Divisional wide field eyepiece 10X(φ20mm 0.1mm/Div)	1111010

**XTL series stereo zoom microscopes**



XTL series stereo zoom microscopes are a kind of positive image microscope, they are adopted horizontal knob to zoom control, they have long working distance, clear and smooth image quality, wide field, convenience operation etc. They can be used for culture and education, scientific research, farming and forestry, electronics and precision machine industries widely.

**Features:**

- Eyepieces field is wide and clear.
- Objectives range of zoom magnification 0.7X~4.5X
- Optical tube, 45° inclination. can be rotated 360° ,
- interpupillary distance and eyepieces diopter can be adjusted, interpupillary distance adjustable range from 55mm~75mm.

**Specification list:**

Eyepieces	WF10X (φ20mm)
Objective	Objectives range of zoom magnification 0.7X~4.5X
Total magnification	7X~45X
Visual field	φ28.5~φ4.5
Working distance	88mm

Model			
	XTL100A	XTL100B	XTL100C
	XTL100AT	XTL100BT	XTL100CT
Vertical movement	25mm≤h<265mm		25mm≤h<240mm
Table	/		42X42(mm)
Base size	240X180X25mm	300X240X25mm	240X180X25(mm)

Model				
	XTL200	XTL200A	XTL-300	XTL-300A
	XTL200T	XTL200AT	XTL-300T	XTL-300AT
Vertical movement	25mm≤h<265mm	25mm≤h<130mm	25mm≤h<265mm	25mm≤h<130mm
Base size	215X160X60mm		215X160X60mm	
Reflected light	12V10W halogen lamp		12V10W halogen lamp	
Transmitted light	/		12V10W halogen lamp	

Model					
	XTL400	XTL500	XTL600A	XTL600B	XTL600C
	XTL400T	XTL500T	XTL600AT	XTL600BT	XTL600CT
Vertical movement	35≤h<215	35≤h<265	35≤h<265	35≤h<265	35≤h<240
table range	/				42X42(mm)
Base size	260X290X55mm	300X240X25	240X180X25	300X240X25mm	240X180X25mm
Reflected light	12V10W	/	/	/	/
Transmitted light	12V10W	/	/	/	/

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Eyepiece	Wide field eyepiece WF10X(φ22mm)	1062010
	Wide field eyepiece WF15X(φ15mm)	1061015
	Wide field eyepiece WF20X(φ12mm)	1060020
	Wide field eyepiece WF25X(φ9mm)	1060025
	Divisional wide field eyepiece 10X(φ20mm) 0.1mm/Div	1111010
	Divisional wide field eyepiece 10X(φ22mm) 0.1mm/Div	1112010
Optical body	Trinocular body	602003
	Trinocular body	602004
Additional objective	0.5X W.D.137mm	621002
	0.75X W.D.103mm	622002
	1X W.D.88mm	623001
	1.5X W.D.48mm	624002
	2X W.D.29mm	625002
Illumination	8W/90~265V Annular LED illumination W.D.:35~200mm	630002
	5W,110V /220V Annular fluorescent illumination	630003
CCD adapter	0.5X	813004
	1X	813005
Camera	DV-1 With USB & video output	800001
	DV-2 With USB output	800003
	DV-3 With video output	800005

**XTM series monocular zoom microscopes**






XTM series monocular zoom microscopes, they have long working distance, clear and smooth image quality, convenience operation etc. They can be used for inspection of electro-industry product line and printed circuit board.

**Feature:**

- Standard C mount design, connecting the camera directly.
- Digital & video camera, CCD camera and photography eyepiece can be chosen.
- XTM-100 series are equipped with outside rotating optical body.
- XTM-200 series are equipped with inside rotating optical body, annular LED illumination can be chosen.
- Objective range of zoom magnification 0.7X~4.5X.

**specification list:**

Model			
	XTM-100A	XTM-100B	XTM-100C
CCD adapter	1X		
Objective	Objectives range of zoom magnification 0.7X~4.5X		
Working distance	88mm		
Vertical effective movement	10mm≤h<215mm	10mm≤h<265mm	10mm≤h<240mm
table move	/	/	42X42(mm)
Base size	260X290X55mm	300X240X25mm	240X180X25(mm)
Reflected light source	12V10W halogen lamp		/
Transmitted light source:	12V10W halogen lamp		/

Model			
	XTM-200A	XTM-200B	XTM-200C
CCD adapter	1X		
Objective	Objectives range of zoom magnification 0.7X~4.5X		
Working distance	88mm		
Vertical effective movement	10mm≤h<215mm	10mm≤h<265mm	10mm≤h<240mm
table move	/	/	42X42(mm)
Base size	260X290X55mm	300X240X25mm	240X180X25(mm)
Reflected light source	12V10W halogen lamp		/
Transmitted light source:	12V10W halogen lamp		/

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Eyepiece	Divisional wide field eyepiece 10X(φ18mm) 0.1mm/Div	1021010
	Divisional wide field eyepiece 10X(φ20mm) 0.1mm/Div	1111010
Eyepiece adapter	For divisional wide field eyepiece10X(φ20mm)	830008
Additional objective	0.3X W.D.249mm	620001
	0.5X W.D.152mm	621001
	0.75X W.D.113mm	622001
	1.5X W.D.55.5mm	624001
	2XW.D.40.7mm	625001
Illumination	8W/90j«265V Annular LED illumination W.D.:35~200mm	630001
CCD adapter	0.35X	813001
	0.5X	813002
Camera	Photography eyepiece with USB out	1096001
	Photography eyepiece with Video out	1108001
	DV-1 With USB & video output	800001
	DV-2 With USB output	800003
	DV-3 With video output	800005
	CCD Camera	800007