Vabiooth Darkfield Microorganism Model

Vabiooth Lab Darkfield & Brightfield Trinocular Compound Microscope User Manual

Model: Darkfield Microorganism Model (B0CJR35XZD)

1. Introduction

This user manual provides comprehensive instructions for the Vabiooth Lab Darkfield & Brightfield Trinocular Compound Microscope. Designed for detailed observation of microorganisms and cells, this microscope offers versatile magnification and advanced features for educational, research, and hobbyist applications. Please read this manual thoroughly before operation to ensure proper use and maintenance.

2. Product Overview and Components

The Vabiooth Trinocular Compound Microscope is equipped with a range of features to enhance your viewing experience. Below is an overview of the main components and their functions.

Figure 2.1: Complete Vabiooth Microscope System, including the main unit, eyepieces, 7-inch monitor, and aluminum carry case.

2.1. Brightfield & Darkfield Capabilities

This microscope supports both brightfield and darkfield observation modes, facilitated by an NA 1.25 Abbe condenser with an iris diaphragm. This allows for versatile viewing of various specimens. *Note: This darkfield microscope is optimized for researching organisms and cells, and is not intended for live blood analysis due to specific light requirements.*

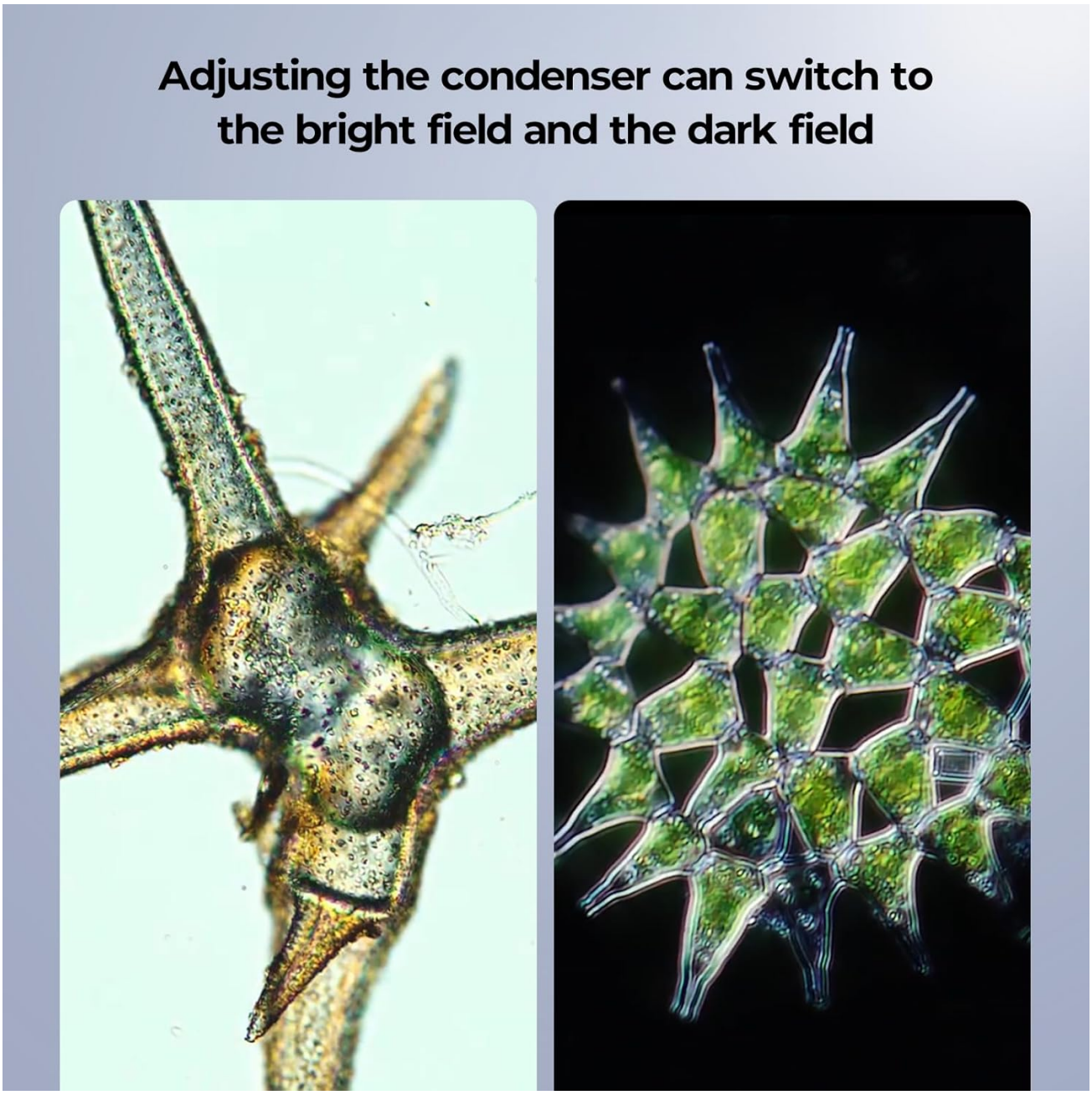


Figure 2.2: Visual comparison demonstrating the difference between brightfield and darkfield viewing modes.

2.2. Eyepieces & LCD Screen

The microscope is equipped with WF10X, 16X, and 25X glass eyepieces, set at an ergonomic 30-degree tilt to minimize neck strain. Interpupillary distance is easily adjustable. A 5MP E-eyepiece and a 7-inch 360-degree rotatable LCD display provide a larger field of view directly from the screen, eliminating the need for an external display and facilitating sharing. Four achromatic objectives (4x, 10x, 40x(s), 100x(Spring Oil)) offer magnification up to 2500X.

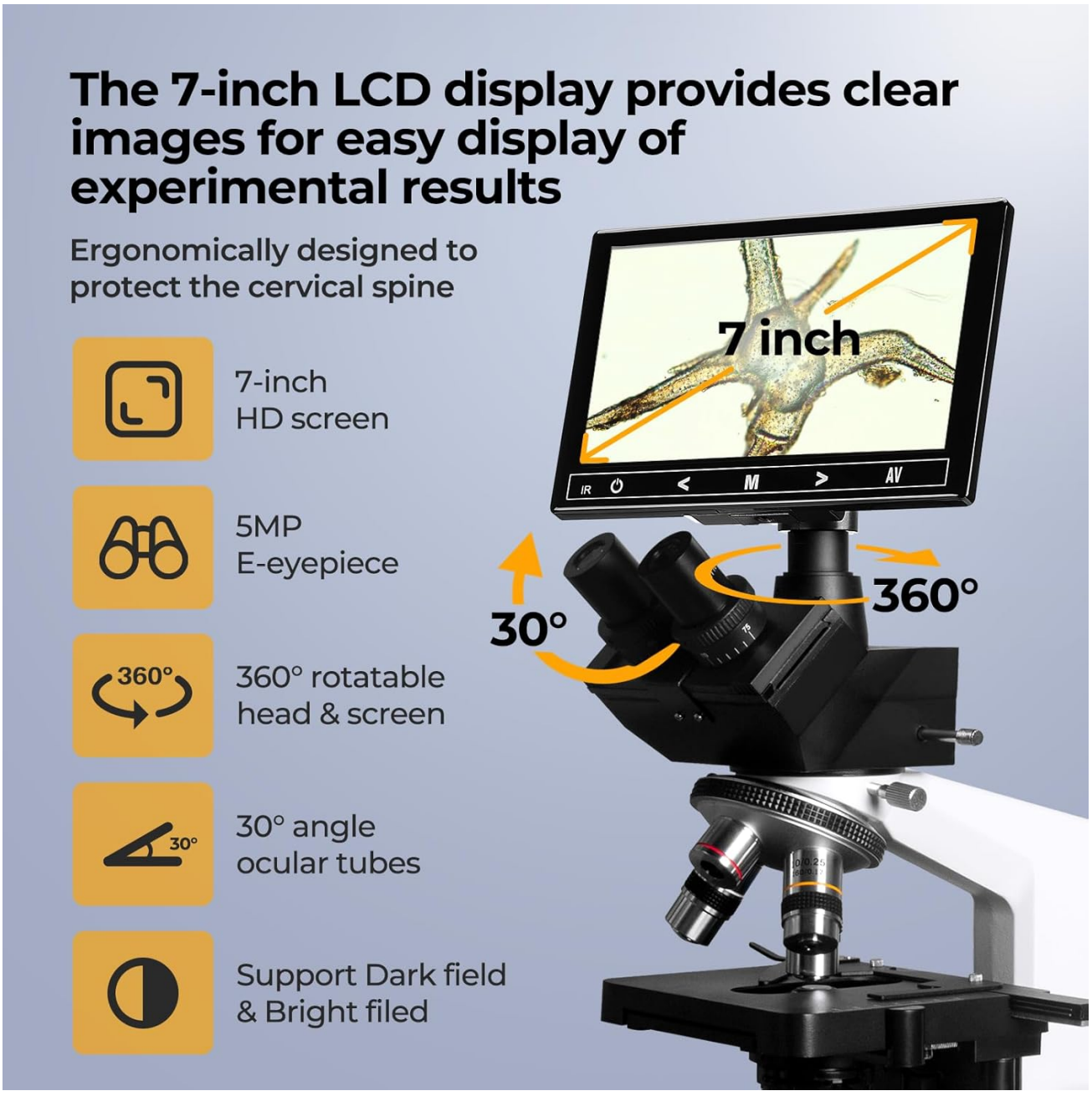


Figure 2.3: The 7-inch LCD display and adjustable trinocular head for comfortable and shared viewing.

2.3. Double-Layer Mechanical Stage & Focus

The double-layer mechanical stage features 1.0mm stage divisions, allowing for precise slide manipulation along the X- and Y-axes. This enables accurate coordinate recording, making it easy to return to specific points of interest on a slide. Separate coarse and fine focus knobs are provided for quick and accurate focusing.

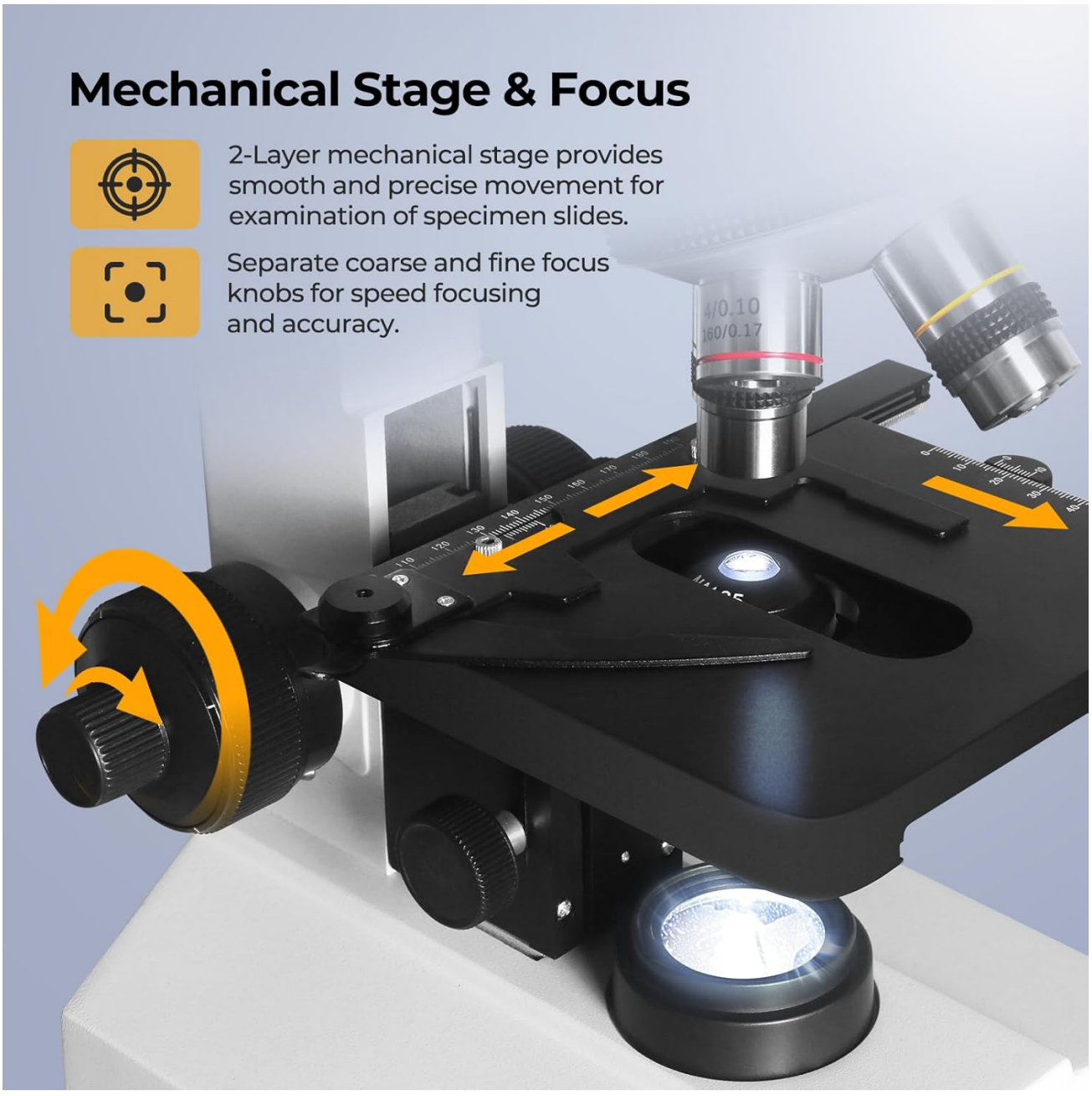


Figure 2.4: The mechanical stage with X-Y axis controls for precise specimen positioning.

2.4. LED Illumination & Condenser

The microscope utilizes LED illumination for clear examination and light control. The 1.25 NA Abbe condenser with iris diaphragm further enhances light management, providing optimal contrast and resolution for various specimens.

Figure 2.5: The LED light source and Abbe condenser for adjustable illumination.

2.5. Aluminum Carry Case

The microscope comes with a durable aluminum carry case, designed to protect the device and its accessories during transport and storage. This ensures the longevity and safety of your equipment.

Figure 2.6: The robust aluminum carry case for secure storage and portability.

3. Setup Guide

1. **Unpacking:** Carefully remove all components from the aluminum carry case. Verify that all parts listed in the packing list are present.
2. **Base Placement:** Place the microscope base on a stable, level surface, away from direct sunlight and vibrations.
3. **Head Assembly:** Gently attach the trinocular head to the microscope body. Secure it with the set screw, if applicable.
4. **Eyepiece Insertion:** Insert the desired eyepieces (WF10X, 16X, or 25X) into the ocular tubes.
5. **Objective Installation:** Rotate the revolving nosepiece to ensure the lowest power objective (4x) is in position. Carefully screw in the objective lenses into their respective threads on the nosepiece.
6. **Monitor Attachment:** Connect the 7-inch LCD monitor to the trinocular port. Ensure a secure connection for both video signal and power.
7. **Power Connection:** Connect the power adapter to the microscope and plug it into a standard 110V AC outlet.

4. Operating Instructions

Follow these steps for effective operation of your Vabiooth microscope:

1. **Power On:** Turn on the microscope's main power switch and the LCD monitor.
2. **Specimen Placement:** Place your prepared slide on the mechanical stage, securing it with the stage clips.
3. **Initial Focus (Low Power):**
    - Rotate the nosepiece to select the 4x objective lens.
    - Use the coarse focus knob to bring the specimen into approximate focus.
    - Adjust the mechanical stage using the X-Y knobs to center the specimen.
    - Use the fine focus knob for sharp focus.
4. **Adjusting Illumination:** Adjust the LED light intensity and the iris diaphragm on the Abbe condenser to achieve optimal brightness and contrast for your specimen.
5. **Changing Magnification:** Rotate the nosepiece to switch to higher power objectives (10x, 40x, 100x). When switching to higher powers, only use the fine focus knob for adjustments.
6. **Using the 100x Oil Immersion Objective:**
    - After focusing with the 40x objective, rotate the nosepiece halfway between the 40x and 100x objectives.
    - Place a small drop of immersion oil directly onto the center of the specimen slide.

- Rotate the 100x objective into the oil drop.
- Use only the fine focus knob to bring the image into sharp focus.

7. **Darkfield Observation:** To switch to darkfield, adjust the Abbe condenser as per specific darkfield setup instructions (often involves inserting a darkfield stop or adjusting the condenser to block central light).
8. **Using the LCD Monitor:** The 7-inch LCD monitor displays the live view from the 5MP E-eyepiece. Use the monitor's controls for brightness, contrast, and other display settings. The monitor can be rotated 360 degrees for convenient viewing by multiple users.

4.1. Official Product Video

For a visual guide on the microscope's features and operation, please refer to the official product video below. This video demonstrates various functionalities, including brightfield and darkfield viewing of microorganisms.

Video 4.1: Demonstration of the Vabiooth Darkfield & Brightfield Trinocular Compound Microscope, showcasing its capabilities in observing various microscopic life forms.

5. Maintenance

- **Cleaning Lenses:** Use only specialized lens cleaning paper and lens cleaning solution. Gently wipe the lens surfaces in a circular motion. Avoid touching lenses with bare hands.
- **Cleaning Body:** Wipe the microscope body with a soft, dry cloth. For stubborn stains, a slightly damp cloth can be used, followed by a dry wipe.
- **Storage:** Always store the microscope in its aluminum carry case when not in use to protect it from dust and physical damage. Ensure all objectives are clean and the lowest power objective is in place before storing.
- **Immersion Oil:** After using the 100x oil immersion objective, always clean the oil from the objective lens and the slide immediately after use to prevent residue buildup.

6. Troubleshooting

Problem	Possible Cause	Solution
No illumination	Power cord disconnected, power switch off, LED bulb failure.	Check power connections, ensure switch is on. Contact support if LED is faulty.
Image blurry or out of focus	Incorrect focus knob used, objective not fully engaged, dirty lens, slide upside down.	Use fine focus for high power. Rotate nosepiece until objective clicks. Clean lenses. Reorient slide.
Dark spots in field of view	Dust on eyepiece, objective, or condenser.	Clean all optical components carefully.
Monitor not displaying image	Monitor power off, video cable loose, E-eyepiece not inserted correctly.	Check monitor power, secure video cable, re-insert E-eyepiece.

7. Specifications

Feature	Detail
Brand	Vabiooth

Feature	Detail
Model	Darkfield Microorganism Model
Magnification Maximum	2500 x
Eyepieces	WF10X, 16X, 25X
Objective Lenses	4x, 10x, 40x(s), 100x(Spring Oil) Achromatic
Condenser	NA 1.25 Abbe condenser with iris diaphragm
Light Source Type	LED
Mechanical Stage	Double-layer with 1.0mm stage divisions
LCD Monitor	7-inch, 360-degree rotatable
E-Eyepiece	5MP
Real Angle of View	30 Degrees
Material	Aluminum
Color	White
Voltage	110 Volts (AC)
Power Source	AC
Item Weight	19.03 pounds
Package Dimensions	18.07 x 14.57 x 9.92 inches

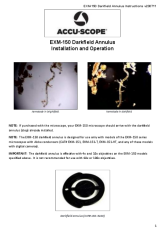
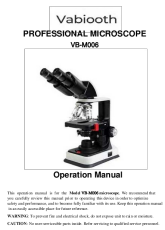
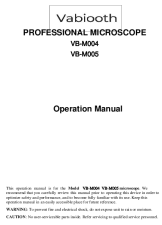
8. Warranty and Support

Vabiooth provides an 18-month manufacturer's warranty from the date of purchase. For any questions, technical support, or warranty claims, please contact our customer care center.

Figure 8.1: Vabiooth Customer Care Contact Information.

- **Customer Care Center (E-mail & Whatsapp):** Vabiooth@outlook.com
- **Phone:** +86 17306342950
- **Operating Hours:** Monday through Friday (EST 9:00-11:00 or 20:00-24:00), excluding public holidays.
- When contacting us, please provide your order number for faster service.
- You can also quickly reach us on WhatsApp by scanning this QR code: WhatsApp Link

Related Documents - Darkfield Microorganism Model

	[ACCU-SCOPE EXM-150 Darkfield Annulus: Installation and Operation Guide] Detailed instructions for installing and operating the ACCU-SCOPE EXM-150 Darkfield Annulus, explaining darkfield illumination principles and usage with EXM-150 series microscopes.
	[Vabiooth VB-M006 Professional Microscope Operation Manual] Comprehensive operation manual for the Vabiooth VB-M006 Professional Microscope, covering setup, operation, maintenance, specifications, and troubleshooting for optimal use and performance.
	[Vabiooth VB-M004 VB-M005 Professional Microscope Operation Manual] Comprehensive operation manual for the Vabiooth VB-M004 and VB-M005 professional microscopes, covering setup, operation, specifications, and troubleshooting.
	[OPTIKA B-500DK Darkfield Microscope Operation Manual] This operation manual provides detailed instructions and technical guidance for the OPTIKA B-500DK and B-500DK-R darkfield microscopes, covering principles of immersion and darkfield microscopy, configuration, troubleshooting, and maintenance.
	[Celestron HD Digital Microscope Imager Quick Set-Up Guide] A quick set-up guide for the Celestron HD Digital Microscope Imager, explaining its features, installation, software usage, and care instructions.
	[Celestron 5MP Digital Microscope Imager Quick Setup Guide] Quick setup guide for the Celestron 5MP Digital Microscope Imager (Model #44422), covering contents, installation, connection, and usage. Includes warranty and FCC information.