

## DAVFTATAI

# Generic 7050 Stereo Trinocular Microscope with 24MP 4K Camera: User Manual

Model: DAVFTATAI

## 1. INTRODUCTION

This manual provides detailed instructions for the assembly, operation, and maintenance of your Generic 7050 Stereo Trinocular Microscope. This instrument is designed for precise observation and imaging, featuring a 3.5X-50X zoom range, 100X magnification capability, simul-focus optics, and an integrated 24MP 4K camera. Please read this manual thoroughly before use to ensure proper function and longevity of your microscope.

## 2. SAFETY INFORMATION

- Always handle the microscope with care to prevent damage to optical and mechanical components.
- Ensure the microscope is placed on a stable, level surface to prevent tipping.
- Disconnect the power supply before cleaning or performing any maintenance.
- Avoid direct exposure of the eyes to the LED ring light at maximum brightness.
- Keep the microscope away from dust, moisture, and corrosive chemicals.
- Do not attempt to disassemble or repair the microscope yourself. Contact support if issues arise.

## 3. PACKAGE CONTENTS

Verify that all components listed below are present in your package:

- 1 x Trinocular Stereo Zoom Head
- 1 x Pair WF10X/22MM Eyepieces
- 1 x 56-LED Ring Light
- 1 x Pillar Table Stand
- 1 x Focusing Rack
- 1 x Pair of Eye-Guards
- 1 x Dust Cover
- 1 x 24MP 4K Camera (with 0.5X Mount Adapter)
- Optional Auxiliary Objectives (0.5X, 0.7X, 2.0X) and Protection Glass may be included depending on your specific kit.



**Figure 3.1:** Overview of the microscope and its main components, including the trinocular head, stand, LED ring light, and various auxiliary lenses and adapters.

#### 4. SETUP INSTRUCTIONS

1. **Assemble the Stand:** Secure the pillar to the base of the table stand. Ensure it is firmly tightened.
2. **Attach the Focusing Rack:** Slide the focusing rack onto the pillar and secure it at a suitable height using the locking screw.
3. **Mount the Trinocular Head:** Carefully insert the trinocular stereo zoom head into the focusing rack's mounting ring. Tighten the securing screw to hold the head in place.
4. **Install Eyepieces:** Insert the WF10X/22MM eyepieces into the two ocular tubes of the trinocular head. Place the eye-guards over the eyepieces for comfortable viewing.
5. **Attach LED Ring Light:** Mount the 56-LED ring light around the objective lens of the microscope head. Connect its power cable to the provided power input.
6. **Install 4K Camera:** Attach the 0.5X mount adapter to the 24MP 4K camera. Then, insert the camera assembly into the third (trinocular) port on the microscope head. Secure it with the locking screw.
7. **Connect Power:** Connect the power adapter to the LED ring light and the camera (if applicable), then plug into a

suitable power outlet (100-240V, 50-60HZ).



**Figure 4.1:** The trinocular head, showing the eyepiece ports and the third port for camera attachment. Note the zoom adjustment knob on the side.

## 5. OPERATING INSTRUCTIONS

### 5.1 Basic Observation

1. **Place Specimen:** Position your specimen on the workbench directly under the objective lens.
2. **Adjust Illumination:** Turn on the 56-LED ring light and adjust its brightness using the variable intensity control knob to achieve optimal illumination for your specimen.
3. **Adjust Interpupillary Distance:** While looking through the eyepieces, adjust the distance between the two eyepiece tubes until you see a single, clear circular field of view.
4. **Focus:** Use the coarse and fine focus knobs on the focusing rack to bring the specimen into sharp focus.
5. **Adjust Zoom:** Rotate the zoom knob on the microscope head to change the magnification (0.7X-5X objective zoom, resulting in 7X-50X with WF10X eyepieces). The simul-focus feature maintains focus across the zoom range.

6. **Diopter Adjustment:** If one eye appears out of focus, use the diopter adjustment ring on one of the eyepieces to compensate for individual eye differences.

## 5.2 Using the 24MP 4K Camera

The integrated 24MP 4K camera allows for digital imaging and video recording of your observations.

- **Connect to Display:** Connect the camera's HDMI output to a compatible monitor or display for live viewing in 4K (3840\*2160@30FPS) or Full HD (1920\*1080@60FPS).
- **Camera Controls:** The camera features buttons for exposure, color adjustment, horizontal/vertical mirroring, picture freezing, taking pictures, and video recording.
- **Measurement Functions:** Utilize the basic HDMI 4K output with simple measurement cross hairs. Grid lines (horizontal, vertical, center scale) can be customized in color and thickness for precise measurements.
- **Storage:** Images (6552\*3688 24MP) and videos can be saved to an external storage device (not included, typically via USB or SD card slot if available on the camera unit).

### Feature:

Sensor: 1/1.8 IMX377

Effective pixels: 24 million

Resolution: 3840\*2160@30FPS 1920\*1080@60FPS

Picture Pixel: 6552\*3688 24MP

Output interface: HDMI

Pixel size: 1.55UM\*1.55UM

Basic function: HDMI 4K output with simple measurement cross hair

Picture quality adjustment: exposure, color

Camera functions: horizontal/vertical mirroring, picture freezing, taking pictures, and video recording

Grid lines: horizontal lines, vertical lines, and center scale lines can be customized in color and thickness

Power supply: DC-12V/1A



**Figure 5.1:** The 24MP 4K camera unit, highlighting its HDMI output, Type-C port, LED indicator, and control buttons for various camera functions.

## 6. MAINTENANCE

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- **Cleaning Optics:** Use a soft, lint-free cloth and a specialized optical cleaning solution to clean eyepiece and objective lenses. Avoid touching optical surfaces with bare hands.
- **Cleaning Body:** Wipe the microscope body with a soft, damp cloth. Do not use harsh chemicals or abrasive cleaners.
- **Dust Protection:** Always cover the microscope with the provided dust cover when not in use to prevent dust accumulation.
- **Storage:** Store the microscope in a dry, cool place, away from direct sunlight and vibrations.

## 7. TROUBLESHOOTING

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- **No Image/Dark Field:**
  - Check if the LED ring light is powered on and brightness is adjusted.
  - Ensure the specimen is correctly positioned and in focus.
  - Verify eyepieces are properly seated.
- **Blurred Image:**
  - Adjust the focus knobs (coarse and fine).
  - Clean the eyepieces and objective lenses.
  - Adjust interpupillary distance and diopter settings.
- **Camera Not Displaying:**
  - Ensure the camera is properly connected to the microscope and the display.
  - Check power supply to the camera.
  - Verify the display input source is set correctly to HDMI.

## 8. SPECIFICATIONS

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| Feature                 | Specification                                   |
|-------------------------|---|
| Head                    | 360° rotatable, 45° inclined trinocular         |
| Eyepieces               | WF10X/22MM (30mm super widefield high-eyepoint) |
| Objective Zoom Range    | 0.35X-9.0X (with Barlow lenses)                 |
| Magnification           | 7X-50X (with WF10X eyepieces)                   |
| Working Distance        | 100mm (4")                                      |
| Diopter Adjustment      | +/- 5dp   |
| Interpupillary Distance | 55-75mm (2-3/16" - 2-15/16")                    |
| Illumination            | 56-LED Ring Light, 0-100% adjustable brightness |
| Ring Light Power Input  | 100-240V, 50-60HZ                               |
| Camera Sensor           | 1/1.8 IMX377                                    |
| Effective Camera Pixels | 24 million                                      |

| Feature             | Specification                                   |
|---------------------|---|
| Camera Resolution   | 3840*2160@30FPS (4K), 1920*1080@60FPS (Full HD) |
| Picture Pixel       | 6552*3688 (24MP)                                |
| Output Interface    | HDMI  |
| Pixel Size          | 1.55UM*1.55UM                                   |
| Camera Power Supply | DC-12V/1A                                       |
| Item Weight         | 5000 Grams (11.02 pounds)                       |
| Model Number        | DAVFTATAI                                       |

## 9. WARRANTY AND SUPPORT

We are committed to customer satisfaction. For any questions, technical assistance, or support regarding your microscope, please contact our customer service. We strive to answer your questions promptly within 24 hours. Please refer to your purchase documentation for specific warranty terms and contact information.