

# User Manual

## MF-BG(U)-LED

Guangzhou Micro-shot Technology Optical Co., Ltd

[www.m-shot.com](http://www.m-shot.com)



MSHOT Multi-wavelength LED epi-fluorescence illumination adopts long working life LED as light source. It can easily make a conventional microscope in infinity optical system to a energy saving, high efficiency epi-fluorescence microscope. The microscope is easy to operate and durable with fluorescence microscopy on the basis of maintain bright field observation function. Have two colors mode (MF-BG-LED/ MF-RB-G-LED) and three color mode (MF-BGUV-LED/ MF-RB-GUV-LED). Except MSHOT microscope, the MF-BG(UV)-LED series product can match with microscopes in brand of Olympus, Nikon, Leica and Zeiss.

**A.Standard specification**

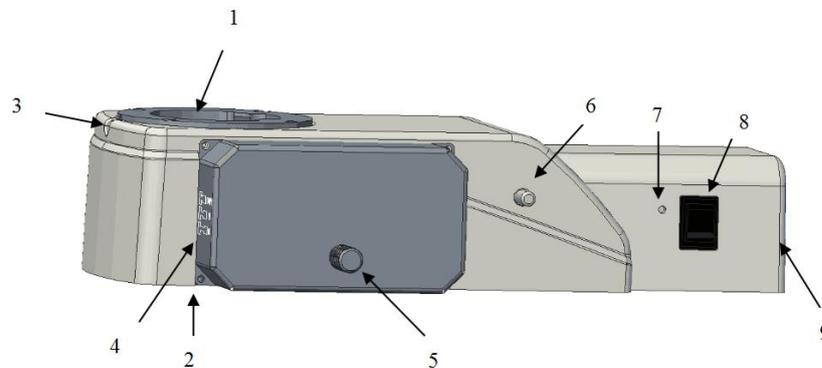
Excitation LED lamp color	High efficiency excitation	Excitation filter	Dichroic mirror	Emission filter
Blue(BP)	475/40nm	475/40nm	>500nm	535/45nm
Green(BP)	525/45nm	525/45nm	>560nm	535-655nm
Yellow	560/40nm	560/40nm	>600nm	595/60nm
UV	365nm	330-380nm	>400nm	>420nm

**Optional filter specification:**

Filter	High efficiency excitation	Excitation filter	Dichroic mirror	Emission filter
Royal blue	450-455nm	420-490nm	>500nm	>520nm
Blue	470-475nm	460-490nm	>500nm	>520nm
Green	530-535nm	510-550nm	>570nm	>590nm

**B. Component parts**

1. Above dovetail 2. Bottom dovetail 3. Observation head fix screw 4. Filter cube lever transfer mark 5.Filter cube transfer lever 6. Brightness adjustment knob 7. Blue color signal lamp 8.Power button 9. DC adapter



### C. Component function

1. Above dovetail: Used to connect with different brands microscope observation head, different microscope brand and item, dovetail is different.
2. Bottom dovetail: Used to connect with different brands microscope host, different microscope brand and item, dovetail is different.
3. Observation head fix screw: Fix the illumination with microscope observation head.
4. Filter cube transfer mark: Remind the lever position of filter cubes.
5. Filter cube transfer lever: Change among different color filter cubes and illuminations (one-stop).
6. Brightness adjustment knob: Adjust LED light source brightness.
7. Blue color signal lamp: Show electric working well.
8. DC adapter: Input 12V2A direct power supply.

### D. Operation Guide:

Mshot MF-BG(UV)-LED can match with different brands microscope to use, here take Olympus CX32 microscope as sample to introduce how to install and debug the LED fluorescence illumination.

1. Take off package to take out all accessories includes LED fluorescence illumination module, power adapter, allen driver, spare observation head fix screw. Then take off the microscope observation head as figure 01.



Figure 01

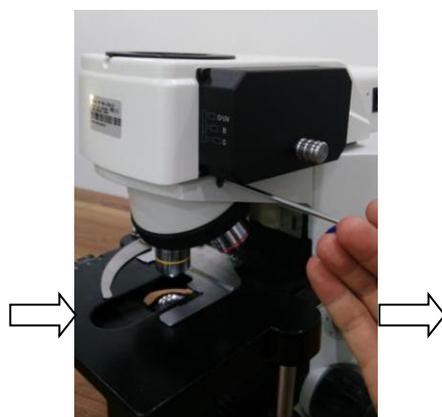


Figure 02



Figure 03

2. Insert in the LED fluorescence illumination module stably to microscope host dovetail, then fix the illumination with microscope host by allen driver. Then put on microscope observation head and fix with screw as figure 02.

3. Joint power adapter with power line with DC adapter seat, power on to see if blue signal lamp is power on. Twist brightness knob to get suitable light source brightness according to sample needs as figure 04, 05.



Figure 04

Figure 05

Figure 06

4. Get down microscope transmitted light condenser position to the lowest, and minimize the condenser diaphragm to reduce spray lights disturbing as figure 06.

5. When using bright field observation, change excitation filter cube to UV/O position and close the LED fluorescence illumination power.

#### **E. Attention**

1. The LED light source brightness can be adjusted according to sample fluorescence excitation needs. It is advised do not get up brightness to max to protect lamp.

2. When observation fluorescence, it is better to avoid light from eyepiece, and get down illumination condenser to the lowest position. If there is still spray light in eyepiece field of view, user can take a black barrier plate to cover the condenser to protect the condenser mirror to reflect light.

3. During fluorescence observation in order to protect sample fluorescence from cancellation after

long time lighting excitation, when there is no need to see sample, it is better to minimize the LED fluorescence illumination light brightness or close off directly.

4. Bright field observation requires change the LED fluorescence illumination lever to UV/O position, then close off the illumination power directly.

5. Please keep the LED fluorescence illumination put on stably and balanced, or it may lead light not even.

**6. It is strictly to use 12V 2A Mshot power adapter, the manufacture does not take responsibility if the machine is damaged because of using not proper power adapter.**