ELP ELP-USB1080P03-H100

ELP 0.0001Lux Starvis USB Camera Module

Model: ELP-USB1080P03-H100

Introduction

Thank you for choosing the ELP 0.0001Lux Starvis USB Camera Module. This compact and versatile camera is designed for various applications requiring high-quality video capture in challenging lighting conditions. Featuring a 1080P resolution, H.264 compression, and a wide-angle lens, it offers excellent performance for embedded systems, surveillance, and general webcam use. This manual provides essential information for proper setup, operation, and maintenance.

Product Features

- **Ultra-Low Light Performance:** 0.0001Lux Starvis technology for clear imaging in extremely dim environments.
- **High Dynamic Range (HDR):** 100dB HDR capability for balanced exposure in varied lighting.
- **Full HD Resolution:** Captures video at 1920x1080P at 30 frames per second (fps).
- **Efficient Compression:** Supports H.264, MJPEG, and YUY2 video formats.
- **Wide Angle Lens:** 100-degree no-distortion lens with an IR filter, offering approximately 117-degree horizontal field of view (HFOV) and 82-degree vertical field of view (VFOV).
- **Image Sensor:** Equipped with a 2MP 1/1.8" SmartSens SC2210 Color CMOS image sensor.
- **Plug & Play (UVC Compliant):** No additional drivers required for most operating systems.
- **Broad Compatibility:** Compatible with Windows XP/7/8/10, Linux, Android, and Mac OS. Works with Raspberry Pi, Ubuntu, OpenCV, and various webcam software.
- **Compact Design:** Mini size and lightweight, suitable for embedded machine vision projects.

Image: The ELP 0.0001Lux Starvis USB Camera Module, showcasing its compact design and lens.

Image: A visual comparison demonstrating the superior low-light performance of the Starvis camera module against a normal camera.

What's in the Box

Upon unpacking, please ensure all the following items are present:

- 1 x 1080P Low Light USB Camera Module
- 1 x 1-meter (3.3ft) USB Cable
- 1 x User Manual

Setup

The ELP USB Camera Module is designed for simple plug-and-play operation. Follow these steps to connect and begin using your camera:

1. **Unpack the Camera:** Carefully remove the camera module and USB cable from its packaging.
2. **Connect the USB Cable:** Insert the smaller end of the provided 1-meter USB cable into the camera module's USB port.
3. **Connect to Host Device:** Plug the standard USB-A end of the cable into an available USB 2.0 port on your computer, laptop, Raspberry Pi, or other compatible device.
4. **Automatic Recognition:** The camera is UVC (USB Video Class) compliant, meaning most operating systems (Windows, Linux, Mac OS, Android) will automatically detect and install the necessary drivers. No manual driver installation is typically required.
5. **Verify Connection:** Once connected, you can open a compatible video application (e.g., Amcap on Windows, Cheese on Linux, Photo Booth on Mac, or custom software for Raspberry Pi) to confirm the camera is recognized and displaying video.

Image: The ELP USB Camera Module connected to a laptop via its USB cable, demonstrating a typical setup.

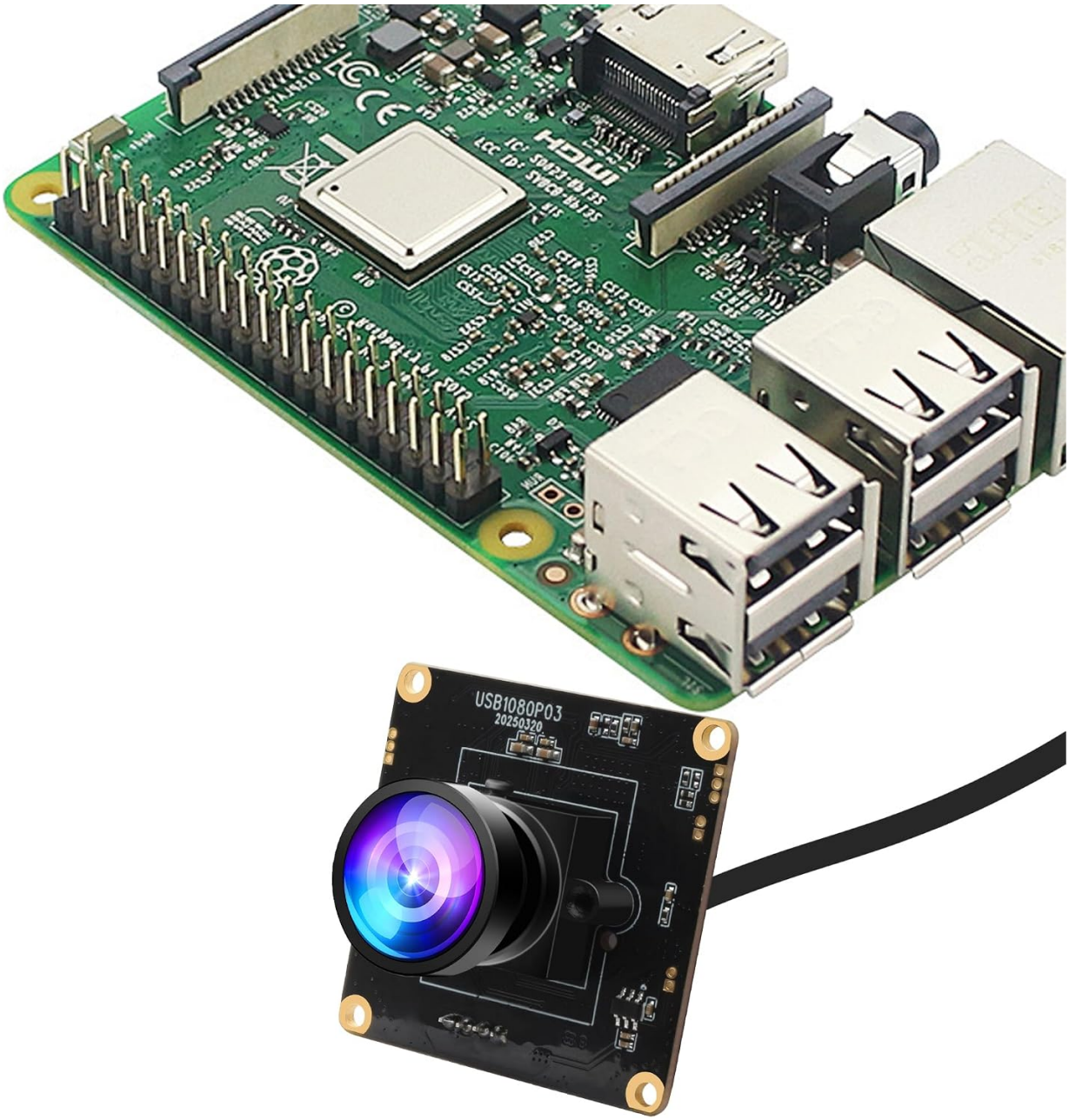

Image: The ELP USB Camera Module connected to a Raspberry Pi board, illustrating its compatibility with single-board computers.

Operating Instructions

After successful setup, you can operate the camera using various software applications.

Basic Operation

- **Software Selection:** Use any UVC-compatible software for video streaming or recording. Popular options include OBS Studio, VLC Media Player, Amcap (Windows), Cheese (Linux), or custom applications for embedded projects.
- **Resolution and Frame Rate:** The camera supports 1080P (1920x1080) at 30fps. Your software should allow you to select this resolution. Lower resolutions like 720P (1280x720) or VGA (640x480) are also supported, often at higher frame rates (e.g., YUY2 30fps@640x480).
- **Video Formats:** The camera outputs H.264, MJPEG, and YUY2. H.264 offers efficient compression for high-quality video at lower bandwidth, while MJPEG provides good quality with less processing overhead. YUY2 is an uncompressed format suitable for specific applications. Select the appropriate format within your software settings.

- **Low Light Performance:** The Starvis sensor excels in low light. Ensure your software is configured to utilize the camera's full capabilities for optimal performance in dim conditions.

Image: Icons representing various compatible operating systems and software platforms, highlighting the camera's wide compatibility.

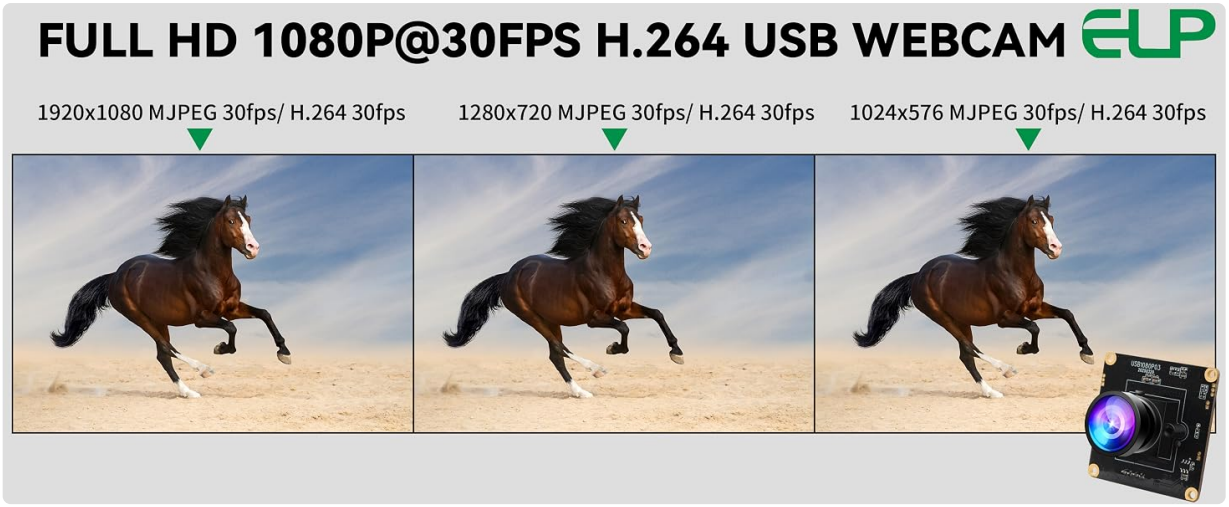

Image: Illustrates the camera's capability for Full HD 1080P video recording at 30 frames per second using H.264 compression.

Maintenance

To ensure the longevity and optimal performance of your ELP USB Camera Module, follow these maintenance guidelines:

- **Cleaning the Lens:** Use a soft, lint-free cloth specifically designed for optical lenses to gently clean the camera lens. Avoid abrasive materials or harsh chemicals, which can scratch or damage the lens coating.
- **Handling:** Handle the camera module by its edges to avoid touching the lens or the circuit board components. Static electricity can damage electronic components.
- **Storage:** When not in use, store the camera in a clean, dry, and dust-free environment. Avoid extreme temperatures and high humidity.
- **Cable Care:** Do not bend or crimp the USB cable excessively. Always grasp the plug, not the cable, when connecting or disconnecting.
- **Environmental Protection:** This is a bare board camera module. If used in an outdoor or harsh environment, it requires an appropriate protective enclosure to shield it from dust, moisture, and physical impact.

Troubleshooting

If you encounter issues with your ELP USB Camera Module, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Camera not detected	Loose USB connection; Faulty USB port; Driver conflict; Incompatible software.	Ensure USB cable is securely connected. Try a different USB port or cable. Restart your computer. Test with a different UVC-compatible application.
No video feed / Black screen	Camera not selected in software; Privacy settings; Low light conditions (unlikely with Starvis, but possible if extremely dark).	Verify the correct camera is selected in your application's settings. Check operating system privacy settings for camera access. Ensure there is some ambient light.
Poor image quality / Blurry video	Dirty lens; Incorrect resolution/format settings; Software issues.	Clean the lens gently. Ensure software is set to 1080P resolution and H.264/MJPEG format. Update or reinstall your video software.
Low frame rate	USB 2.0 bandwidth limitations; High CPU usage; Software settings.	Ensure no other high-bandwidth USB devices are connected. Close unnecessary applications. Check software settings for frame rate limits.
Camera gets warm	Normal operation; Prolonged use.	It is normal for the camera module to generate some heat during operation. Ensure adequate ventilation if enclosed. If it becomes excessively hot, disconnect and contact support.

Specifications

Detailed technical specifications for the ELP 0.0001Lux Starvis USB Camera Module:

- **Model Number:** ELP-USB1080P03-H100
- **Image Sensor:** 2MP 1/1.8" SmartSens SC2210 Color CMOS
- **Resolution:** 1080P (1920x1080) Max.
- **Low Light Sensitivity:** 0.0001 Lux
- **Dynamic Range:** HDR 100dB
- **Lens:** 100-degree wide angle, no distortion, with IR filter
- **Field of View (Approx.):** HFOV 117 degrees, VFOV 82 degrees
- **Frame Rates:**
  - H.264: 30fps@1920x1080
  - MJPEG: 30fps@1920x1080
  - YUY2: 30fps@640x480
- **Connectivity:** USB 2.0 (UVC compliant)
- **Operating Systems:** Windows XP/7/8/10, Linux, Android, Mac OS, Raspberry Pi
- **Dimensions:** 1.49 x 1.49 x 0.88 inches (38 x 38 x 22.35 mm)
- **Item Weight:** 3.17 ounces (approx. 90 grams)

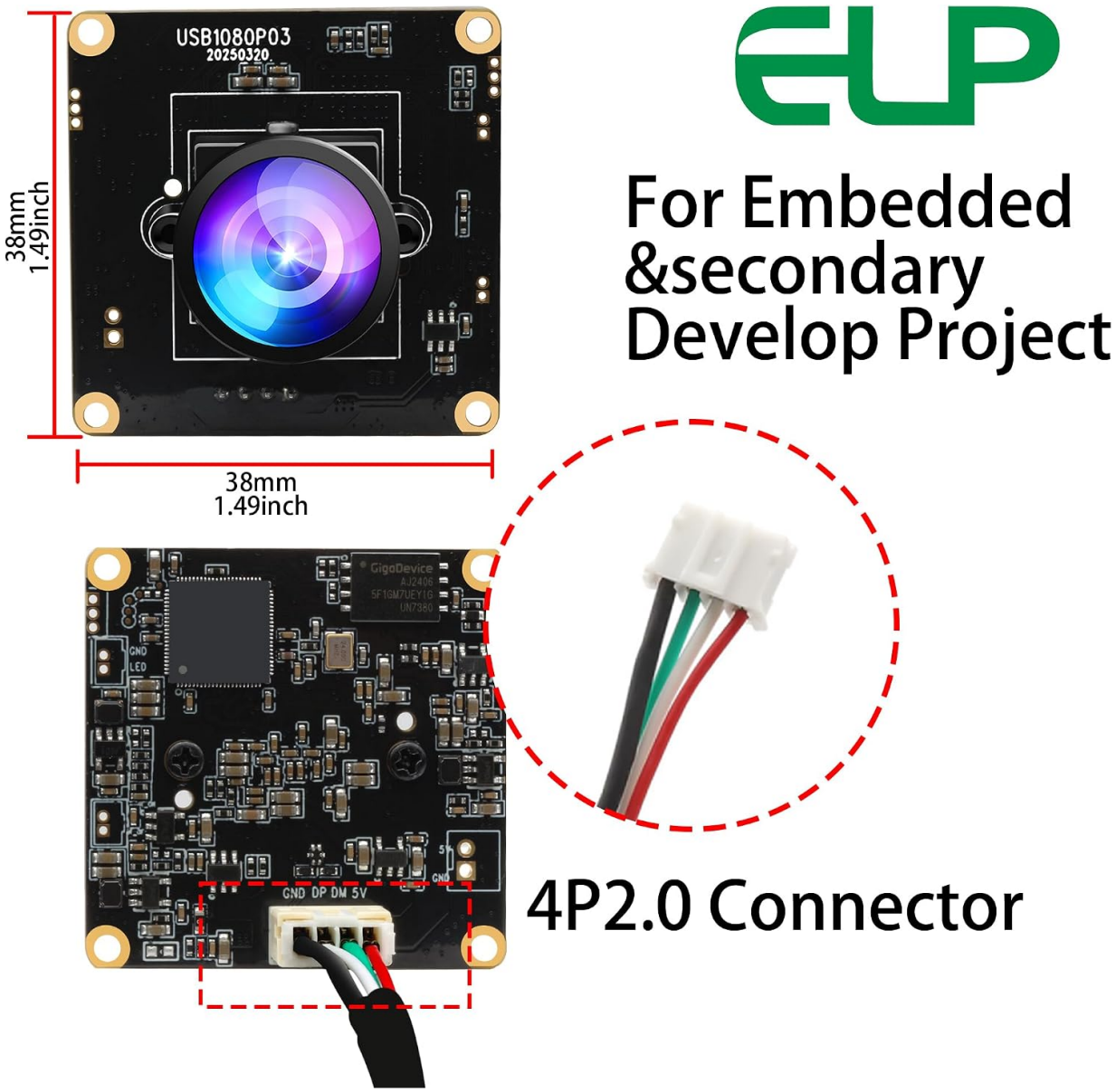

Image: Detailed view of the camera module, showing its dimensions (38mm x 38mm) and the 4P2.0 connector for the USB cable.

Warranty and Support

ELP products are manufactured to high-quality standards. For any technical assistance, warranty claims, or product inquiries, please contact ELP customer support through the retailer where you purchased the product or visit the official ELP website for contact information.
Please retain your proof of purchase for warranty purposes.