

# Mshot

## MI-BGU-LED-TS100

**LED Fluorescence Illuminator  
User Manual**





**MI-BGU-LED-TS100**  
**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

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## I. Instruction

The MSHOT MI-LED series LED fluorescence attachment takes us of long working life LED as light source, can easily expand Nikon TS-100 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. Main specification

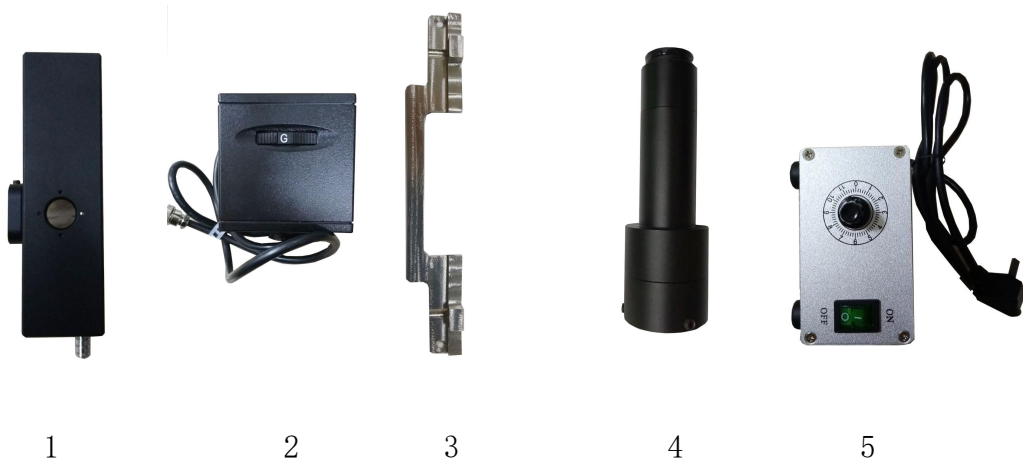
### 1. Specification sheet

Excitation group	LED wavelength	Excitation wavelength	Dichroic mirror	Emmision filter
B	470-475nm	450-490nm	505nm	515nmLP
G	530-535nm	510-550nm	565nm	575nmLP
UV	365nm	330-380nm	400nm	420nmLP

### 2. Optional specification

Excitation group	LED wavelength	Excitation wavelength	Dichroic mirror	Emmision filter
UV(BP)	365nm	340-390nm	400nm	450/65nm
B(BP)	470-475nm	455-495nm	500nm	535/45nm
G(BP)	530-535nm	525/45nm	560nm	565-625nm
Y(optional)	560nm	540-580nm	600nm	610nmLP

### III. Components and functions



1. LED module: containing fluorescence filter cubes, filters, lever used to exchange colors.
2. Light source: LED light source has different wavelength LED lamps.
3. Fixed sheet metal: used to connect and fix LED module to the microscope.
4. Lenses tube: connecting LED module with light source and for lighting.
5. Power control box : exchange current and voltage,connecting power,control light ON/OFF and brightness.

### IV. Installation

1. Loosen the fixing screws of waterproof baffle on the left and right sides of Nikon TS100 microscope host (as shown in Figure 01) with an internal hexagonal screw driver, and remove the plastic baffle plate to obtain the fluorescent module installation area.



Figure 01

2. Take out the fixed metal plate of the fluorescent module, place it in the installation area of TS100 microscope module after disassembly, and fix it with fixing screws (as shown in Fig. 02).

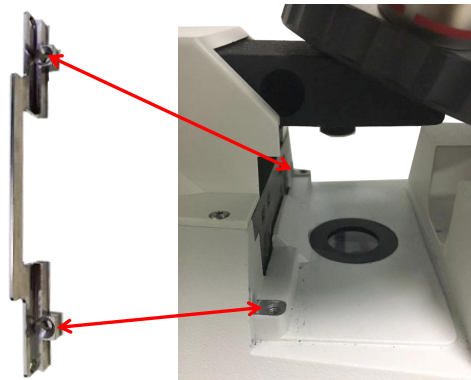


Figure 02

3. Place the main body of the excitation block of the fluorescent module into the module installation area of the fixed metal plate from the side (as shown in Fig. 03). There is a screw hole bit on the edge of both ends of the fixed metal plate. Use the fixed screw to connect the metal plate and the module body, and lock and fix it (as shown in Fig. 04).

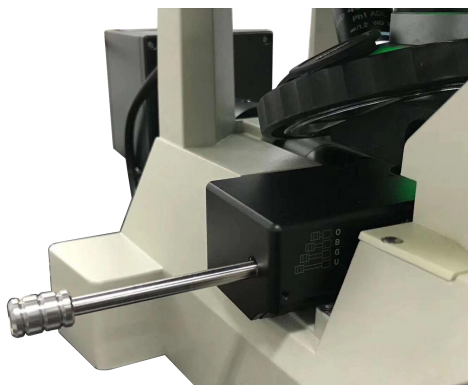


Figure 03

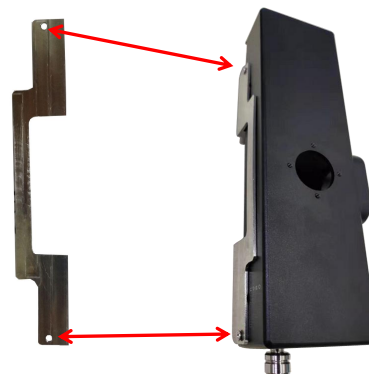


Figure 04

4. Insert in the fixing lenses tube from the bottom rear end of the microscope host, connect the main body of the fluorescent module, and lock and fix it with the hexagon screw (as shown in Fig. 04).



Figure 05

6. Connecting the light source: connect the light source illuminator with the lens fixing cylinder from the rear end of the microscope, and lock the two hexagon socket fixing screws on the lens fixing cylinder, as shown in Fig. 05

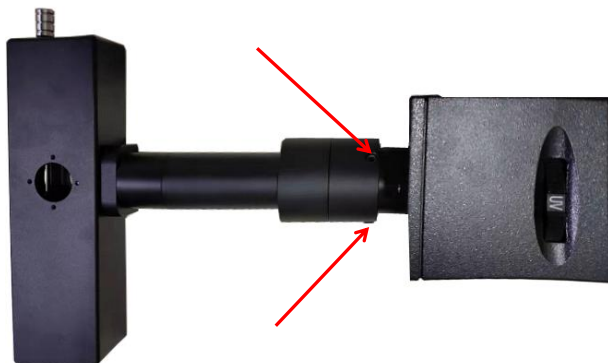


Figure 06

7. Connect the light source control box with the light source illuminator of the module, and the installation is completed, as shown in Figure 07.

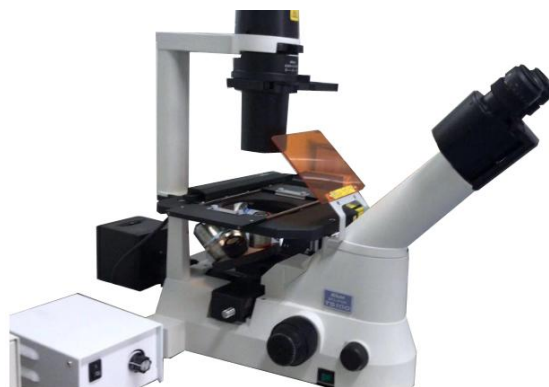


Figure 07

## V. Installation

1. Turn on the power and turn on the power control box switch (Figure 08)



Figure 08



2. Select the lighting source you want on the light illuminator. If you need UV lighting, select UV (as shown in Figure 09).

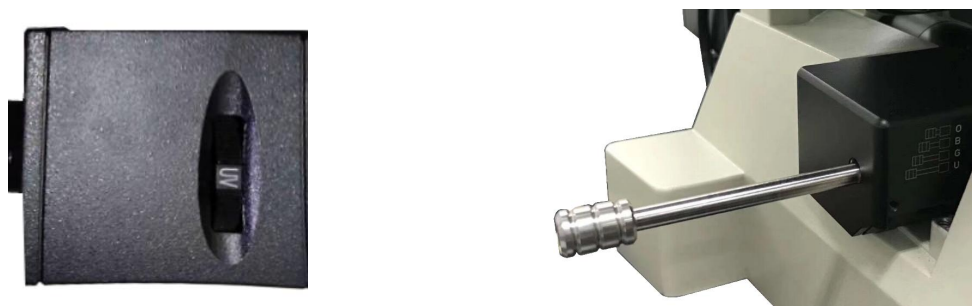


Figure 09

3. According to the diagram on the LED module, pull the pull rod to switch the fluorescent excitation block to the band matching the light source. If the light source selects UV lighting, the excitation block also switches to UV.

4. Adjust the brightness knob of the light source control box to adjust the illumination brightness of the light source according to the fluorescence intensity of the sample.

5. When it is necessary to use microscope bright field lighting, adjust the light source of the light source control box to the minimum, turn off the light source; then pull the rod of the excitation block of the fluorescent module to the UV / O position, and then operate the light field observation normally.

#### **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.**