

## **BEBANG DL-Y2211**

# **BEBANG 100X-2000X Biological Microscope Instruction Manual**

Model: DL-Y2211

## **1. INTRODUCTION**

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This manual provides detailed instructions for the proper use, setup, and maintenance of your BEBANG 100X-2000X Biological Microscope. Designed for students, adults, beginners, and amateur scientists, this microscope is an educational tool for exploring the microscopic world in biology and life sciences. Please read this manual thoroughly before operating the device.

## **2. SAFETY INFORMATION**

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- Always handle the microscope with care to avoid damage to optical components.
- Do not expose the microscope to direct sunlight or high temperatures.
- Keep the microscope away from dust, moisture, and corrosive chemicals.
- Ensure the power adapter is connected to a suitable power source (240 Volts).
- Unplug the microscope from the power outlet when not in use or during cleaning.
- Supervise children during microscope use.

## **3. PACKAGE CONTENTS**

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Verify that all items listed below are included in your package:

- BEBANG 100X-2000X Biological Microscope
- WF25x Eyepiece
- 2x Optical Lens (Barlow Lens)
- 4x Achromatic Objective
- 10x Achromatic Objective
- 40x Achromatic Objective
- Phone Adapter

- 10 Operation Accessories (e.g., dropper, tweezers)
- Set of 15 Prepared Microscope Slides
- Eyepiece Cover
- Carrying Bag
- Power Adapter



Image 3.1: All components included in the BEBANG microscope package.

## 4. PRODUCT OVERVIEW

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Familiarize yourself with the main components of your microscope:

# Microscope structure



Image 4.1: Labeled diagram of the BEBANG microscope components.

1. **Eyepiece:** Where you look to view the specimen.
2. **Adjustable Head:** Allows for comfortable viewing angles.
3. **Locking Screw:** Secures the eyepiece or other attachments.
4. **Nosepiece:** Revolving turret holding the objective lenses.
5. **Objective Lenses:** Provide primary magnification (4x, 10x, 40x).
6. **Top LED:** Illuminates opaque specimens from above.
7. **Stage:** Platform where the specimen slide is placed.
8. **Diaphragm:** Controls the amount of light passing through the specimen.
9. **Bottom LED:** Illuminates transparent specimens from below.
10. **Coarse Focus Knob:** For large adjustments to focus.
11. **Fine Focus Knob:** For small, precise adjustments to focus.
12. **Power Input:** Connection point for the power adapter.
13. **LED Power Switch:** Turns the illumination system on/off.
14. **LED Brightness Switch:** Adjusts the intensity of the LED lights.
15. **Base:** Provides stability for the microscope.

## 5. SETUP

### 5.1 Initial Assembly

1. Carefully remove all components from the packaging.
2. Place the microscope base on a stable, flat surface.
3. Insert the WF25x eyepiece into the top of the monocular head. If using the 2x optical lens, insert it into the eyepiece tube first, then insert the WF25x eyepiece into the 2x optical lens.
4. Ensure the objective lenses (4x, 10x, 40x) are securely screwed into the revolving nosepiece.
5. Connect the power adapter to the power input on the microscope base and then to a wall outlet.

### 5.2 Adjusting the Monocular Head

The monocular head can be rotated 360 degrees for comfortable viewing and sharing. Gently rotate the head to your desired position. The 45° inclined optical tube helps reduce eye and neck strain during prolonged observation.



Image 5.1: Rotatable monocular head and objective lenses.

## 6. OPERATING INSTRUCTIONS

## 6.1 Powering On and Illumination

1. Ensure the microscope is plugged in.
2. Flip the LED Power Switch to turn on the illumination.
3. Adjust the LED Brightness Switch to achieve desired light intensity.
4. For transparent specimens, use the bottom LED. For opaque specimens, use the top LED. The microscope supports simultaneous upper and lower LED illumination.
5. Rotate the disc diaphragm located beneath the stage to control the amount of light reaching the specimen and improve contrast.

## 6.2 Placing a Specimen

1. Rotate the nosepiece to select the lowest power objective (4x).
2. Place a prepared slide onto the stage, securing it with the stage clips.
3. Center the specimen area you wish to observe over the opening in the stage.

## 6.3 Focusing

1. While looking through the eyepiece, slowly turn the **Coarse Focus Knob** to bring the specimen into approximate focus.
2. Once the image is roughly clear, use the **Fine Focus Knob** for precise adjustments to achieve a sharp, detailed image.



Image 6.1: Focusing knobs and illumination controls.

## 6.4 Changing Magnification

The microscope offers six magnification levels: 100X, 250X, 1000X, 200X, 500X, 2000X, achieved by combining the WF25x eyepiece (with or without the 2x optical lens) and the 4x, 10x, and 40x achromatic objectives.

1. To increase magnification, rotate the nosepiece to select a higher power objective (e.g., from 4x to 10x).
2. Make minor adjustments with the Fine Focus Knob to regain clarity.
3. For maximum magnification, ensure the 2x optical lens is inserted before the WF25x eyepiece and use the 40x objective.



Image 6.2: Magnification levels and disc diaphragm.



Image 6.3: WF25x Eyepiece and 2x Optical Lens.

## 6.5 Using the Phone Adapter

The included phone adapter allows you to capture images or videos of your observations.

1. Attach your smartphone to the adapter.
2. Secure the adapter with the phone to the eyepiece.

3. Open your phone's camera app and adjust the position until the microscope's field of view is centered on your screen.
4. Use the microscope's focus knobs to fine-tune the image on your phone screen.

## Discover the beauty of the microcosm



Image 6.4: Microscope with phone adapter in use.

## 7. MAINTENANCE

### 7.1 Cleaning

- Always unplug the microscope before cleaning.
- Use a soft, lint-free cloth to clean the exterior surfaces.
- For optical components (eyepieces, objectives), use a specialized lens cleaning solution and lens paper. Do not use abrasive materials or harsh chemicals.
- Remove dust from lenses with a blower brush before wiping.

### 7.2 Storage

- Store the microscope in a clean, dry, and dust-free environment.
- Use the provided eyepiece cover to protect the eyepiece from dust.

- Rotate the nosepiece so the lowest power objective (4x) is in position before storing.
- Lower the stage to its lowest position to prevent damage to the objectives.
- If storing for an extended period, place the microscope in its carrying bag.

## 8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No illumination	Power cable disconnected; LED switch off; Brightness too low	Check power connection; Turn on LED switch; Increase brightness
Image blurry/out of focus	Incorrect focus adjustment; Objective not clicked into place; Slide upside down	Adjust Coarse/Fine Focus; Rotate nosepiece until objective clicks; Reorient slide
Dark or uneven field of view	Diaphragm setting incorrect; Light source obstructed; Objective dirty	Adjust disc diaphragm; Clear any obstructions; Clean objective lens
Dust or spots visible in view	Dust on eyepiece or objective lens	Clean eyepiece and objective lenses with lens paper and solution

## 9. SPECIFICATIONS

Feature	Detail
Brand	BEBANG
Model	DL-Y2211
Material	Aluminum
Eyepiece	WF25x
Objective Lenses	4x, 10x, 40x Achromatic
Auxiliary Lens	2x Optical Lens (Barlow Lens)
Magnification Range	100X - 2000X
Illumination	Dual LED (Upper & Lower)
Condenser	0.65 NA Single-lens
Diaphragm	Five-color Disc Diaphragm
Focus System	Coaxial Coarse and Fine Focus
Head Type	45° Inclined, 360° Rotatable Monocular

Feature	Detail
Product Dimensions (L x W x H)	16 x 18 x 37 cm (6.3 x 7.1 x 14.6 inches)
Item Weight	1.1 kg (2.43 lbs)
Voltage	240 Volts

## 10. WARRANTY AND SUPPORT

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For warranty information or technical support, please refer to the contact details provided with your purchase or visit the official BEBANG website. Keep your purchase receipt as proof of purchase for any warranty claims.