

## **User Manual**

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# **MI-BGU-LED-CKX53**

**Inverted LED Fluorescence Illuminator**

## **Thank you for buying our product!**

This unit is a precision optical instrument. Our product has been design to provide the highest level of safety, however, improper operation or negligence in following the instructions in this manual may cause personal injuries and property losses. In order to ensure your safety, prolong the life of this unit and maintain it properly, please read this manual carefully before operating this unit.

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### **Warning**

- Do not use or place the instrument in the place with high temperature, humidity or dust for a long time
- Suitable working temperature: 5 °C to 35 °C
- Suitable relative humidity 20% to 80% (25 °C)

Note: do not immerse the instrument in water or solvent

Note: do not place accessories not provided by our company in the frame body or other transmission parts

### **Preparation**

Before using this product, please install the microscope according to Olympus CKX microscope instructions.

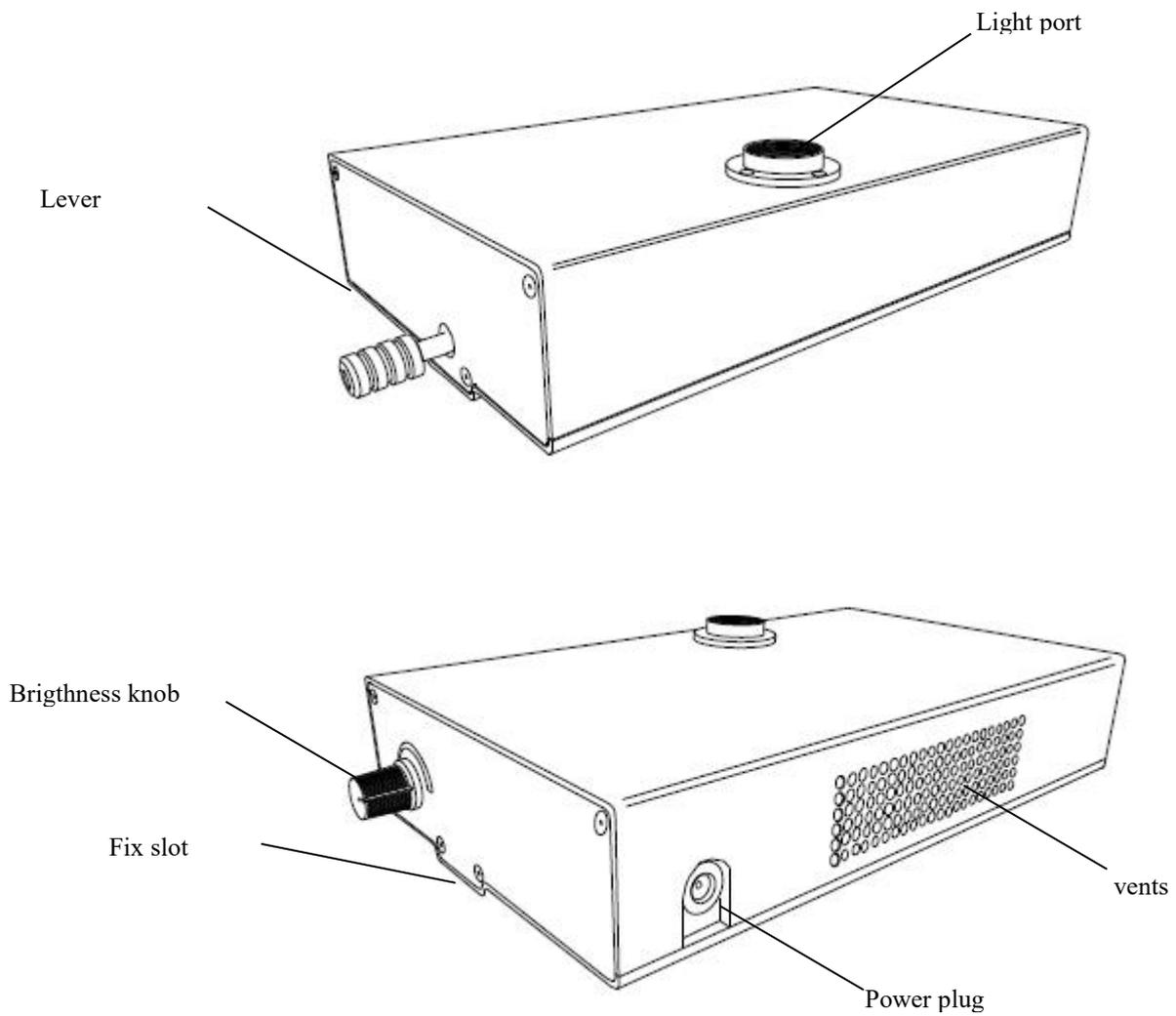
## Content

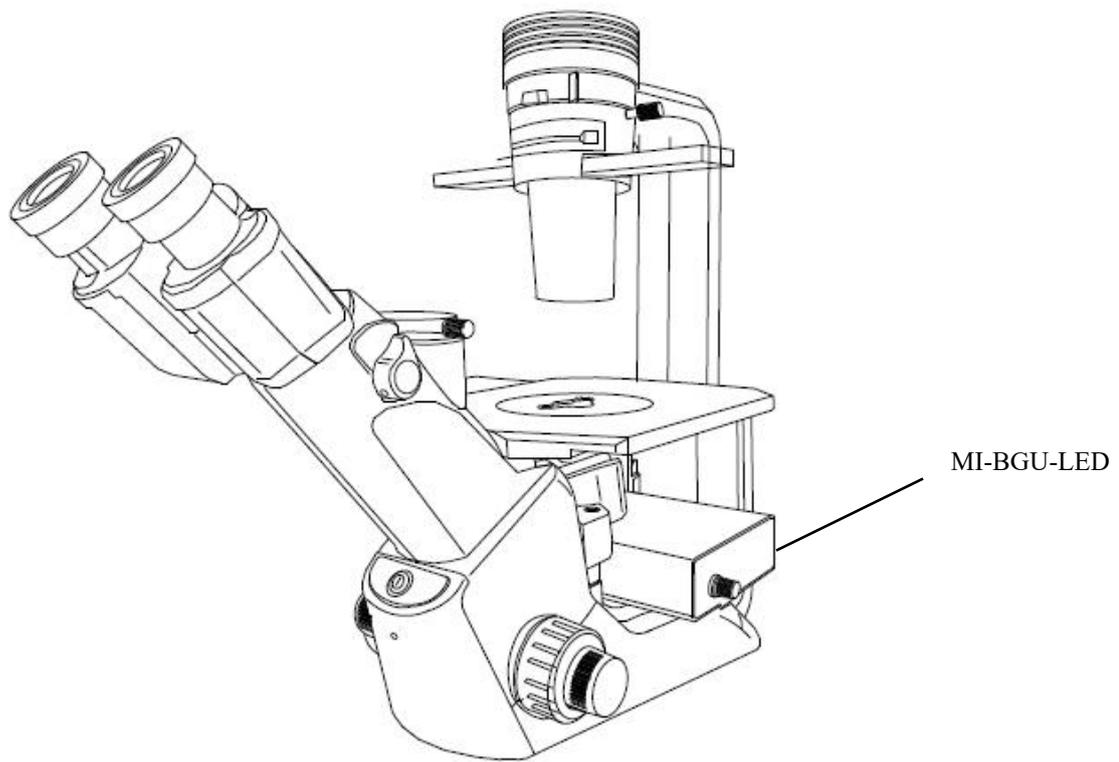
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## I .Introduction

The MSHOT MI-LED series LED fluorescence attachment takes us of long working life LED as light source, can easily expand Olympus CKX53 microscope into an energy-saving, efficient, easy to operate and super long-life LED lighting fluorescence microscope and do not effect original bright field observation.





## II. Specification

### 1. Specification

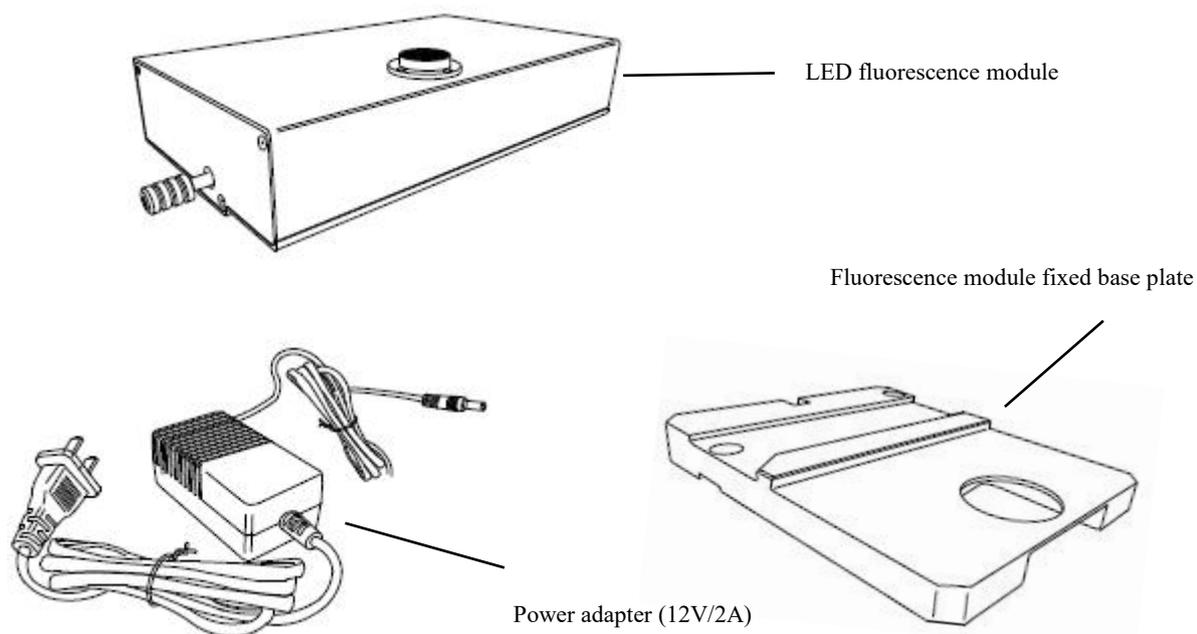
| Excitation group | LED wavelength | Excitation wavelength | Dichroic mirror | Emmision filter |
|------------------|----------------|-----------------------|-----------------|-----------------|
| B                | 470-475nm      | 475/30nm              | 505nm           | 535/40nm        |
| G                | 530-535nm      | 540/25nm              | 565nm           | 605/55nm        |
| UV               | 365nm          | 375/30nm              | 415nm           | 460/50nm        |

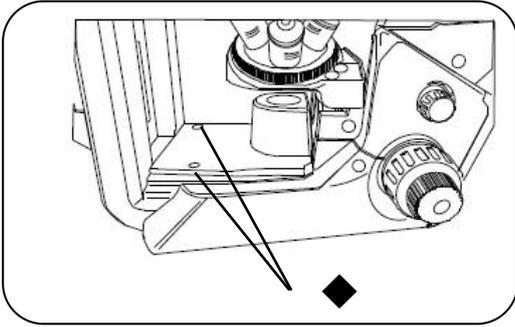
## 2. Optional specification

| Excitation group | LED wavelength | Excitation wavelength | Dichroic mirror | Emmision filter |
|------------------|----------------|-----------------------|-----------------|-----------------|
| UV(LP)           | 365nm          | 330-380nm             | 400nm           | 420nmLP         |
| B(LP)            | 470-475nm      | 460-490nm             | 505nm           | 510nmLP         |
| G(LP)            | 530-535nm      | 510-550nm             | 570nm           | 575nmLP         |
| Y(optional)      | 560nm          | 540-580nm             | 600nm           | 610nmLP         |

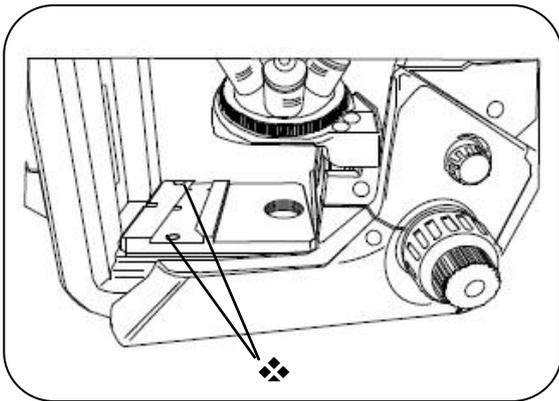
## III.Installation

Unpack and take out the corresponding accessories, including LED fluorescence module, power adapter, fluorescence module fixed base plate

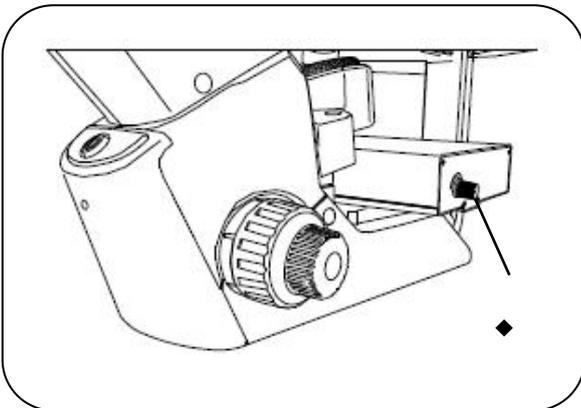




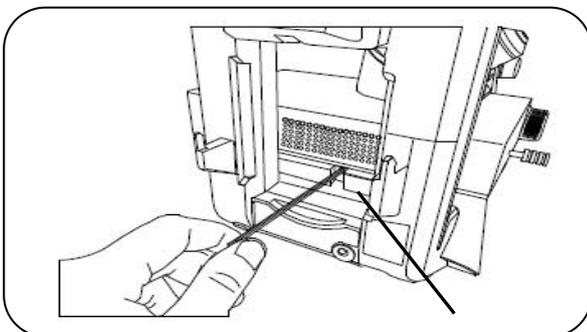
① Adjust the coarse focusing screw to raise the objective lens, take out the two screw hole plugs on the bottom plate, loosen the screws with a hexagonal key, and take the bottom plate from the microscope.



❖ Push in fluorescent module fixed bottom plate on the microscope base, and the bottom plate is fixed on the microscope by tightening the screws.



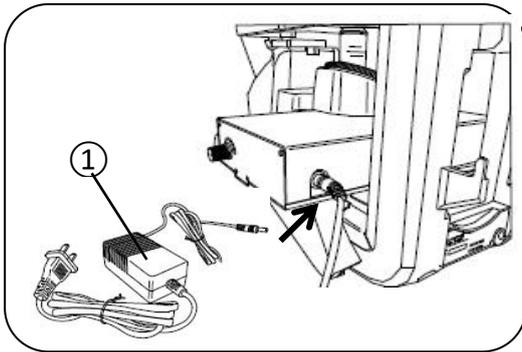
◆ Clip the fixing groove of fluorescence module into the installed bottom plate track, and slowly push it into the microscope light path along the track.



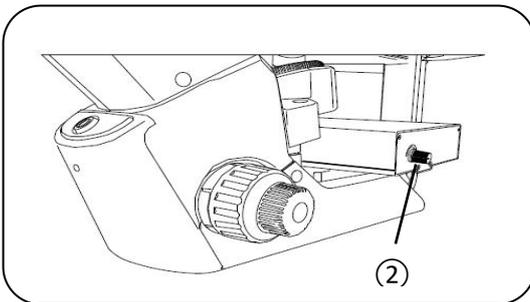
⊗ Tighten the screws behind the fixing base plate of the fluorescent module to fix the fluorescence module on the microscope.



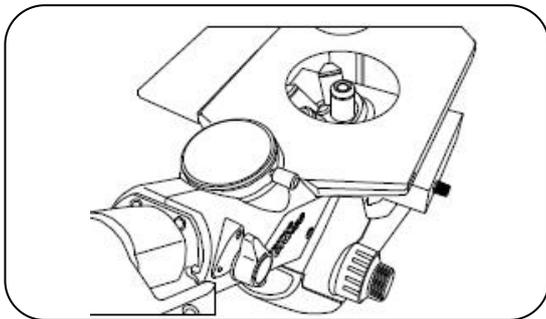
## IV. Operation



◆ Plug in the power adapter cable and plug the other end of the power adapter into the power socket.

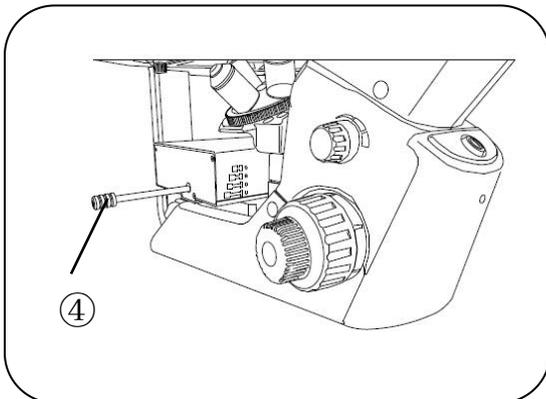


❖ Turn the switch / brightness adjustment knob to hear the sound of "click", that is, the light source has been turned on. Continue to turn the knob to increase the brightness. Adjust the fluorescence to the appropriate brightness.



◆ Put the sample on the stage, switch to the "10x" objective lens, and adjust the thickness of the quasi focus spiral focusing.

③



☒ Push and pull the fluorescent rod to exchange different fluorescence channels.

| Mark  | Channels                           |
|---|------------------------------------|
|  O | Empty for bright field observation |
|  B | Blue LED excitation                |
|  G | Green LED excitation               |
|  U | UV LED excitation                  |

**Attentions:**

1. The brightness of the LED in the illuminator can be adjusted freely according to the difficulty of excitation of the observed sample; generally, lower than the full load current is beneficial to prolong the service life of the LED lamp bead; if allowed, it is recommended to adjust the brightness below full load for use.
2. During fluorescent observation, the eyepiece should not directly face the light or natural light; adjust the position of the condenser to the lowest, and reduce the aperture of the condenser. If stray light cannot be eliminated, use a non reflective black plate to block the upper end of the condenser to prevent the reflection from interfering with the observation.
3. In the fluorescence observation, avoid the sample fluorescence quenching caused by too long illumination. Adjust the brightness to the minimum or turn off the power switch directly in the observation gap, and then adjust the brightness when observing.
4. Adjust the excitation block to UV / 0, and then turn off the power supply of the fluorescent module;
5. In the installation process, pay attention to the smoothness of the module position, otherwise the uniformity of the light may become worse.

**This power supply must strictly use the special adapter of 12V 2A, and the customer who uses other adapters shall be responsible for the equipment damage.**