

**Sunny Instruments**  
**RX50M** Metallurgical Microscope



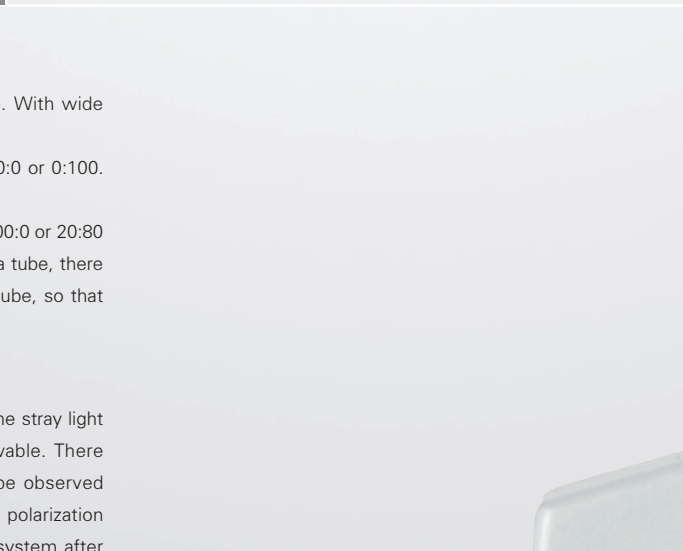
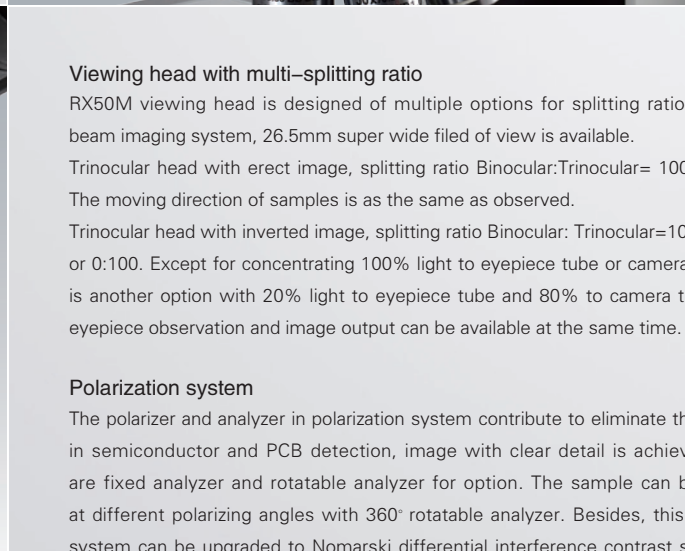
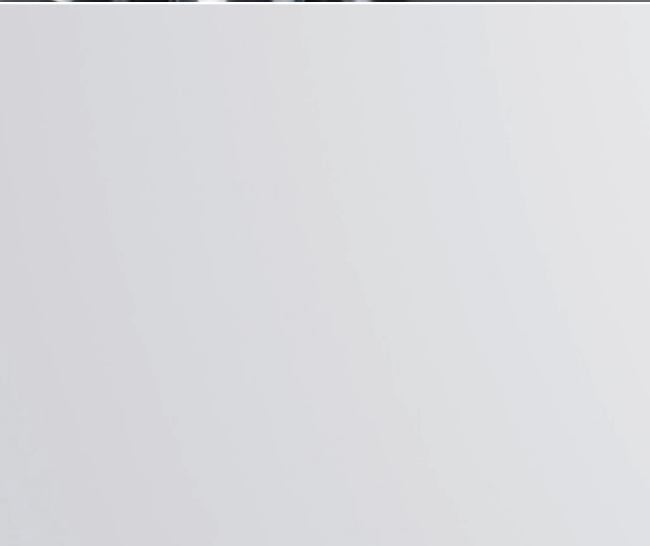


# RX50M

Adhering to the philosophy of continuous exploration & self-transcending for SOPTOP, new RX50M metallurgical microscope for research with a number of pioneering design in appearance and functions, is born to provide a perfect detection solution and develop a new pattern of industrial field.







#### Viewing head with multi-splitting ratio

RX50M viewing head is designed of multiple options for splitting ratio. With wide beam imaging system, 26.5mm super wide filed of view is available.

Trinocular head with erect image, splitting ratio Binocular:Trinocular= 100:0 or 0:100.

The moving direction of samples is as the same as observed.

Trinocular head with inverted image, splitting ratio Binocular: Trinocular=100:0 or 20:80 or 0:100. Except for concentrating 100% light to eyepiece tube or camera tube, there is another option with 20% light to eyepiece tube and 80% to camera tube, so that eyepiece observation and image output can be available at the same time.

#### Polarization system

The polarizer and analyzer in polarization system contribute to eliminate the stray light in semiconductor and PCB detection, image with clear detail is achievable. There are fixed analyzer and rotatable analyzer for option. The sample can be observed at different polarizing angles with 360° rotatable analyzer. Besides, this polarization system can be upgraded to Nomarski differential interference contrast system after installing a new developed DIC attachment.

#### Nomarski differential interference contrast system

The weeny asperities on the surface which can not be found in bright field, is able to be detected by using U-DICR attachment to create high contrast background. It is widely used for testing the conductive particle of LCD, surface scratch of precision disk.

#### Linkage between the neutral density filter and the switch for BF & DF

The lever in front of illuminator is used to switch between bright field and dark field, and it is in tandem with a neutral density filter (ND50). When you switch from DF to BF, the built-in ND50 filter takes the role to decay the light intensity. More scientific and more comfortable.







#### Optional nosepieces

The included angle between optical axis and rotation axis of multiple nosepiece is decreased to 15° . It is helpful to improve the accuracy of centering and focusing. Seven objectives at most can be assembled at the same time. Continuous and reasonable magnifications from low to high is achievable.

#### Ergonomic design

- The intensity can be flexibly adjusted by the dimming device which is located on the right side of frame. The voltage change all–digital displays. Adjusting intensity and coaxial focusing at the same time, improves the work efficiency.
- Reflected or transmitted illumination can be switched by the button on the digital dimming display. Using the RE–SET button to keep the light intensity at around 8V (with a camera mark on the dimming display) which is an optimal voltage for photomicrography.
- Four built–in filter holders with three standard filters, one empty holder for optional filter. All the filters can be moved out the optical path by pulling out the lever.
- Low position coaxial focusing system with tension adjustment. The coarse range is 25mm and the fine precision is 0.001mm. The height of a tiny sample,such as solder ball, can be measured.

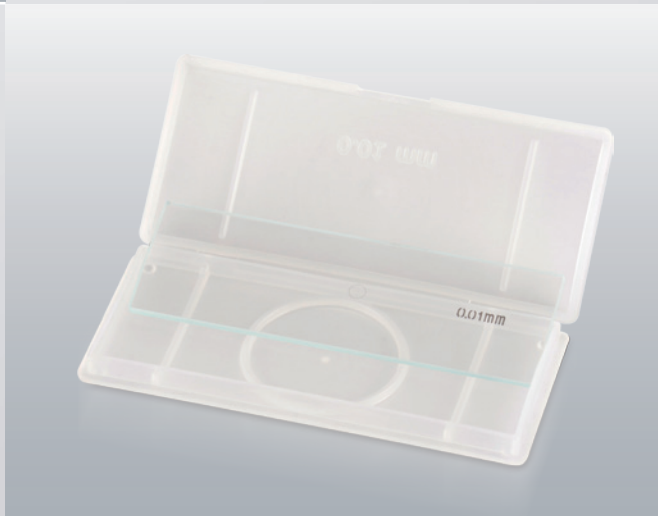
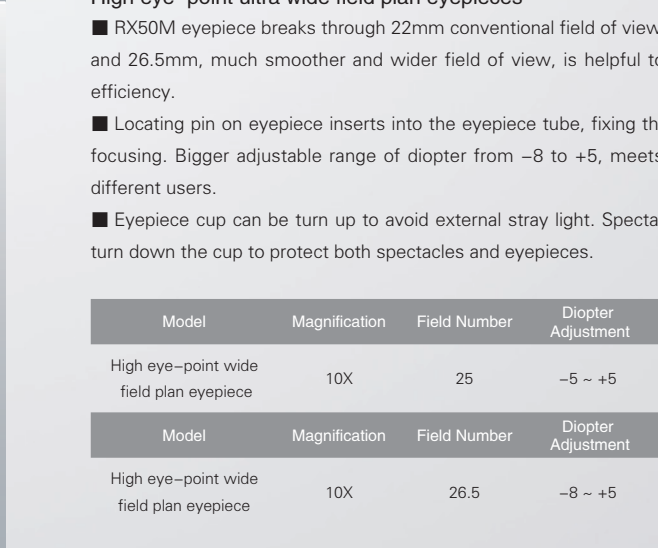
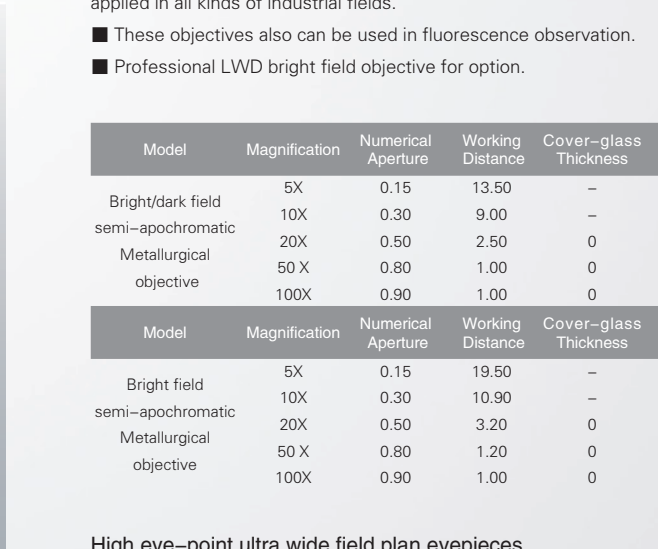
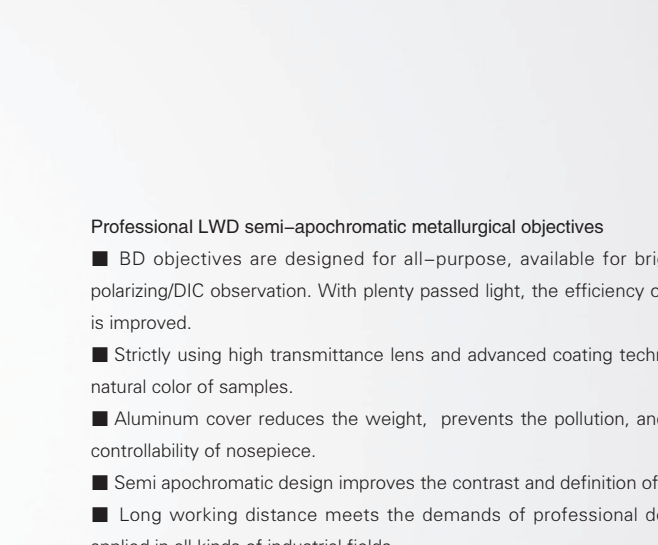
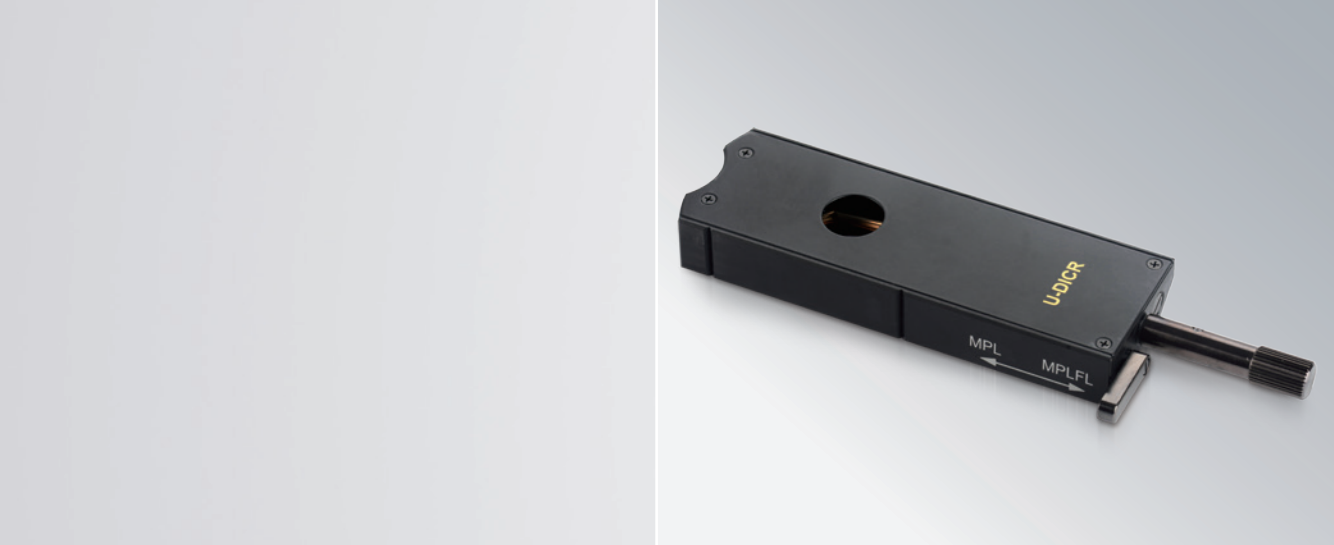
#### Stage with adjustment on the right hand

4 inches double–layer mechanical stage, with the lock device to limit Y axis movement. It is widely used in horizontal detection to avoid missing. Glass plate is attachable for transmitted light.

#### Transmitted and reflected illuminator

12V 100W long lifetime lamp–house with PHILIPS 7724 halogen bulb, provides bright and uniform light. New swing–out type achromatic condenser (N.A.0.9) optimizes the performance of Kohler illumination in lower magnification and corrects the chromatic and spherical aberration .





#### Professional LWD semi-apochromatic metallurgical objectives

- BD objectives are designed for all-purpose, available for bright field/dark field/polarizing/DIC observation. With plenty passed light, the efficiency of sample inspection is improved.
- Strictly using high transmittance lens and advanced coating technology, restores the natural color of samples.
- Aluminum cover reduces the weight, prevents the pollution, and also improves the controllability of nosepiece.
- Semi apochromatic design improves the contrast and definition of images.
- Long working distance meets the demands of professional detection, is widely applied in all kinds of industrial fields.
- These objectives also can be used in fluorescence observation.
- Professional LWD bright field objective for option.

Model	Magnification	Numerical Aperture	Working Distance	Cover-glass Thickness	Parfocal Distance	Conjugate Distance
Bright/dark field semi-apochromatic Metallurgical objective	5X	0.15	13.50	—	45	∞
	10X	0.30	9.00	—		
	20X	0.50	2.50	0		
	50 X	0.80	1.00	0		
	100X	0.90	1.00	0		

Model	Magnification	Numerical Aperture	Working Distance	Cover-glass Thickness	Parfocal Distance	Conjugate Distance
Bright field semi-apochromatic Metallurgical objective	5X	0.15	19.50	—	45	∞
	10X	0.30	10.90	—		
	20X	0.50	3.20	0		
	50 X	0.80	1.20	0		
	100X	0.90	1.00	0		

#### High eye-point ultra wide field plan eyepieces

- RX50M eyepiece breaks through 22mm conventional field of view, reaching to 25mm and 26.5mm, much smoother and wider field of view, is helpful to improve the work efficiency.
- Locating pin on eyepiece inserts into the eyepiece tube, fixing the eyepiece for easy focusing. Bigger adjustable range of diopter from -8 to +5, meets more demands of different users.
- Eyepiece cup can be turn up to avoid external stray light. Spectacle-wearers should turn down the cup to protect both spectacles and eyepieces.

Model	Magnification	Field Number	Diopter Adjustment	Reticle
High eye-point wide field plan eyepiece	10X	25	-5 ~ +5	—

Model	Magnification	Field Number	Diopter Adjustment	Reticle
High eye-point wide field plan eyepiece	10X	26.5	-8 ~ +5	—



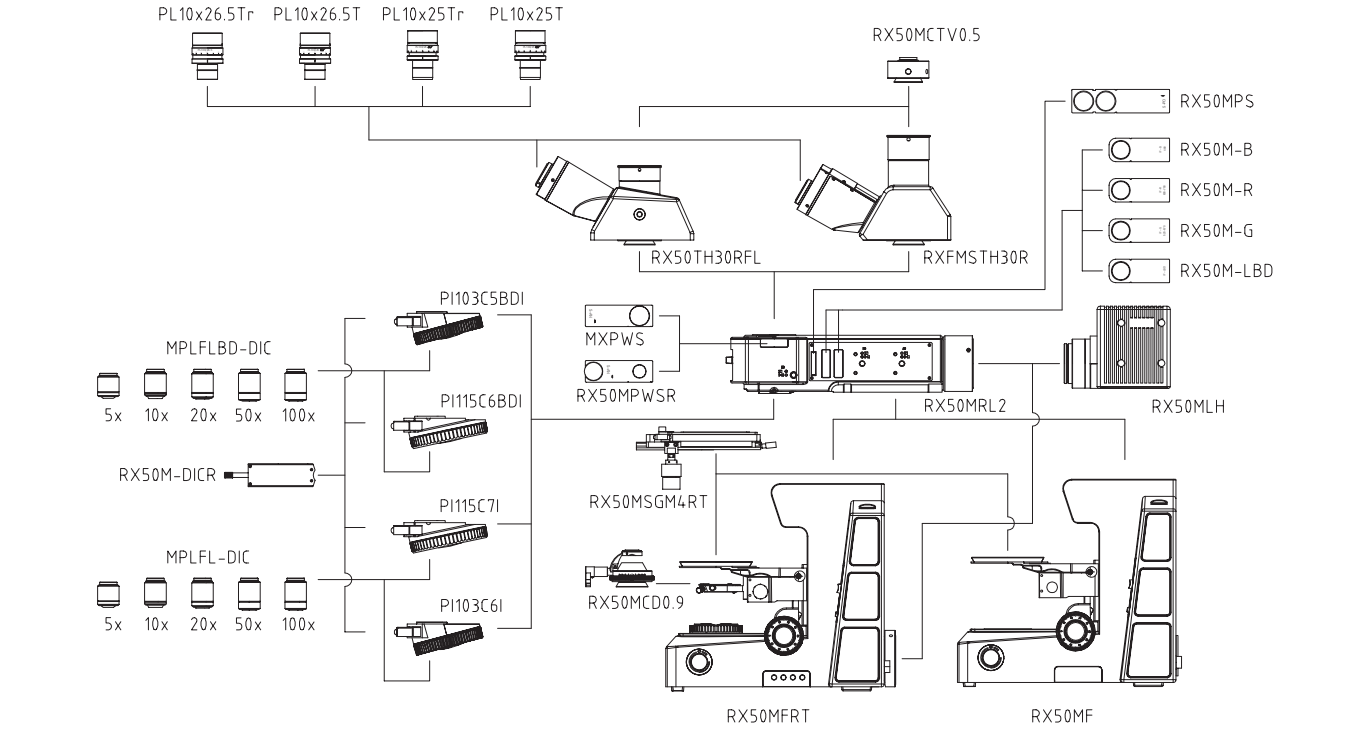
RX50M is available for multi-observation, such as bright field, dark field (reflected light only), polarizing, DIC (reflected light only).



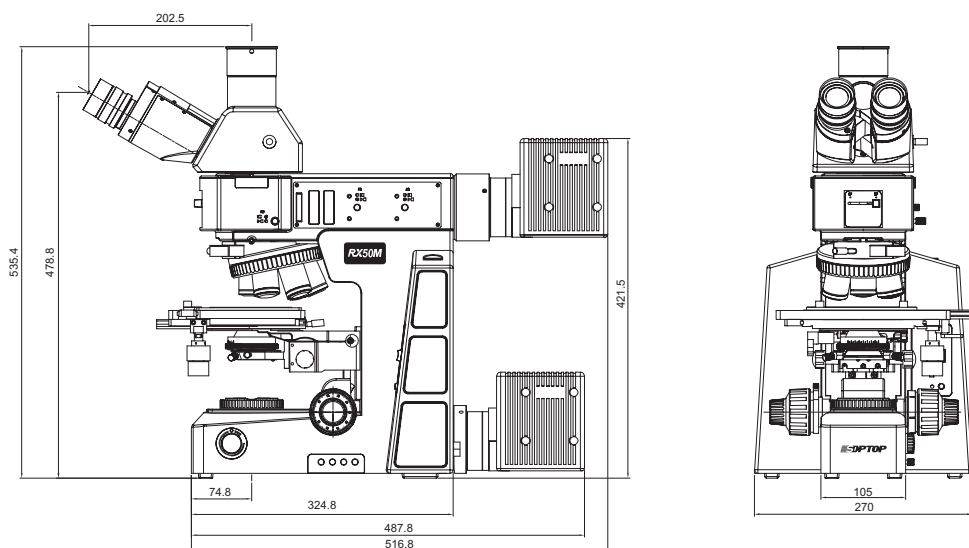
RX50M Specifications

Optical system	Infinity color corrected optical system
Viewing head	Erect image, 30° inclined gemel trinocular head, interpupillary distance: 50mm~76mm; splitting ratio R:T=100:0 or 0:100 Inverted image, 30° inclined gemel trinocular head, interpupillary distance: 50mm~76mm; splitting ratio R:T=100:0 or 20:80 or 0:100
Eyepiece	High eyepoint wide field plan eyepiece PL10X25mm, diopter adjustable High eyepoint wide field plan eyepiece PL10X25mm, with reticle, diopter adjustable High eyepoint wide field plan eyepiece PL10X26.5mm, diopter adjustable High eyepoint wide field plan eyepiece PL10X26.5mm, with reticle, diopter adjustable
Objective	BD semi-apochromatic metallurgical objectives (5X/10X/20X/50X/100X) Semi-apochromatic metallurgical objectives (5X/10X/20X/50X/100X)
Nosepiece (with DIC slot)	BD quintuple nosepiece, BD sextuple nosepiece Sextuple nosepiece, septuple nosepiece
Frame	Reflected/Transmitted body, low-position coaxial coarse and fine adjustment, coarse adjustment distance: 25mm; fine precision: 0.001mm. With coarse adjustment stop and tightness adjustment. Built-in 100-240V wide voltage transformer, double-way power output; intensity adjustable by digital set and reset; switch for reflection and transmission; built-in transmitted filters LBD/ND6/ND25). Reflected body, coaxial coarse and fine adjustment, coarse adjustment distance: 25mm; fine precision: 0.001mm. With coarse adjustment stop and tightness adjustment. Built-in 100-240V wide voltage transformer; intensity adjustable with digital set and reset.
Stage	4 inch three layers mechanical stage with glass plate, moving range: 102mm(Y)*105mm(X)
Condenser	Swing-out type achromatic condenser (N.A.0.9)
Reflected illuminator	BD reflected illuminator with iris field diaphragm and aperture diaphragm, central adjustable. With filter slot and polarizing slot. With switch for bright and dark field
lamp house	12V/100W halogen lamp house, center pre-set
Other accessories	Camera adapter: 0.5X focusing C-mount Fixed polarizer, fixed analyzer, 360° rotatable analyzer DIC attachment Interference filters for reflected light: High precision micrometer, scale value 0.01mm

RX50M Series System Diagram



## RX50M Dimension: mm



Design and production  
adheres to ISO14001  
international quality standard



Design and production  
adheres to ISO9001  
international quality standard



Design and production  
adheres to ISO13458  
international quality standard



ISO 9001  
Certification



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No additional notice for changes on the  
specification or appearance.



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