TOMLOV DM501 Pro

TOMLOV DM501 Pro 2K Flexible Arm Digital Microscope User Manual

Model: DM501 Pro

INTRODUCTION

This manual provides detailed instructions for the setup, operation, maintenance, and troubleshooting of your TOMLOV DM501 Pro 2K Flexible Arm Digital Microscope. Please read this manual thoroughly before using the device to ensure proper functionality and to maximize your viewing experience.

WHAT'S IN THE BOX

- 10.1 inch 2K HDMI Digital Microscope
- Newest Cantilever Stand
- Pro Soldering Mat
- Gooseneck LED Fill Light
- Slides Bottom Transmitted Light

SETUP

1. Assembling the Cantilever Stand

The TOMLOV DM501 Pro features a flexible cantilever stand designed for versatile positioning and space efficiency. Follow these steps for assembly:

1. Assemble the clamp with the cantilever stand. Ensure all connections are secure.
2. Fix the base clamp onto a stable surface, such as a workbench or desk. The clamp supports both vertical and lateral clamping methods for optimal stability.
3. Fix the microscope unit into the clamp on the cantilever arm.
4. Adjust the cantilever stand to achieve your desired observation angle and working distance. The stand offers 3-axis rotation and 360° rotation at the base, with a maximum extension of 25.6 inches and a maximum height of 29.5 inches.
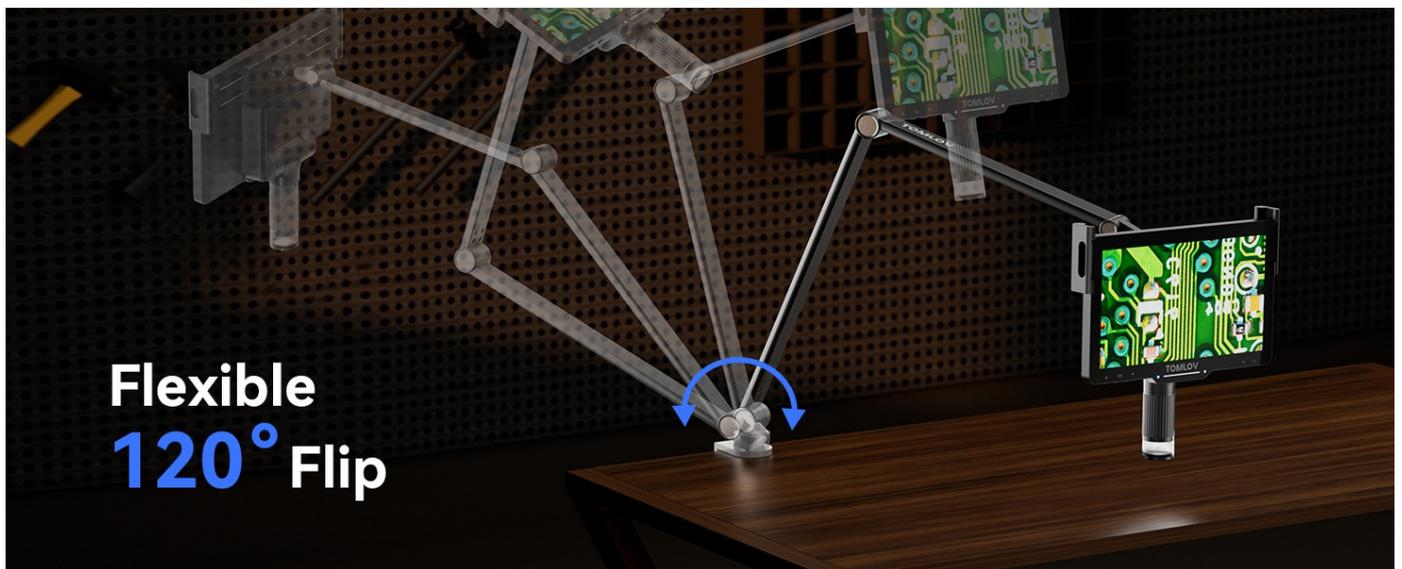
Figure 1: Cantilever Stand Assembly Steps. This image illustrates the four main steps for assembling the cantilever stand, from attaching the clamp to the arm, securing it to a surface, mounting the microscope, and finally adjusting its position.
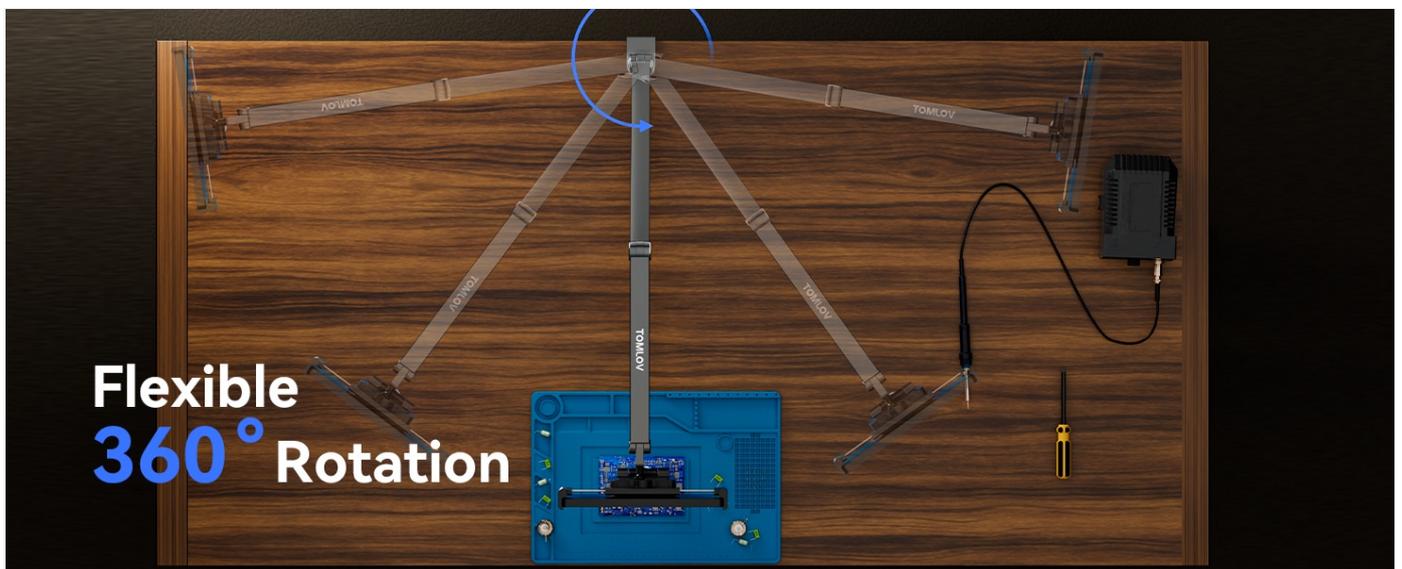

Figure 2: Cantilever Stand Flexibility. This image demonstrates the extensive range of motion and adjustability of the cantilever stand, highlighting its ability to be positioned for various tasks.
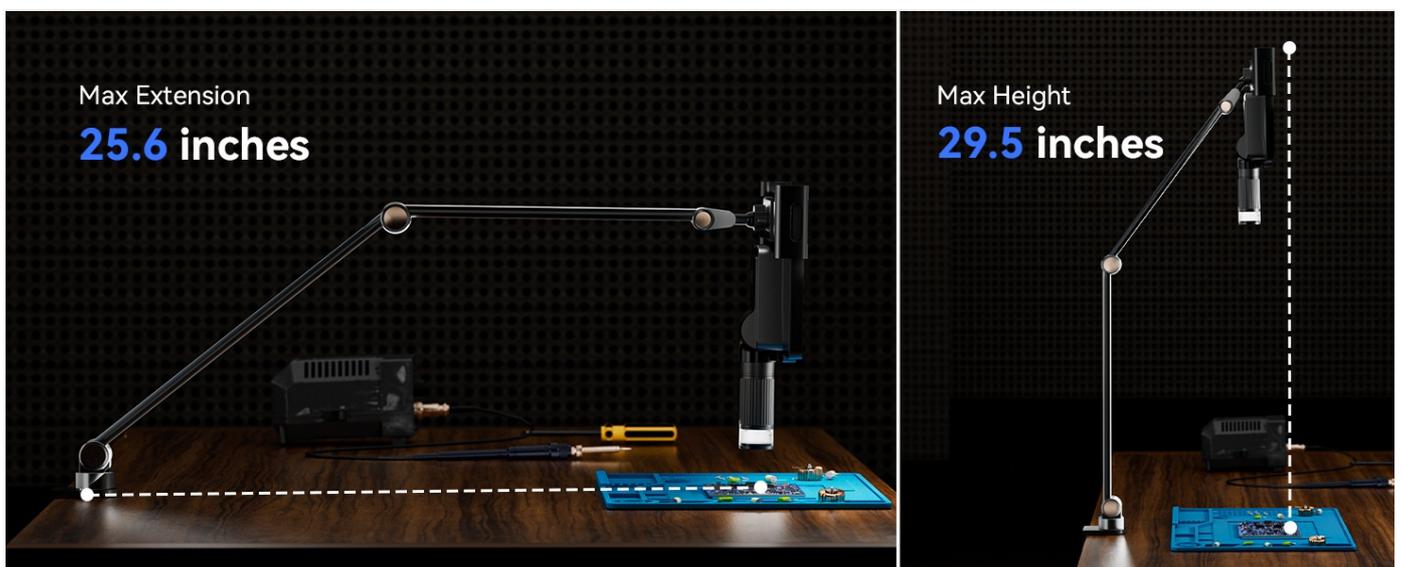

Figure 3: 120-Degree Flip Capability. This image illustrates the stand's ability to flip the microscope unit by 120 degrees, offering more viewing angles.

Two Fixed Methods – for Your Best Convenience

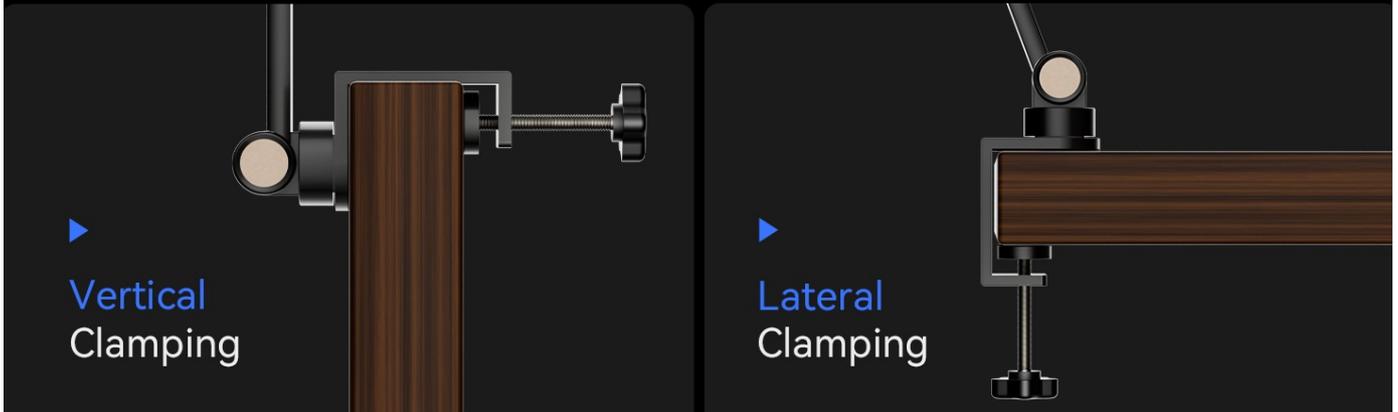▶ Vertical Clamping

▶ Lateral Clamping

Figure 4: 360-Degree Rotation. This image displays the base of the cantilever stand rotating 360 degrees, providing full rotational flexibility for the microscope.

Crystal Clear & Vivid & Saturated Colors

Stunning 10.1"
2K HD IPS Screen

New upgraded 2K HD IPS screen with over 16.7 million color codes and 178 degrees of viewing angle, can display greater natural detail, richer tonal gradations, and more realistic images, allowing you see more, see clearly.

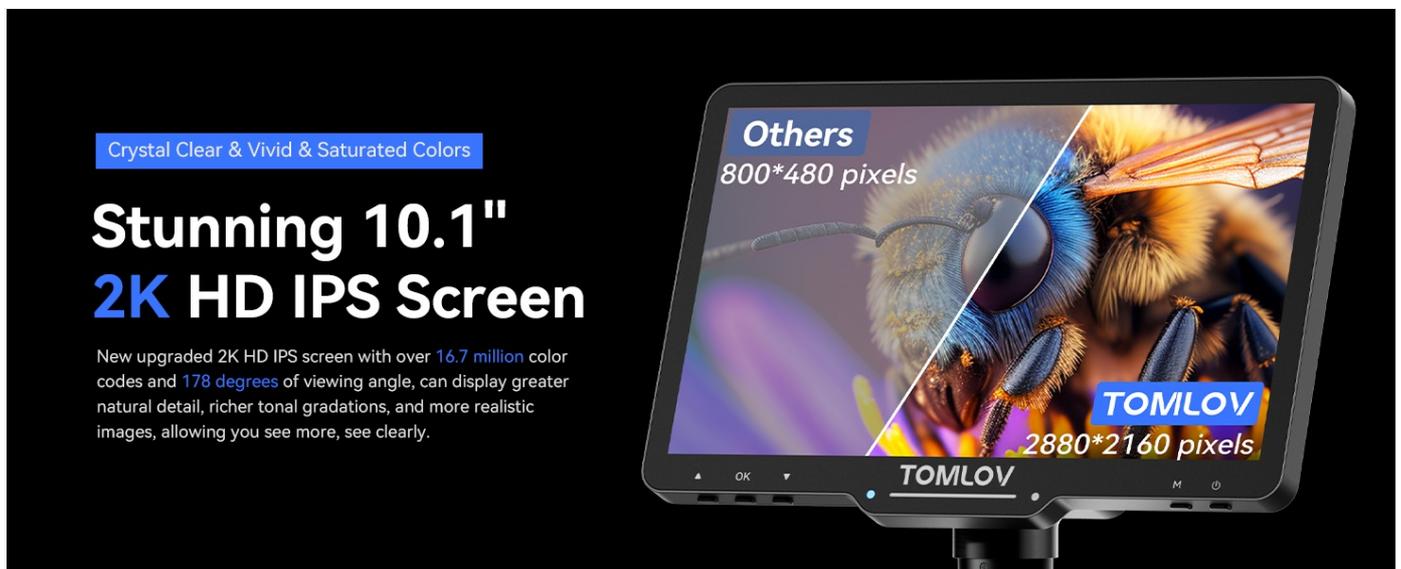Others
800*480 pixels

TOMLOV
2880*2160 pixels

Figure 5: Maximum Extension and Height. This image highlights the maximum reach (25.6 inches) and height (29.5 inches) of the cantilever stand, illustrating its adaptability for various tasks.

TOMLOV Advanced Real HD IPS Screen

Others Traditional LCD Screen

VS

Figure 6: Two Fixed Methods. This image displays the two clamping options: vertical clamping for table edges and lateral clamping for flat surfaces, ensuring secure attachment.

2. Soldering Mat Placement

Place the provided heat-resistant soldering mat on your workbench. This mat protects your surface from high temperatures (up to 1112°F / 600°C) and offers multiple functional zones for organizing components during electronic repair or other detailed work.

Figure 7: Pro Soldering Mat Layout. This image details the layout of the soldering mat, showing designated areas for parts, tools, magnetic sections, screw positioning, and a scale ruler.

OPERATING INSTRUCTIONS

1. Powering On/Off

Connect the microscope to a power source using the provided adapter. Press the power button on the device to turn it on. The 10.1-inch IPS HD screen will illuminate, displaying the live view from the microscope camera. Press the power button again to turn off the device.

Figure 8: Microscope in Operation. This image shows the TOMLOV DM501 Pro microscope set up on a workbench, displaying a circuit board on its screen, with the gooseneck lights illuminating the work area.

2. Adjusting Magnification and Focus

The DM501 Pro offers a zoom range of 5X to 2000X. Adjust the focus knob on the microscope body to achieve a clear image of your specimen. The flexible arm allows you to easily change the distance between the lens and the object, which also affects the magnification and field of view.

Figure 9: Magnification Levels and Applications. This image illustrates the microscope's zoom capabilities from 50X to 2000X, showcasing its use for soldering, coin collection, watch repair, and plant inspection.

3. Using the Gooseneck LED Fill Light

The dual gooseneck LED fill lights provide adjustable illumination for your workspace. Use the inline controller to:

- **Brightness + / -:** Adjust the light intensity through 10 levels.
- **Mode Switch:** Toggle between lighting both lights, or either of the two lights individually.
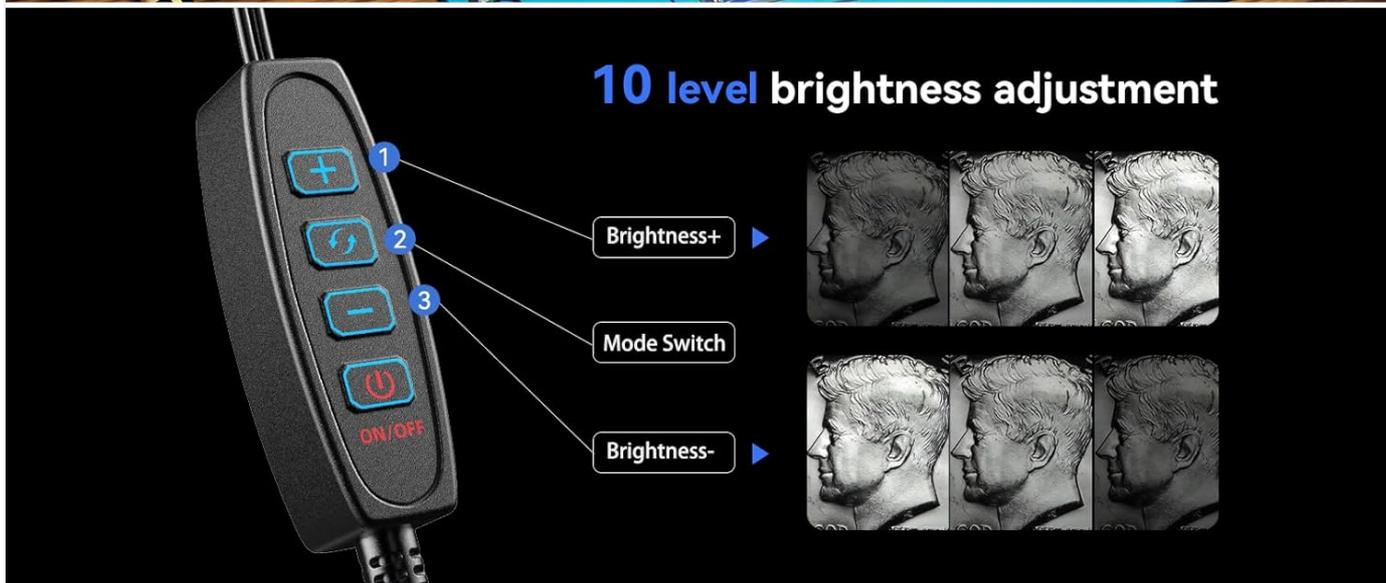- **ON/OFF:** Turn the lights on or off.

Figure 10: Gooseneck LED Fill Light Control. This image displays the flexible gooseneck lights illuminating a circuit board, with an inset showing the control panel for adjusting brightness and mode.

4. Utilizing the Polarizer Lens

The microscope lens is equipped with a polarizer to reduce glare and reflections from shiny objects like coins, PCBs, or metal surfaces. Rotate the polarizer lens to achieve optimal contrast and clarity, enhancing your observation of reflective materials.

Figure 11: Polarizer Filter Effect. This diagram shows a comparison of an object viewed without and with the polarizer, demonstrating how it reduces reflections for clearer images.

5. External Display Output (HDMI & USB)

The DM501 Pro supports output to external displays for a larger view or sharing. Use the HDMI port to connect to a TV or projector, or the USB-C interface to connect to a computer (Windows/Mac OS). This allows for real-time viewing on a larger screen and facilitates collaboration or presentations.
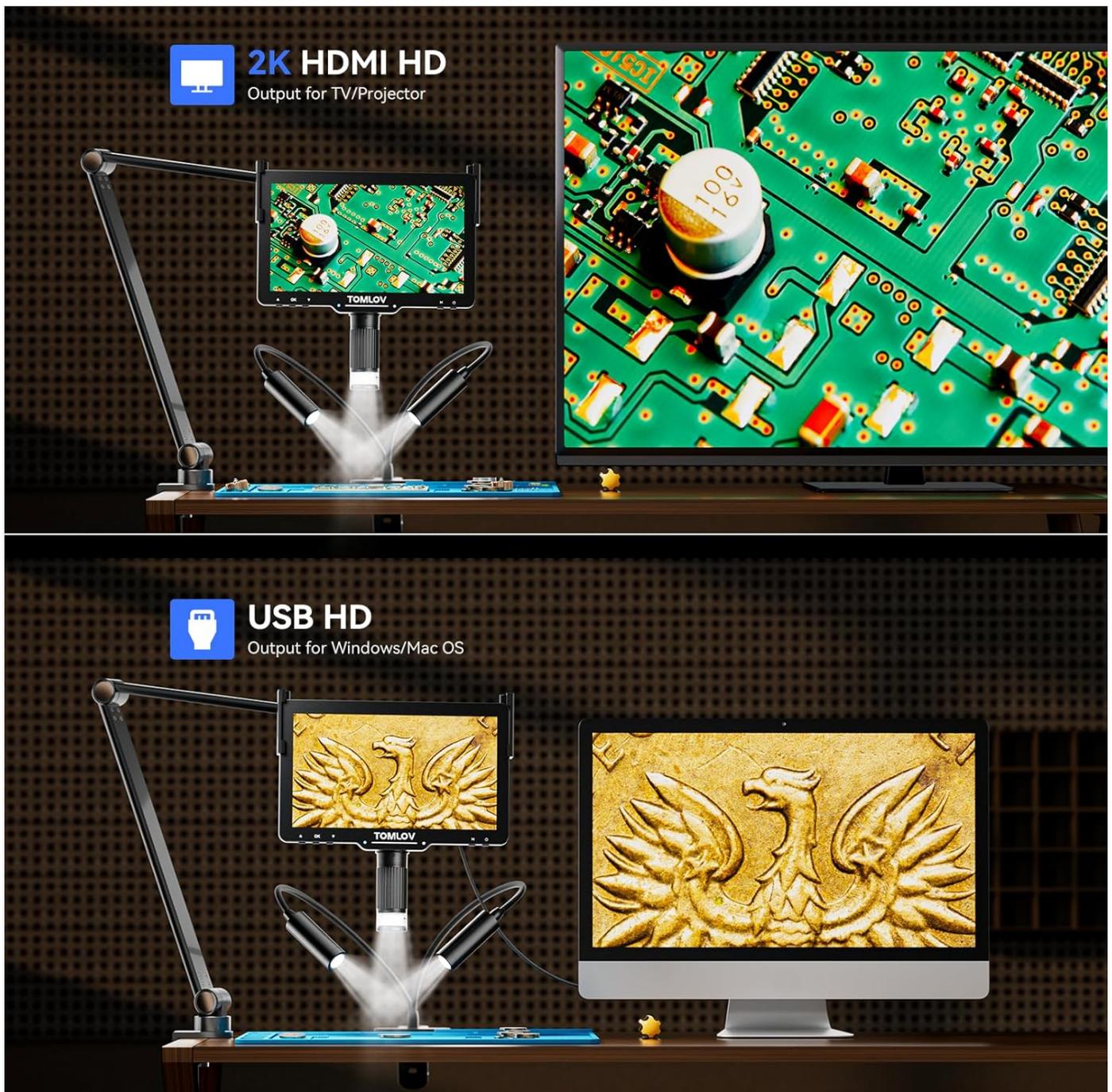
Figure 12: HDMI and USB Output. This image demonstrates the microscope's connectivity options, showing it displaying its view on both a large TV screen via HDMI and a laptop via USB.

6. Capturing Photos and Videos

The microscope supports capturing 48MP still images and 2K UHD (2880*2160P 60fps) videos. A 32GB SD card is included for storage. Insert the SD card into the designated slot on the microscope. Use the controls on the device or the wireless remote to capture media.
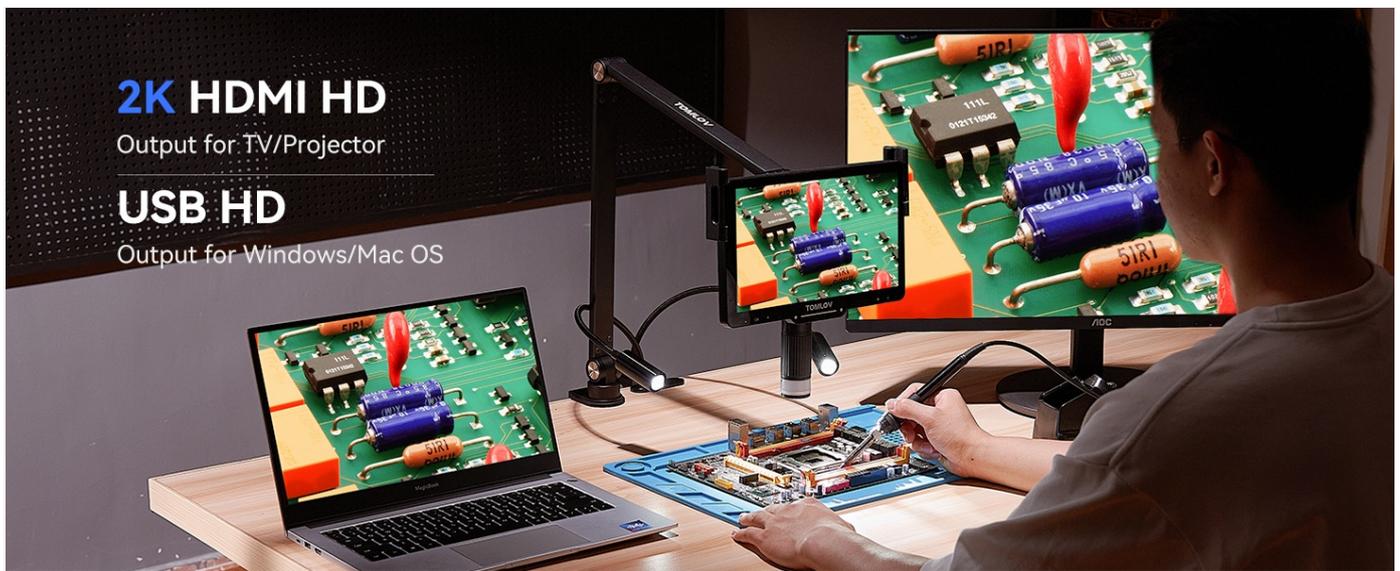
Figure 13: SD Card and Media Capture. This image highlights the SD card slot for storage and provides visual examples of high-resolution photos and videos captured by the microscope.

7. Wireless Remote Control

A 2.4G wireless remote control is provided for convenient operation from a distance (8-10m range). This allows you to adjust settings, capture images, or record videos without disturbing the microscope's position or your work.
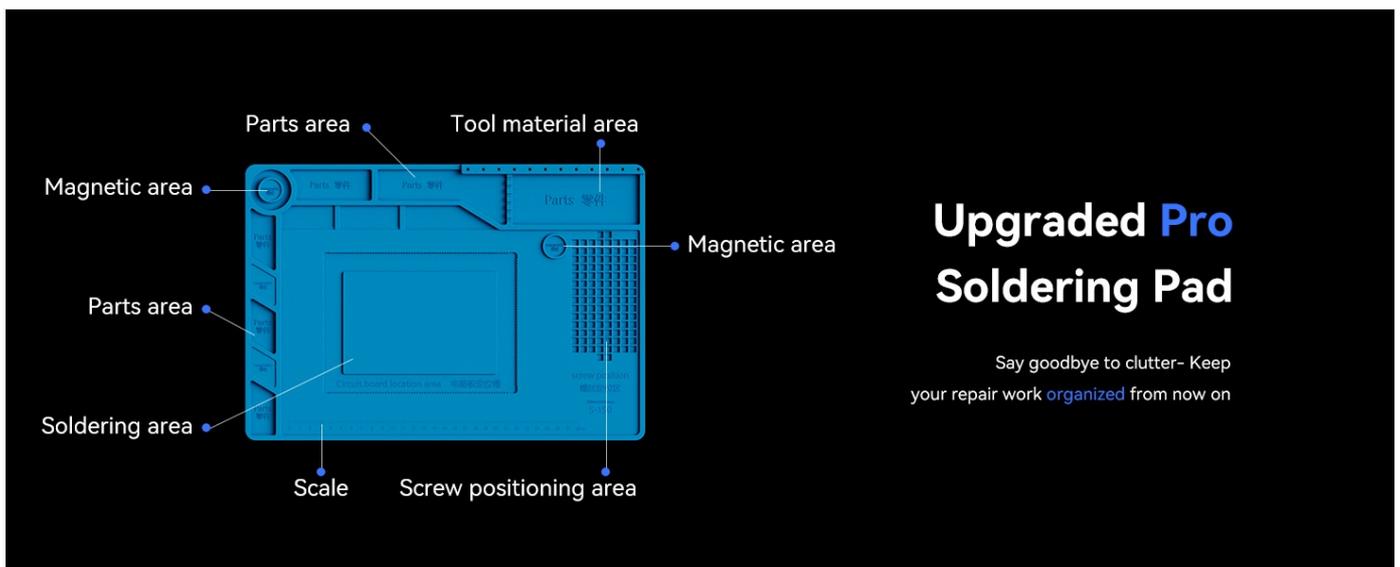

Figure 14: Wireless Remote Control. This image shows a user operating the microscope remotely with the 2.4G wireless remote, demonstrating its convenience for hands-free control.

MAINTENANCE

- **Cleaning the Screen:** Use a soft, lint-free cloth to gently wipe the 10.1-inch IPS HD screen. Avoid abrasive cleaners or solvents.
- **Cleaning the Lens:** For the microscope lens, use a specialized lens cleaning kit (brush, air blower, lens cleaning solution, and microfiber cloth) to remove dust and smudges. Be careful not to scratch the lens.
- **General Cleaning:** Keep the microscope body and stand free of dust and debris. Use a dry or slightly damp cloth for cleaning.
- **Storage:** When not in use, store the microscope in a clean, dry place, away from direct sunlight and extreme temperatures.

TROUBLESHOOTING

Problem	Possible Cause	Solution
No image on screen / Device won't power on	Power cable not connected or loose. Battery depleted.	Ensure the power cable is securely connected. Charge the internal battery (up to 3 hours of operation).
Image is blurry or out of focus	Focus knob not adjusted. Incorrect working distance.	Rotate the focus knob until the image is clear. Adjust the height of the microscope using the cantilever arm to find the optimal working distance for the desired magnification.
Excessive glare or reflections on shiny objects	Polarizer lens not adjusted or used.	Rotate the polarizer lens on the microscope to minimize reflections and improve contrast. Adjust the angle of the gooseneck lights.
Image appears dim or unevenly lit	Gooseneck LED fill lights are off or set to low brightness.	Turn on the gooseneck lights and adjust their brightness using the inline controller. Position the lights to evenly illuminate the specimen.
Microscope image shakes or vibrates	Unstable mounting of the cantilever stand. External vibrations.	Ensure the cantilever stand is securely clamped to a stable, heavy surface. Minimize movement around the workbench during observation, especially at high magnifications.
Cannot connect to external display (HDMI/USB)	Incorrect cable connection. Display input not selected.	Verify that the HDMI or USB cable is correctly connected to both the microscope and the external display. Select the correct input source on your TV or monitor. For USB, ensure necessary drivers or software are installed on your computer if required.

SPECIFICATIONS

Feature	Detail
Model Name	DM501 Pro
Screen Size	10.1 inches
Screen Type	True HD IPS with Full Glass Coverage (178 Degrees Real Angle of View)
Video Resolution	2K UHD (2880*2160P 60fps)
Image Resolution	48MP (9456x5312P)
Sensor	CMOS 1/3.0" IMX Sensor
Magnification	5X to 2000X

Feature	Detail
Output Interfaces	HDMI, USB-C
Storage	Supports SD card (32GB included)
Lighting	High Lumen Gooseneck LED Fill Light (10 levels brightness adjust)
Special Features	Flexible Arm Stand (3-axis rotation, 360° base rotation), Polarizer Lens, Wireless Remote Control, Heat-Resistant Soldering Mat
Material	Aluminum alloy
Power	5 Volts, 1 Lithium Ion battery (included)
Battery Life	Up to 3 hours
Product Dimensions	25.6 x 25.6 x 29.5 inches (max extension/height)
Item Weight	8.38 pounds

Figure 15: CMOS Sensor and Lens Diagram. This image provides an exploded view of the microscope's optical system, highlighting the 48MP CMOS 1/3.0" IMX sensor and lens components.

WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the official TOMLOV website or contact their customer service directly. Keep your purchase receipt for warranty validation.
Official TOMLOV Store: TOMLOV Store on Amazon

PRODUCT VIDEO

Your browser does not support the video tag.

Video 1: TOMLOV DM501 Pro 2K Flexible Arm Digital Microscope Overview. This video provides a visual demonstration of the microscope's features, including its flexible arm, screen quality, and various applications.