LAXCO™

A Microscope for Everyone

LMC4000-RFL Series Upright Fluorescence Microscope Manual

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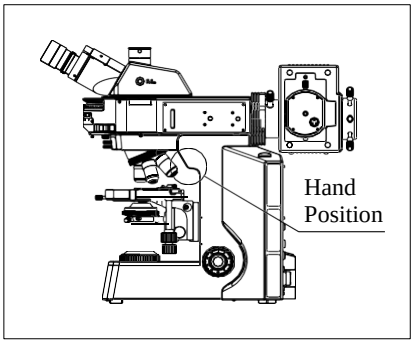
Contents *LMC4000-RFL*

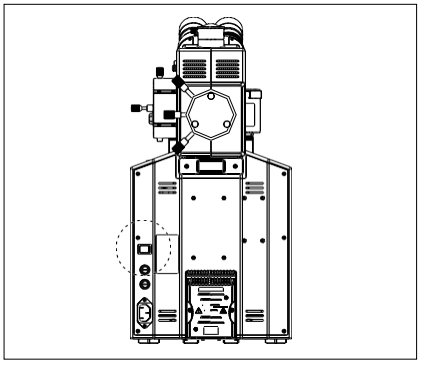
Before Use

1. Operation Notice



1. As the microscope is a high precision instrument, always operate it with care, and avoid physical shake during the operation.
2. Do not expose the microscope in the sun directly, either not in the high temperature, damp, dust or acute shake. Make sure the worktable is flat and horizontal. Following environment is required when operating: Indoor temperature: 5℃～40℃, Max relative humidity: 80%.
3. When moving the microscope, use both hands to hold its arm, and lay it down carefully (see Fig. left).

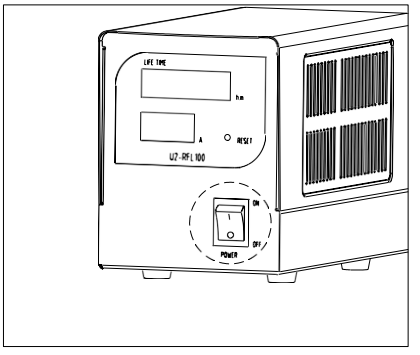
★ It will damage the microscope by holding the stage, focusing knob, head or light source when moving.



4. Fluorescence microscope should be used under dark environment.

★ In order to protect eyes, do not stare at fluorescence light directly.

5. The UHV bulb should be vertical under using, and the inclined angle should be less than 15 degrees, or it will make bulb damage.
6. Fluorescence sample will be faded by ultraviolet radiation, so it can not for long time save. Do not expose the sample under fluorescence light for long time, or it will be quenched.



7. When working, the surface of the light source will be very hot. Make sure there is enough space for heat dissipating.
8. Connect the microscope to the ground to avoid lightning strike.
9. For safety, make sure the power switch is at “O” (OFF) and power it off before replacing the bulb or fuse, and wait until both the bulb and bulb holder have cooled down.

★Bulb selected only:

Reflection fluorescence lighting: 100W DC mercury lamp (0SRAM);

Transmitted lighting: 6V/30W Halogen bulb（philips 5761）.

10. Wide voltage range is supported as 100~240V. Additional transformer is not necessary. Make sure the power supply voltage is in this range.
11. Use the special wire supplied by our company.
12. All the power OFF devices have been set in the position where is easy to operate.

2. Maintenance

1. Wipe the lens gently with a soft lens tissue. Carefully wipe off oil or fingerprints with tissue moistened with a little of 3:7 mixture of alcohol and ether or dimethylbenzene.

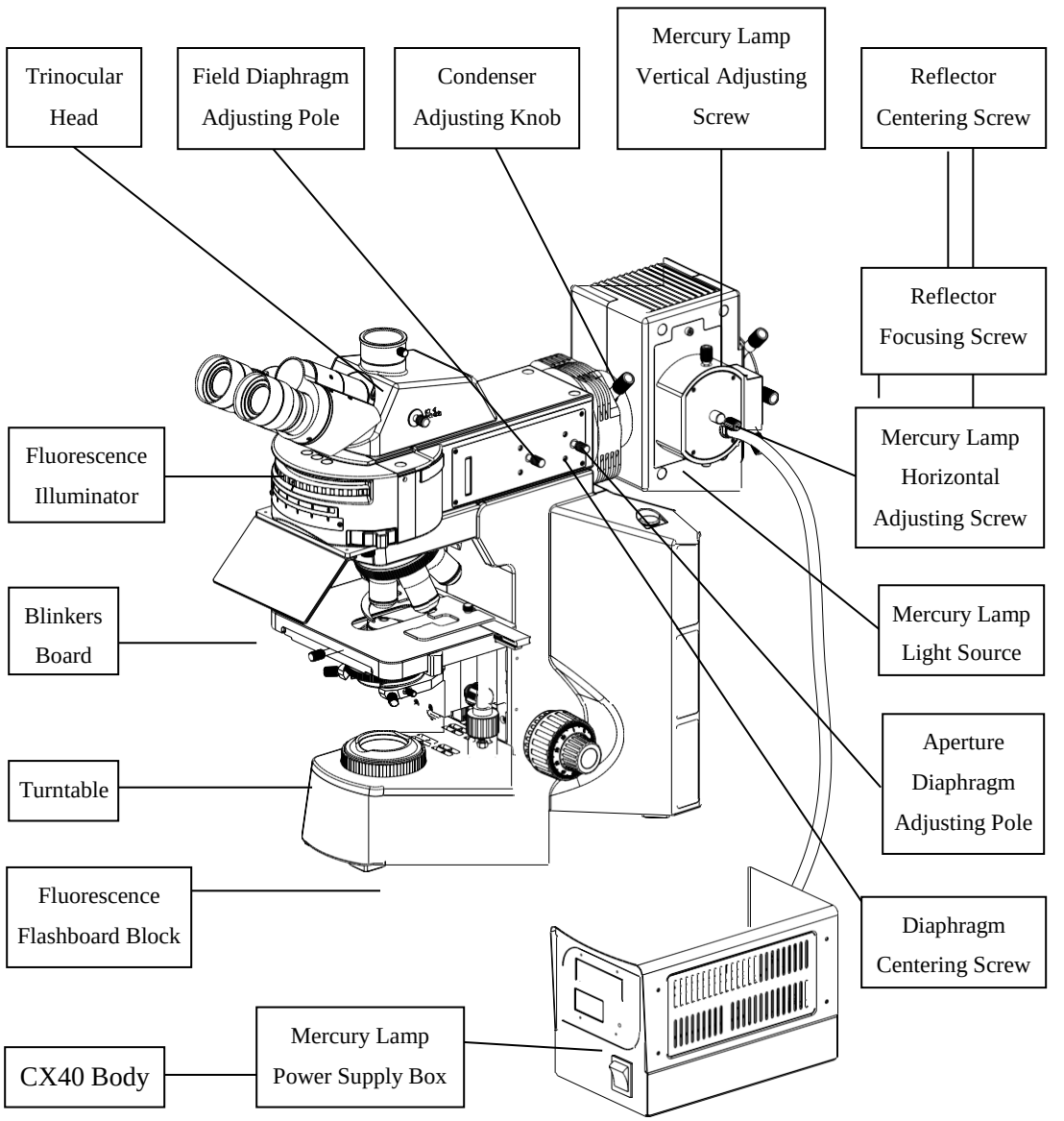
★ Alcohol and ether is flammable. Don't place these chemicals near to fire or fire source. Please use them in a ventilated place when turning on/off the electric device.

2. Do not use organic solution to wipe the surface of other components. Please use the neutral detergent if necessary.
3. If the microscope is damped by the liquid, cut off the power immediately and wipe it dry.
4. Never disassemble the microscope. It will influence its function or damage it.
5. After using, cover the microscope with a dust cover. Wait for the lamp housing to cool down before cover it.

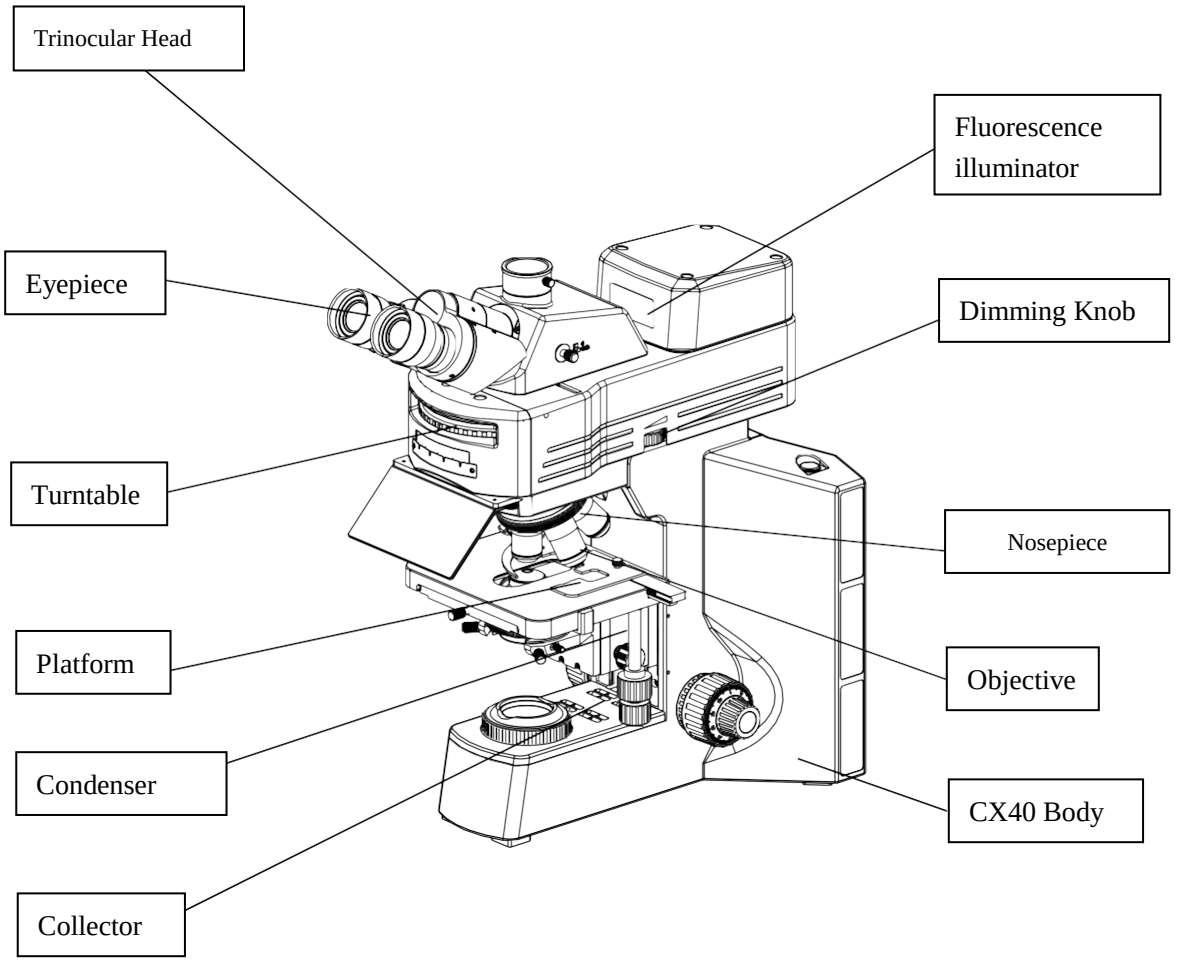
3. Safety Sign

Sign	Signification
	The surface gets hot and don't touch it with bare hand.
	Read the introduction before use. Unsuitable operation would lead to person hurt or instrument faulty.
▌	Main switch is ON.
0	Main switch is OFF.

LMC4000-RFL Fluorescence Microscope Components



LMC4000-RFLED Fluorescence Microscope Components



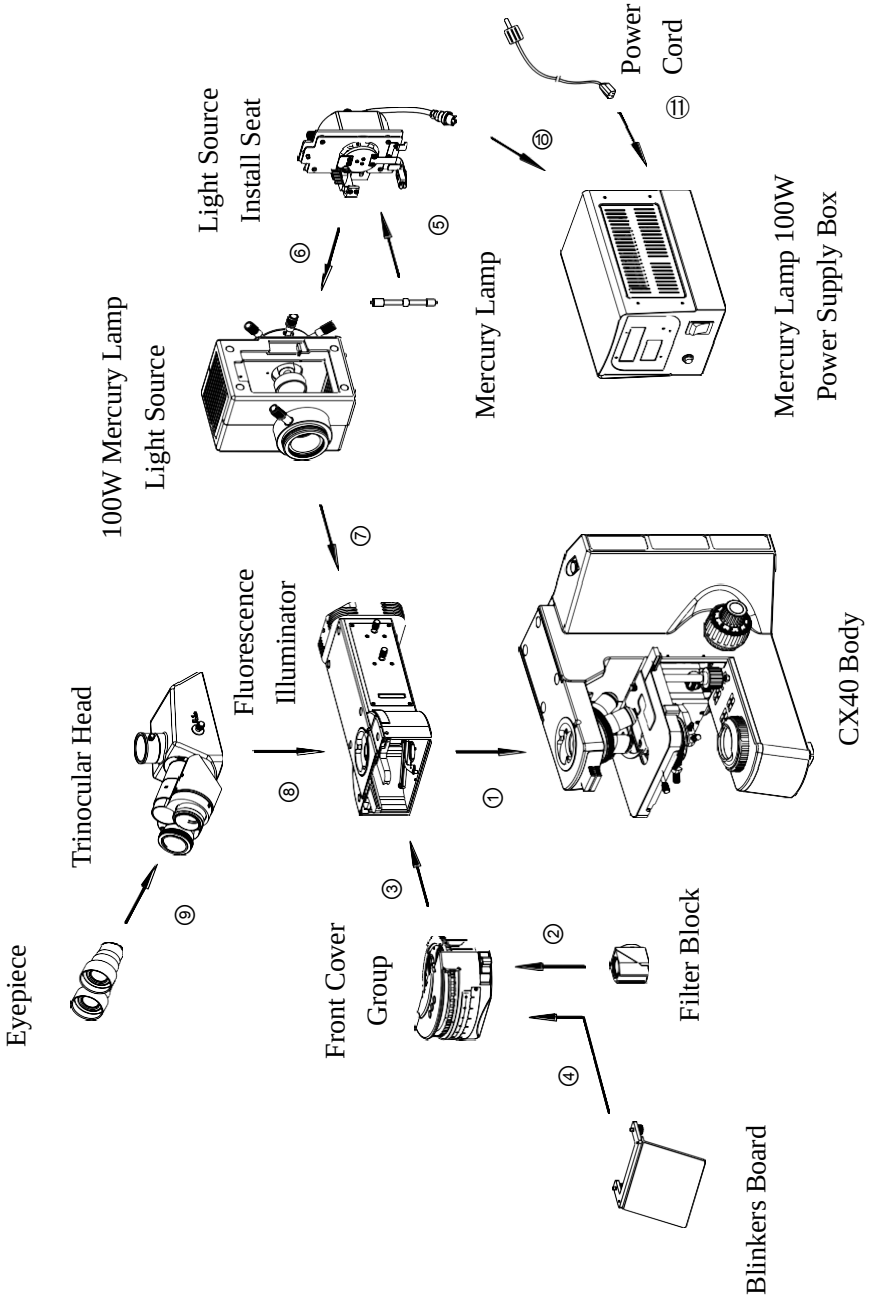
2. Assembling *LMC4000-RFL*

2-1 Assembling Scheme

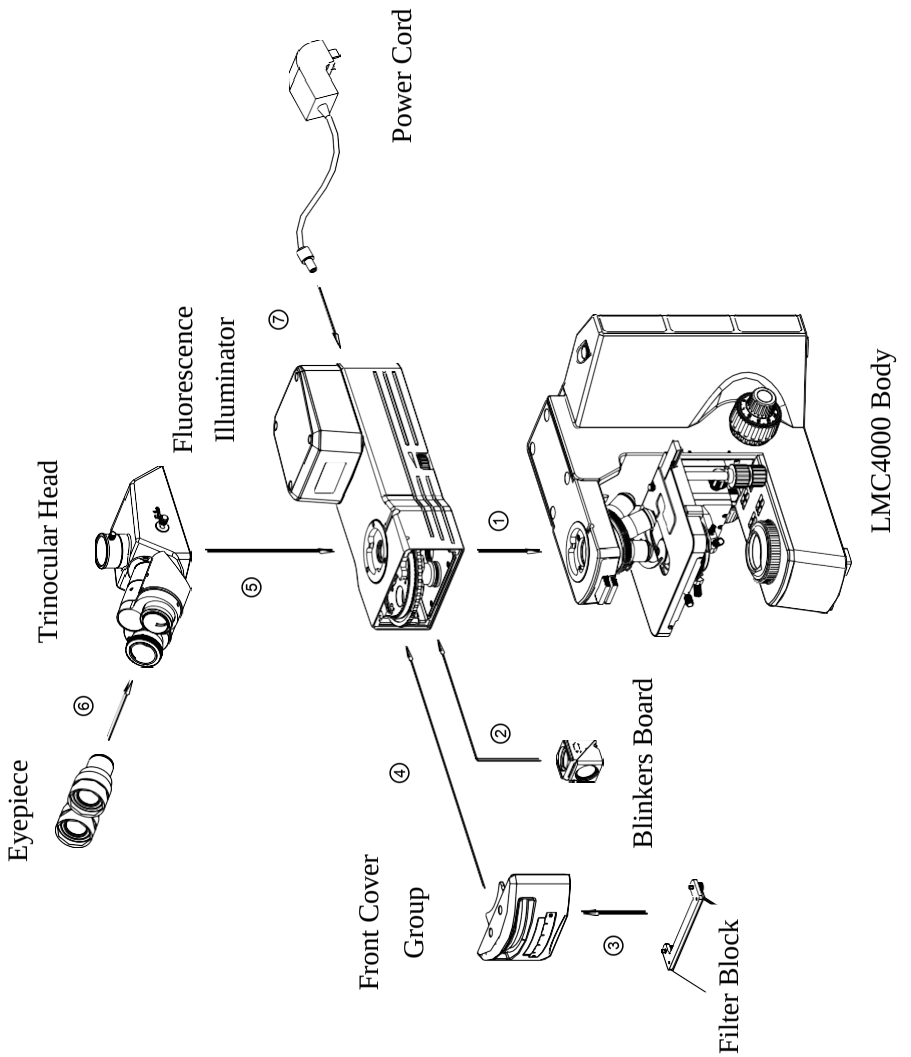
Following is the Assembling Scheme to describe how to assemble the components, and the numbers denote the assembling order.

★ Before assembling, make sure there is no dust, dirt or other materials which will disturb it. Assemble carefully and do not scrap any part or touch the glass surface.

LMC4000-RFL Series Fluorescence Microscope Components



LMC4000-RFLED Series Fluorescence Microscope Compon



2-2 Assemblage Steps

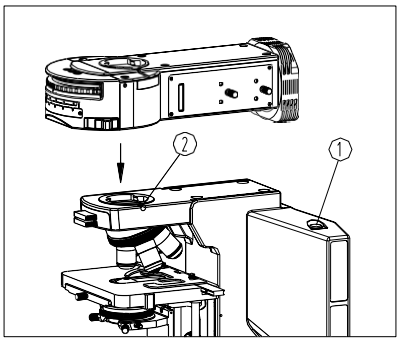


Fig. 1

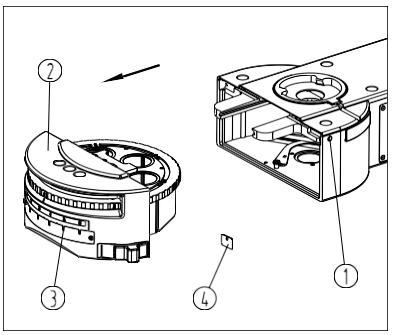


Fig. 2

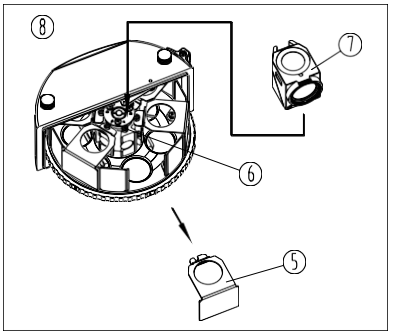


Fig. 3

2-2-1 *Assemble the Fluorescence Illuminator*

(1) Loose the lock-screw ② completely by the M4 inner hexagon spanner ①. (See Fig. 1)

(2) Match the dovetail interface on the bottom of fluorescence illuminator to the hole of the microscope body on the position of center-right, with a little left inclined and insert it in, then lock the screw ②.

★Make sure the fluorescence illuminator is horizontal with the microscope body.

2-2-2 *Assemble the Fluorescence Filter Sets*

Assemble the Mercury lamp Fluorescence Filter Sets

(1) Loose the right side lock screw ① of the turntable fluorescence illuminator, with a M4 inner hexagon spanner, and pull the front cover group ② out of the dovetail groove. (See Fig. 2)

(2)The blinker board ⑤ is installed in the fluorescence filter group. When using the fluorescence filter group, first loose the lock screw ⑥ with the inner hexagon spanner, and take off the blinker board ⑤. (See Fig. 3)

(3) Put the diaphragm slice of the fluorescence filter group ⑦ which is to be assembled upward, and match the dovetail groove of the fluorescence filter group ⑦ with the dovetail wedge of the front cover group ②, and push to the bottom. Tighten the lock screw ⑥.

(4) Check the ID ⑧ on the dovetail interface, and insert the nameplate ④ of the fluorescence filter group into the interface ③ with the same number in front of the front cover group ②.

(5) Repeat the steps above, to assemble other fluorescence filter groups into the turntable of the front cover group ②.

(6) Then match the dovetail wedge of the front cover group ② with the dovetail groove of the turntable epi-illuminator, and push to the bottom. Tighten the lock screw ①.

LMC4000-RFL

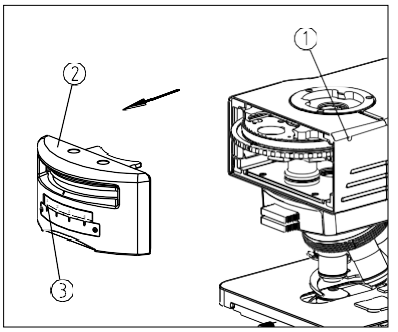


图 4

Assemble the LED Fluorescence Filter Sets

(1) Loose the screw① in right side of the fluorescence illuminator by a M4 hexagon wrench, pull the front cover② out of the dovetail groove.(See Fig.4)

(2) Choose the fluorescence filter sets④ according to the name plate③ of the fluorescence filter group under the front cover ②.(See Fig.5)

(3) Turn the turntable ⑤ to the circumference with the sequence number 3,insert the filter set with aphragm upward to dovetail groove of the fluorescence filter group and push to the bottom.Tighten the lock screw ⑥.

(4) Repeat the action as above to assemble the other filters.

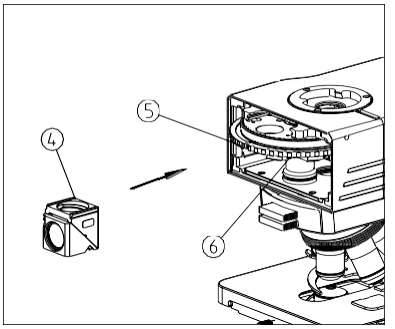


图 5

★ **Because the fluorescence fliter needs to be matched with the LED light source, each LED light has fixed position. Match the turntable 3 with the number 1 of the front cover, match the turntable 4 with the number 2 of the front cover, match the turntable 1 with the number 3 of the front cover 3, match the turntable 2 with the number of the front cover.**

(5) Assemble the front cover back② to the illuminator. Tighten the lock screw①.

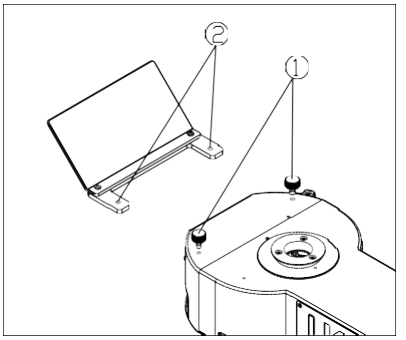


Fig.6

2-2-3 ***Assemble Blinkers Board***

(1) Take off the lock-screw ① on fluorescence illuminator. (See Fig. 6)

(2) Match the hole ② on blinkers board to the hole on lock-screw ① and lock the screw.

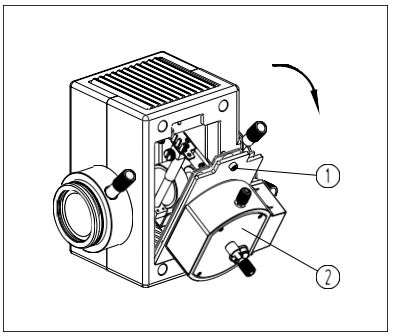


Fig. 7

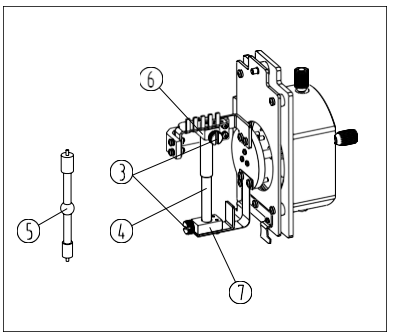


Fig. 8

2-2-4 ***Assemble Mercury Lamp***

(1) Loose lock-screw ① completely by the M4 inner hexagon spanner and rotate with 45 degrees as the direction shown, then take off the bulb holder ②. (See Fig. 7

(2) Loose the lock screw ③ of the mercury lamp first, and take off the supporting rod ④, and then insert the positive side (big end) of the new mercury lamp ⑤ into the positive holder ⑥ thoroughly; then put the negative holder ⑦ on the negative side (small end) of bulb and lock the screw ③. (See Fig. 8)

★ Please make sure the mercury lamp is put vertically. If there is aspirating hole on bulb, please make sure the hole directly to the ceramic holder.

(3) Put the bulb holder ② into bulb house and lock the screw ①.

★ Replace bulb during or after operation:

During or just after operation, the bulb, bulb house and around is very hot. Before replace the bulb, please set the power supply at "O"(OFF) and take off the power plug. Wait until all is cooling down to replace bulb.

★ After bulb replacing, set the timer on power supply to zero. For more details, see "*3-1 Set Illuminations*".

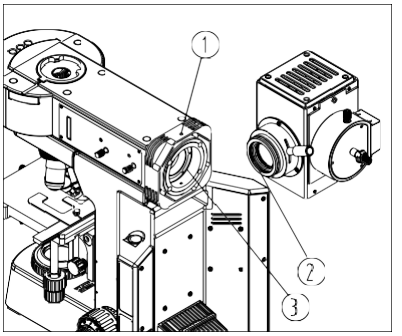


Fig. 9

2-2-5 Assemble Mercury Lamp Light Source

(1)Loose the lock-screw ① completely on fluorescence illuminator.(See Fig.9)

(2)Push the light source holder ② into the holder ③ on the fluorescence illuminator to the bottom. Make the upper plane of the light source group to be horizontal and lock the screw ①.

★ In operation, make sure there is enough space around the light source for heat radiation, especially on the top and bottom.

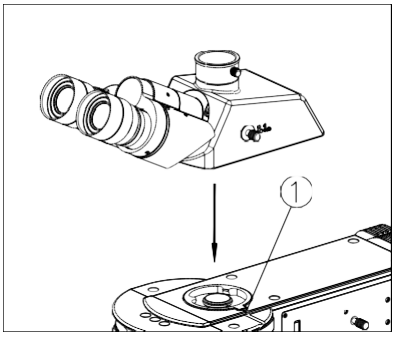


Fig. 10

2-2-6 Assemble the View Head

(1) Loose the lock-screw ① completely on fluorescence illuminator. (See Fig. 10)

(2) From a little right position, insert the dovetail interface on the bottom of head into the hole of middle head with a little left inclined. Keep the two eyepiece tubes forward, and then screw down the lock screw①.

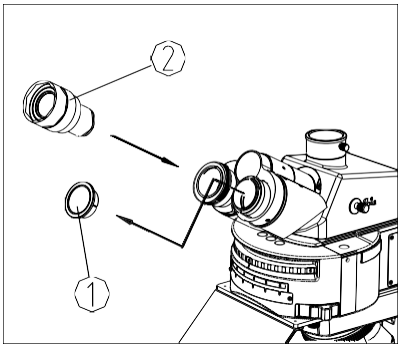


Fig.11

2-2-7 Assemble the Eyepiece

(1) Take down the cover of eyepiece tube ①.

(2) Insert the eyepiece ② into the eyepiece tube, until touch the bottom. (See Fig. 11)

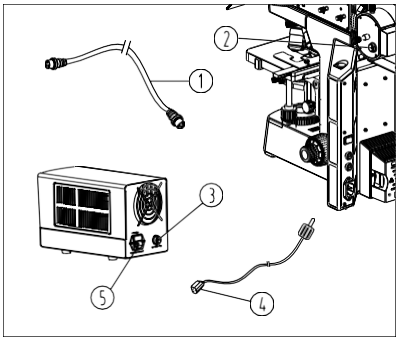


Fig. 12

2-2-8 Connect Mercury Lamp Power Supply Box

(1) Make sure the main switch of microscope and mercury lamp power supply are at "O" (OFF) position.

(2) Connect one end of the plug ① to the socket ②, and insert it to the bottom, then lock the screw. (See Fig. 12)

(3) Use same way to connect other end of the plug ① to connector ③ of power supply.

(4) Connect one side of the plug ④ to socket ⑤ on mercury lamp power supply and other side to power supply socket.

★ The power supply box supports wide voltage as 100-240V.

★ Don't use strong force when the power cord is bended or twisted, otherwise it will be damaged.

★ Use the special wire supplied by our company. If it's lost or damaged, choose one with the same specifications.

★ Connect the power cord appropriately to make sure the instrument is connected to ground.

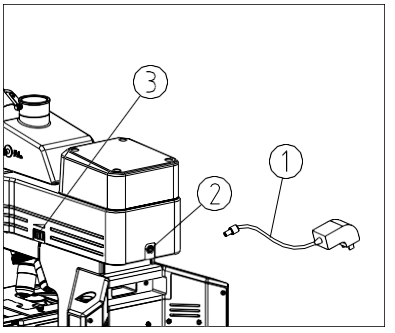


Fig.13

2-2-9 Connect the LED fluorescence illuminator (Apply to LED Fluorescence)

LED Fluorescence illuminator has two power supply modes.

A. External transformer for power supply Connect the external transformer ① into power sockets ② of the LED fluorescence illuminator, and turn on the power. Please make sure the connect is in good condition.(See Fig.13)

★ Before connect the external transformer, keep the switch at "O"(OFF) position.

B. Rechargeable box for power supply (recommend to use it when there is no power)

(1) Connect one side of the plug ④ to socket ②,and connect the other end to the battery box⑤ (any port is available), and make sure the connect is in good condition.(See Fig.13,14)

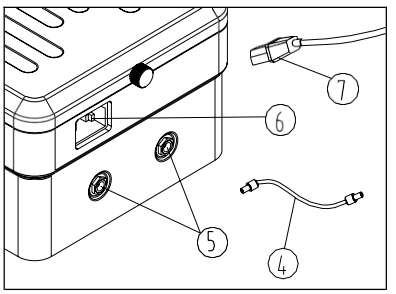


Fig.14

(2) Turn on the switch⑧ for power supplying. When it is in normal condition, the color of light Indicator ⑨ is "green". The light indicator ⑩ color changes to "saffron"(The light indicator ⑩ color becomes "green" with full of electric), At the same time, the last grid of light bar indicator ㉀color is "red", others are "green". When the battery is low, light indicator ⑨ color becomes "orange", light indicator ⑩ is "orange". At the same time, light bar indicator ㉀ left only the last grid is "red".(See Fig.15)

★ Before turn on the power, make the battery box switch at "O"(OFF) position; Switch the light regulating hand wheel ③ of the illuminator at "O" (OFF) position.

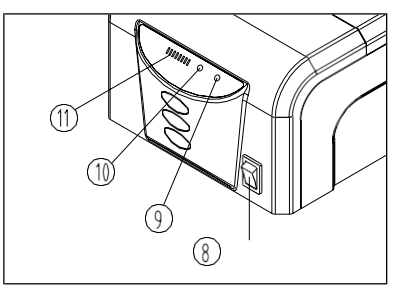


Fig 15

(3) When the box is lack of power, it has to be charged. When it is charging, switch needs to be at "I"(ON) position; at this moment, light indicator ⑩ color is "orange", when power is full, light indicator ⑩ becomes "green", at the same time, light bar indicator㉀ is all lighting. (The last grid color is "red", the other seven grids color is "green"). (See Fig.14, 15)

2-2-10 Replace Fuse

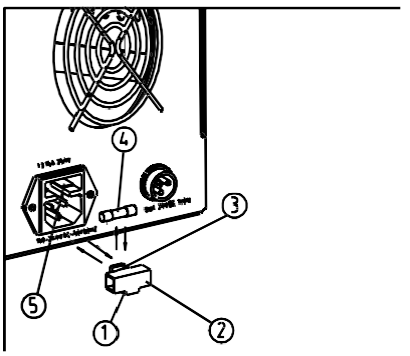


Fig 16

(1) Before replace fuse, please set the main power supply and mercury lamp power supply at “O” (OFF) and take off the plug.

(2) Fasten the flute ① under the fuse holder ② by fingers, take out the fuse holder ② from socket ⑤. Then take off the fuse ④ from the above flute ③ and replace it with a new one. Then put it to the flute ③ and push the fuse holder ② into the socket ⑤, until a sound of “kada” is heard. (See Fig. 16)

2-2-11 Install the ND Filter

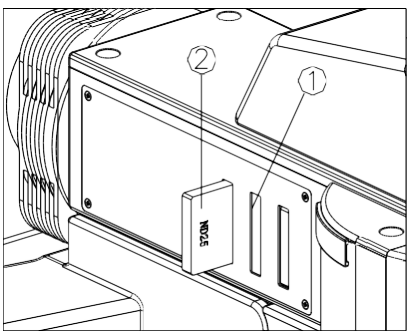


Fig. 17

Use the neutral density (ND) filter to reduce the high-brightness excitation light, and to postpone the attenuation of the sample fluorescence. The ND filter can be used if only it does not affect the observation.

According to the requirements, two groups of ND filter with different transmittance, as ND25 and ND50, can be inserted into position ① and ②. Make the surface with identifications face to the observer, and the ND filter comes into the light path when a sound of “DiDa” is heard. (See Fig. 17)

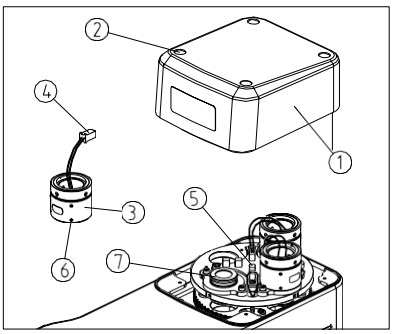


Fig. 18

2-2-12 Replace LED fluorescent light source (Apply to LED fluoresence)

New LED fluorescence microscope is unnecessary to be adjusted. After long tine use, the LED light becomes week or broken, please change the light according to the following steps:

- ★ **Because each LED filter works on the unique LED light, choose the sample LED as the original one.**
- ★ **Please use assigned single 3w LED light (class 3B)**

(1)Turn off the LED fluorescent illuminator to "O"(OFF), and pull out the external transformer.

(2)Take down the four patches and screws from the lamp source cover ①, and take lamp cover down.(See Fig,18)

(3)Cut down the power connect.

(4)Unscrew the two hexagon screws ⑥which are using to fix LED fluorescent lamp③, take LED bulb down from the holder⑦.

(5)Replaced new LED bulb, and screw back two hexagon screw. Insert the connecting plug④of LED fluorescent light source into circuit board socket ⑤

(6)Put the cover ① back.

While using transmitted illumination, the microscope operation is as same as the inverted biological microscope. Below is the operation guide under Epi-fluorescence illumination observation.

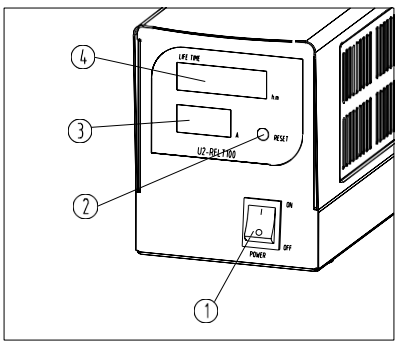


Fig. 19

3-1 Set Illuminations

(1) After connect with main power supply, set the switch ① on mercury lamp power supply at "—" (ON), the mercury lamp is light on. It costs 5 minutes to warm up mercury lamp to be stable. (See Fig. 19)

(2) The timer (LIFE TIME) ④ shows hour, minute, second of total 5 bits from left to right. If the number is more than 5 bits, it will show first 5 bits and hide the rest. To see the rest numbers, touch the timer reset button (RESET) ②, the rest number will be shown for 6 seconds and then return.

(3) If change a new mercury lamp or clear the numbers of the timer (LIFE TIME) ④, press the reset button (RESET) ② for more than 5 seconds, and all the hours, minutes and seconds will clear.

(4) The indicating range of the current (CURRENT) ③ is 0~9.99A.

★No need to turn on the main switch when using fluorescence illumination.

★To avoid damage, do not cut off power supply within 15 minutes after mercury lamp light on.

★In order to prolong the life of mercury lamp and the power supply box, please do not re-light on it within 3 minutes after turned off.

★When the timer ④ indicates "200.00", it means the mercury lamp had lighted on for 200 hours and it is the life limit for replacement.

★For eyes protection, don't stare at fluorescence light directly.

LED fluorescence microscope

★ **LED fluorescence microscope can be equipped with four groups of fluorescence filter at most.Normally,equipped with 3 groups of fluorescence filter and bright-filter position.**

★ **Normally. The position of fluorescence filter where are on the turntable ②,No.4 is located on the Transparent bright filed .**

(1)Turn the light regulating handwheel ① anticlockwise. LED fluorescence lamps source is on until a sound of "dida" is heard.(See Fig 20)

(2)Turn the turntable ② , turn it to the position where is observed.LED light source is light on until a sound of "dida" is heard. (3)Now.Wheather the LED is light on or not, depend on clock or anticlockwise.LED fluorescence is turn off until a sound of "dida" is heard.

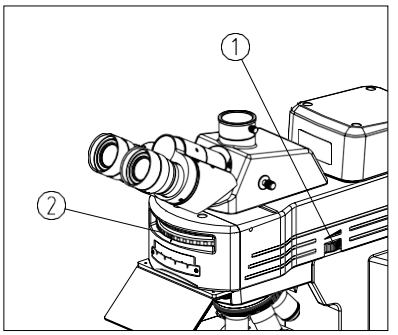


图 20

★ **LED fluorescence will not be lit if turntable is not on the position.**

★ **No need to turn on the main switch when using fluorescence illumination.**

For eyes protection, don't stare at fluorescence light directly.

3-2 Center the Field Diaphragm

By adjusting the field diaphragm, adjust the diameter of the light beam according to the objective, to shield the diffusion light, in order to obtain better image contrast. To prevent the fluorescence decrease, narrow the field diaphragm, and reduce the illuminated part. According to the magnification of the objective used, adjust the field diaphragm with the pole of fluorescence pole. When the field diaphragm image is just at the edge of field, the objective can provide best performance and the image is the clearest.

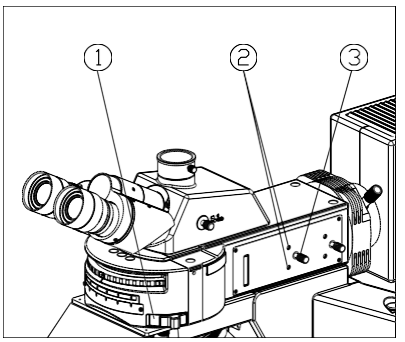


Fig. 20

(1) Rotate the turntable, to turn the fluorescence filter B or G into the light path. (If there is no fluorescence filter B or G, use another fluorescence filter.) (See Fig. 21)

(2) Rotate the objective nosepiece, to turn the 10X objective into the light path.

(3) Push the fluorescence flashboard block ① to the position "O", to open the light path.

(4) Focus the slide on the stage, and adjust it to be clear.

(5) Pull the field diaphragm adjusting pole ③ to the outermost to open the field diaphragm to the smallest, while push it to the innermost to the largest.

(6) Observe through eyepiece to find image of field diaphragm.

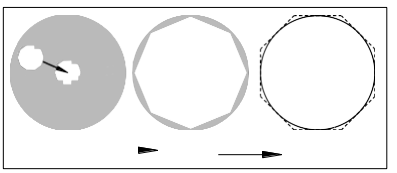


Fig. 21

(7) Adjust two field diaphragm centering screws ② on the side of illuminator by a inner hexagon spanner, to move the image to the center of view field.

(8) Open the field diaphragm gradually. If the image of field diaphragm is just inscribed to the view field, it means the field diaphragm had been centered. (See Fig. 22)

(9) In actual use, please open the field diaphragm a little to make it ex-scribed with view field in order to obtain better image.

3-3 Center the Aperture Diaphragm

The aperture diaphragm can adjust the image brightness and increase contrast. The aperture diaphragm decides the numerical aperture of the illumination system. If the N.A. of illumination system matches with the N.A. of the objective, it can obtain better resolution and contrast, and increase the depth of field.

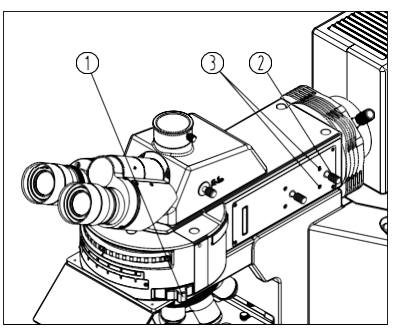


Fig. 22

(1) Rotate the turntable, to turn the fluorescence filter B or G into the light path. (If there is no fluorescence filter B or G, use another fluorescence filter.) (See Fig. 23)

(2) Rotate the objective nosepiece, to turn the 10X objective into the light path.

(3) Put the fluorescence flashboard block ① to position "O", to open the light path.

(4) Focus the slide on the stage, and adjust it to be clear.

(5) Pull the aperture diaphragm pole ② to the outermost, to open the aperture diaphragm to the smallest.

(6) Take off one eyepiece, replace it with the CT (Centering Telescope), and insert it into the observation tube. Adjust the CT to find the image of aperture diaphragm in the view field.

(7) Adjust the two aperture diaphragm centering screws ③ on the side of illuminator by a inner hexagon spanner, to move the image to the center of view field.

(8) Open the aperture diaphragm gradually, if the image is inscribed with the view field, then it means the aperture diaphragm is rightly centered. (See Fig. 22)

(9) In actual fluorescence observation, push the aperture diaphragm pole ②, to open the aperture diaphragm to the largest.

★ The aperture diaphragm is centered when leaving factory, so the user does not have to readjust it.

★ If the high-brightness excitation light is used, the fluorescence of sample will decrease, then firstly use the ND filter to reduce the brightness of the excitation light. If there is no ND filter, then narrow the aperture diaphragm to reach the same function.

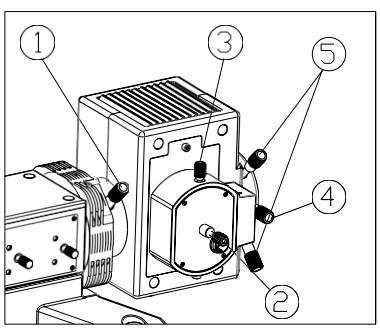


Fig. 23

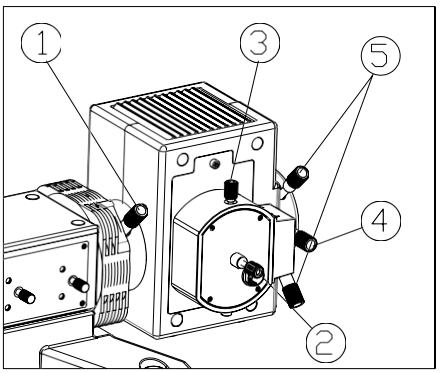


图 24

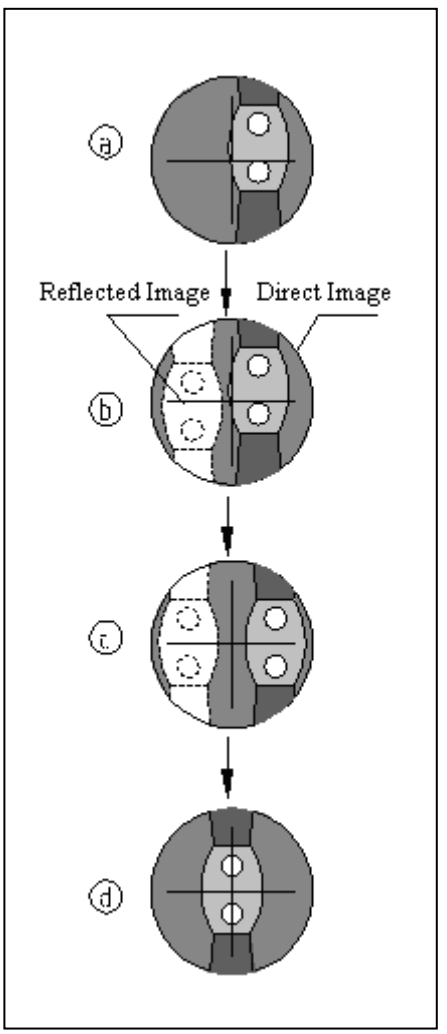


图 25

3-4 Center the Mercury Lamp Filament

★ Firstly set the main power switch to position " I ", and wait for 5~10 minutes, until the mercury arc light stabilizes, and then center the filament.

⑪ Install the centering objective into the nosepiece to move the centering objective into light path, and turn the frosted glass to the operating position.

⑫ Move the fluorescence filter block B1 into the light path.

⑬ Open the field diaphragm and aperture diaphragm to the largest.

⑭ Adjust the condenser adjusting pole ①, the vertical adjusting screw ② of mercury lamp, and the horizontal adjusting screw ③ of mercury lamp to make the filament image projected on the "+" scale of the centering objective. (Fig. 24, 25a)

⑮ Adjust the focusing screw ④ of reflecting lens and the centering screw ⑤, to make the reflected image projected on the "+" scale of the centering objective. (Fig. 24, 25b)

⑯ Adjust the centering screw ⑤ to make the filament image and reflected image symmetry to the "+" scale of the centering objective. Adjust the focusing screw ④ to make both images with same size. (Fig. 24, 25c)

⑰ Adjust the vertical adjusting screw ② of mercury lamp, and the horizontal adjusting screw ③ of mercury lamp to make the two images superposition to the center of "+" scale. (Fig. 24, 25d)

⑱ Screw down the centering objective, install the fluorescence objective, and move the 10X objective into the light path. With the fluorescence filter block B1, set the slide on the stage, and rotate the coarse focusing knob to find the image. Then rotate the fine focusing knob to make the image be clear.

⑲ Observe through eyepieces and adjust the condenser adjusting pole ① to make the field of view to reach the normal brightness, then lock the knob.

★ Centering the filament after the mercury lamp excitation source is stable, it will be more precise.

★ Adjust the vertical and horizontal screw for the filament image, then the reflected image will also be moved.

★ After replacing the mercury lamp, it should be re-centered.

4. Technical Specifications *LMC4000-RFL*

Key Technical Specifications of LMC4000-RFL Series Upright Fluorescence Microscope

Optical System	● Chromatic aberration infinity optical system
Head	● Gemel Binocular head, 30° inclined. ● Gemel Trinocular head, 30° inclined, Splitting ratio: Binocular Head 100%, Binocular Head/ Trinocular Head 0%/100%.
Eyepiece	● PL10X high eye-point plan eyepiece, line field of view: 22mm. ● PL15X high eye-point plan eyepiece, line field of view: 16mm.
Nosepiece	● Reversed quintuple nosepiece
Objective	● Infinity plan achromatic objective (4X, 10X, 20X, 40X, 60X, 100X); ● Infinity plan Semi-apochromatic fluorescence objective (4X,10X,20X,40X,100X)
Focus	● Coaxial coarse&fine focusing system with limit-stopper&tension adjustable. ● Travel rang: 30mm. Stage bracket height adjustable. Fine focusing precision：0.002mm.
Stage	● Built in low position coaxial mechanical stage, area 175x145mm, 75x50mm moving range, rotating stage from right or left for option.
Transmitted illumination system	•100～240V wide voltage. Built-in Koehler illuminator systems. 6V/30W halogen bulb. Pre-centered, a continuous adjustment of brightness. NA1.2/0.22 Swing-out achromatic condenser.
Reflected fluorescence illumination	•Mercury lamp Fluorescence illuminator: Equipped with 6 groups of filter block, with centering view field diaphragm and aperture diaphragm, 2 groups of dimmer glass slot reserved, with the flashboard block. Centering 100W DC mercury lamp, with adjusting reflector. Input: 100-240VAC. •LED lamp Fluorescence illuminator: Equipped with 4 groups of filter block at most. Equipped with External power adapter. Input:100-240VAC. Output:6V/2A.
Operation Environment	•Indoor use Only. •Altitude: 200m Max. •Temperature: 5℃ - 40℃ (40°F - 109°F) •Humidity: 80% for 31℃ (88°F), then decreased linearly; 70% for 34℃ (93°F); 60% for 37℃ (99°F); 50% for 40℃ (104°F) •Pollution: 2 (Refer to IEC664)

5. Troubleshooting *LMC4000-RFL*

As the performance of microscope can't play fully due to unfamiliar operations, the table below can provide some solutions.

Problem	Cause	Solution
1. Optical system		
(1) The mercury lamp is bright, but the view field is dark.	Field diaphragm is not large enough.	Open the field diaphragm larger.
	Filter blocks are not at correct position.	Adjust them.
	The fluorescence flashboard block shades the light source.	Adjust the fluorescence flashboard block.
(2) Unclear image	The objective is not in the light path.	Turn the nosepiece until a sound of "kada" is heard, to lock position.
	Stains have accumulated on the lens.	Clean the lens.
	Field diaphragm is too large or narrow.	Adjust it.
	The fluorescent color of filter block does not match with the specimen.	Adjust the filter block.
	Use wrong immersion oil.	Use a correct one.
(3) Blur field or brightness asymmetry.	Nosepiece is not at lock position	Turn the nosepiece until a sound of "kada" is heard, to lock position.
	Filter blocks are not at correct position.	Adjust them.
	Mercury lamp filament is not centered.	Center it.
	Condenser adjusting knob is not at correct position.	Adjust it.
2. Electrical Part		
⑪ Mercury lamp does not light.	No power supply.	Check the connection of the power cable.
	Incorrect connection of light source.	Check the connection.
	The light source cable is broken.	Replace it with a new one.
	The mercury lamp burnt out	Replace the bulb.
	The fuse is burnt out.	Replace the fuse.
(2) Mercury lamp flashes.	The power supply has just been connected.	Wait for 5 minutes until the lamp is stable.
	The light source cable doesn't connect well.	Connect it correctly.
	The bulb will burn out soon.	Replace it with a new one.

2.LED fluorescence Part		
(1)LED fluorescence does not light.	LED fluorescence handwheel is turn off	turn on the LED fluorescence, turn the turntable to the lock position.
	Turntable is at the lock position.	Fix the turntable on the fluorescence observation.
	No power supply	Check the connection of the power cable.
	Cable is broken when using battery box	Check the connection.
	Cable is broken	Replace the connection.
	Battery box lacks of electric when is using.	Charging in time.
(2)LED fluorescence is light, brightness asymmetry.	Handwheel is not big enough.	Adjust handwheel to enough bright.
(3)Background is yellow green .when observe transmission Filed.	Fix the turntable on the fluorescence observation.	Adjust the turntable to bright-filed position.
(4)battery box	Power source is out of power.	Make sure the power normally.
	The power source of battery box is turn off	Turn the battery box on.