

ELP ELP-USB4KHDR01-MFV(5-50mm)

ELP 4K USB Webcam with 5-50mm 10X Optical Zoom Lens User Manual

Model: ELP-USB4KHDR01-MFV(5-50mm)

1. INTRODUCTION

This manual provides detailed instructions for the ELP 4K USB Webcam (Model ELP-USB4KHDR01-MFV(5-50mm)) featuring a Sony IMX317 image sensor and a 5-50mm 10X optical varifocal zoom lens. Designed for professional video production, surveillance, industrial vision, and general use, it offers 4K Ultra HD resolution at 30fps. The camera is plug-and-play compatible with various operating systems and applications, ensuring high-quality, clear, and vivid video capture.



Figure 1: ELP 4K USB Webcam with 5-50mm Varifocal Lens

The camera utilizes a **Sony IMX317 image sensor** for superior image quality and low color reproduction deviation, making it suitable for demanding applications such as medical imaging and machine vision. Its compact design and versatile lens make it an ideal solution for various monitoring and recording needs.



Figure 2: Sony IMX317 Sensor Integration

This camera supports two image formats, **MJPEG** and **YUY2**, for high-speed data transmission and high-quality video output. It is designed for ease of use with its plug-and-play functionality, eliminating the need for complex driver installations.

UHD 4K

2160P

FHD 1080P

4K Sony IMX317 ウェブカメラ

-3840x2160解像度制御により、画像がより繊細で鮮やかになります
-このウェブカメラの超クリアな4K8メガピクセルの画像またはビデオを楽しむために、ソフトウェアと画面が4Kをサポートしていることを確認してください

Figure 3: Wide Range of Applications

2. SETUP

2.1 Package Contents

- ELP 4K USB Webcam (ELP-USB4KHDR01-MFV(5-50mm))
- USB Cable
- User Manual (this document)

2.2 System Requirements

- Operating Systems: Windows XP/Vista/7/8/10/11, Linux (with UVC support, kernel 2.6.26 or higher), macOS X 10.4.8 or higher, Android 4.0 or higher (with UVC support).
- USB Port: USB 2.0 or higher.
- Display: 4K compatible display for optimal 4K resolution viewing.
- Software: Video capture or streaming software that supports 4K resolution.

2.3 Connecting the Camera

1. Connect the USB cable to the camera's USB port.
2. Connect the other end of the USB cable to an available USB 2.0 port on your computer or compatible device.
3. The camera is **Plug and Play**, meaning no additional drivers are typically required for most operating systems. Your system should automatically detect and install the necessary components.



WORK WITH MOST VIDEO AND STREAMING APPS



OpenCV



Ubuntu



Facetime



PotPlayer



Skype



Android TV



XBOX ONE

Figure 4: Plug and Play Setup

2.4 Software Compatibility

The ELP 4K USB Webcam is compatible with most video and streaming applications that support UVC (USB Video Class) devices. This includes, but is not limited to, applications like OpenCV, Ubuntu's default camera apps, Facetime, PotPlayer, Skype, Android TV, and Xbox One.



Figure 5: Compatibility with Raspberry Pi

3. OPERATING INSTRUCTIONS

3.1 Adjusting the Varifocal Lens

The 5-50mm varifocal lens allows for manual adjustment of focus, aperture, and zoom to achieve the desired field of view and image clarity. These adjustments are made directly on the lens barrel.

4K UHD 2016Pウェブカメラ

UVCサポートOTGと互換性があります



2160P@30FPS



SONY IMX317



プラグ&プレイ



手動フォーカス

Figure 6: Lens Adjustment Components

- **Zoom (W-T):** Rotate the zoom ring to adjust the magnification level. 'W' typically indicates wide-angle (less zoom), and 'T' indicates telephoto (more zoom).
- **Focus (Near-Far):** Rotate the focus ring to achieve a sharp image. This is a manual focus lens, so precise adjustment is required.
- **Aperture (Open-Close):** Rotate the aperture ring to control the amount of light entering the lens and the depth of field. 'Open' allows more light and shallower depth of field, 'Close' allows less light and greater depth of field.

5-50mm 10X

Optical Zoom USB Camera

Focus, Aperture,
Distance Adjustable



Figure 7: 10X Optical Zoom Demonstration



Figure 8: Variable Zoom Levels

3.2 Achieving 4K Resolution

To fully utilize the camera's 4K (3840x2160) resolution capabilities, ensure that your viewing software and display monitor both support 4K resolution. If your software or display only supports lower resolutions (e.g., 1080P or 720P), the camera output will be scaled down accordingly.



Figure 9: 4K UHD vs. FHD 1080P Resolution

4. MAINTENANCE

4.1 General Care

- Keep the camera in a clean, dry environment away from extreme temperatures and humidity.
- Avoid dropping or subjecting the camera to strong impacts.
- Do not attempt to disassemble the camera or lens, as this may void the warranty and cause damage.

4.2 Cleaning the Lens and Body

- Use a soft, lint-free cloth to gently wipe the camera body.
- For the lens, use a specialized lens cleaning solution and a microfiber cloth. Avoid using abrasive materials or harsh chemicals.
- Use a blower brush to remove dust particles from the lens surface before wiping.

5. TROUBLESHOOTING

5.1 Common Issues and Solutions

Issue	Possible Cause	Solution
No image or video displayed	• Camera not properly connected. • Incorrect USB port used. • Software not recognizing the camera.	• Ensure USB cable is securely connected to both camera and computer. • Try a different USB port. • Verify camera is selected as the video input device in your software settings. • Restart your computer and try again.
Image is blurry or out of focus	Manual focus not adjusted correctly.	Rotate the focus ring on the lens barrel until the image appears sharp.

Issue	Possible Cause	Solution
Image is too dark or too bright	Aperture not adjusted correctly.	Rotate the aperture ring on the lens barrel to control brightness. Adjust software exposure settings if available.
Image quality is not 4K	• Software or display does not support 4K. • Incorrect resolution setting in software.	• Ensure your monitor and software are 4K compatible. • Check your software's video settings and select 3840x2160 resolution.
Color distortion or incorrect colors	Software color settings are misconfigured.	Use your video capture software's settings to adjust color balance, contrast, and gamma values to achieve accurate colors.

6. SPECIFICATIONS

Feature	Specification
Model Name	ELP-USB4KHDR01-MFV(5-50mm)
Image Sensor	1/2.8" Sony IMX317 CMOS
Video Capture Resolution	4K (3840x2160)
Image Capture Speed	30 fps (at 4K)
Lens Type	5-50mm Manual Varifocal CS Lens
Optical Zoom	10X
Focus Function	Manual Focus
Connectivity Technology	USB 2.0
Video Capture Format	MJPEG / YUY2 (YUYV)
Aspect Ratio	16:9
Compatible Devices	WinXP/Vista/7/8/10/11, Linux (UVC), macOS X 10.4.8+, Android 4.0+ (UVC)
Recommended Use	Industrial field, medical equipment, personal photography, animal photography, machine vision, security, PC camera, baby monitoring, video conferencing.
GTIN (UPC)	757350433414
ASIN	B08JSMXL6K

7. WARRANTY AND SUPPORT

7.1 Product Warranty

ELP products typically come with a standard manufacturer's warranty covering defects in materials and workmanship. Please refer to the warranty information provided at the time of purchase or contact the seller for specific warranty terms and duration.

7.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or inquiries regarding your ELP 4K USB Webcam, please contact the seller or manufacturer directly. Provide your product model number (ELP-USB4KHDR01-MFV(5-50mm)) and a detailed description of the issue for efficient support.

ASK A QUESTION ABOUT THIS MANUAL

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