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## HAYEAR HY-900B

# HAYEAR HY-900B USB3.0 Digital Microscope Camera Instruction Manual

## 1. INTRODUCTION

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This manual provides essential information for the proper setup, operation, and maintenance of your HAYEAR HY-900B USB3.0 Digital Microscope Camera. This 8-megapixel camera is designed for various applications including industrial vision, visual inspection, and integration with microscopes and astronomical telescopes. It offers high-speed video transmission and compatibility with multiple operating systems.

## 2. PACKAGE CONTENTS

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

- 1 x HAYEAR HY-900B USB3.0 Digital Microscope Camera
- 1 x USB3.0 Cable
- 1 x Software Disk

## 3. PRODUCT OVERVIEW

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The HAYEAR HY-900B is a compact and versatile digital microscope camera. Familiarize yourself with its components:



**Figure 3.1:** Front view of the HAYEAR HY-900B camera, showing the brand and 8MP USB3.0 Camera label.



**Figure 3.2:** Front view of the camera, highlighting the C-mount lens interface and the sensor.



**Figure 3.3:** Top view of the camera, showing the USB 3.0 port for high-speed data transfer.



Figure 3.4: Angled view of the camera with the USB 3.0 cable connected, demonstrating its compact form factor.

## 4. SETUP INSTRUCTIONS

Follow these steps to set up your HAYEAR HY-900B camera:

1. **Connect the Camera:** Connect the HAYEAR HY-900B camera to your computer using the provided USB3.0 cable. Ensure it is connected to a USB3.0 port on your PC or laptop for optimal performance and to prevent low power issues.
2. **Install Software:** Insert the included software disk into your computer's optical drive. Follow the on-screen instructions to install the HAYEAR measurement software. This software is compatible with Windows, Linux, and Mac OS (UVC compatible).
3. **Driver Installation:** The camera supports USB Video Class (UVC) protocols, meaning it is generally plug-and-play and does not require separate driver installation on most modern operating systems (WinXP/Win7/Win10/Win11, Linux, Android, MAC-OS X10.4.8 or later).
4. **Mounting (Optional):** The camera features a standard C-mount. It can be directly attached to compatible monocular zoom lenses or, with a CS ring adapter, to stereo trinocular microscopes, FA machine vision lenses, or other 2D/3D monocular lenses.

## 5. OPERATING THE CAMERA

Once the camera is connected and software is installed, you can begin operation:

1. **Launch Software:** Open the HAYEAR measurement software on your computer. The camera's live feed should appear in the software interface.
2. **Adjust Settings:** The software provides controls for various image parameters, including Exposure, Gamma, Color, Gain, Contrast, and Brightness. Adjust these settings to achieve optimal image quality for your specific application.
3. **Focusing:** If using with a microscope or lens, adjust the focus mechanism of your optical equipment to bring the specimen into sharp view.
4. **Applications:** The HY-900B camera is suitable for a wide range of applications, including detailed visual inspection of circuit boards, biological samples, and other microscopic subjects.

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Video 5.1: Demonstration of the HAYEAR 4K Microscope Camera (HY-900B) in use, showcasing its capabilities for inspecting circuit boards and biological samples under magnification.

## 6. MAINTENANCE

To ensure the longevity and optimal performance of your camera:

- **Cleaning:** Use a soft, dry cloth to clean the camera body. For the lens and sensor, use specialized optical cleaning solutions and cloths to avoid scratches or damage.
- **Storage:** Store the camera in a cool, dry place away from direct sunlight and extreme temperatures.
- **Handling:** Avoid dropping or subjecting the camera to strong impacts.

## 7. TROUBLESHOOTING

If you encounter issues with your HAYEAR HY-900B camera, refer to the following common solutions:

- **Camera Not Detected/Low Power:** Ensure the camera is connected to a USB3.0 port on your PC or laptop. USB2.0 ports may not provide sufficient power or data bandwidth, leading to detection issues or poor performance.
- **No Image/Black Screen:** Verify that the software is correctly installed and launched. Check all cable connections. Ensure the lens cap (if applicable) is removed and any connected microscope or lens is properly configured.
- **Poor Image Quality:** Adjust the focus of your optical equipment. Use the software's image settings (Exposure, Gain, Brightness, Contrast) to optimize the image. Ensure adequate lighting for your specimen.
- **Software Not Responding:** Close and restart the software. If the issue persists, restart your computer.

## 8. SPECIFICATIONS

Technical specifications for the HAYEAR HY-900B USB3.0 Digital Microscope Camera:

Feature	Detail
Model	HY-900B USB3.0 Color CMOS USB camera
Sensor	1/2.5" Color CMOS IMX317
Sensor Size	8.365mm(H) x 6.615mm(V)
Pixel Size	1.62µm(H) x 1.62µm(V)
Spectral Response	400nm~700nm
Resolution	3840x2160; 2560x1440; 1920x1080
Image Format	MJPEG / YUV422
Video Resolution	3840x2160 @30fps; 2560x1440 @30fps; 1920x1080 @30fps; 1280x720 @30fps; 1024x576 @30fps; 640x480 @30fps; 640x360 @30fps
Dynamic Range	dB (Linear) - dB (HDR)
White Balance	Auto/Manual
Image Output	USB3.0, 5Gbit/s
Functions	Exposure, Gamma, Color, Gain, Contrast, Brightness
Protocols	USB Video Class (UVC)
System Support	WinXP/Win7/Win10/Win11; Linux / Android (compatible UVC), MAC-OS X10.4.8 or latest (compatible UVC)
Shooting Modes	Automatic

Feature	Detail
Exposure Control Type	Manual, Automatic
Video Capture Resolution	2160p
Media Type	USB
Water Resistance Level	Not Water Resistant
Video Capture Format	MJPEG
Effective Still Resolution	8294400 Pixels
Viewfinder Type	LCD screen (via connected device)
Compatible Devices	Laptop, Personal Computer
ISO Range	100-3200
Audio Recording	No
Aspect Ratio	16:9
Focus Type	Autofocus or Manual Focus (depending on connected lens)
Autofocus	Yes (depending on connected lens)
Flash Type	Internal (if applicable, typically for illumination)
Manufacturer	HAYEAR
Item Weight	1 Kilogram

## 9. WARRANTY AND SUPPORT

**Warranty:** The HAYEAR HY-900B USB3.0 Digital Microscope Camera comes with a 1-year manufacturer's warranty.

**Support:** For any questions, feedback, or technical assistance, please contact HAYEAR customer support. Your inquiries are welcome.