SVPRO 16MP-H120 M12

SVPRO 16MP USB Camera (Model 16MP-H120 M12) Instruction Manual

Model: 16MP-H120 M12

1. Introduction

The SVPRO 16MP USB Camera is a high-resolution, wide-angle webcam designed for various applications including machine vision, industrial devices, and 3D printing. It features an IMX298 sensor, providing sharp images and accurate color reproduction with a resolution of 4656 x 3496 pixels. The 120-degree wide-angle M12 lens offers a distortion-free field of view, making it suitable for diverse environments.

This camera is a plug-and-play device, compatible with multiple operating systems, and requires no additional drivers. Its compact design allows for installation in narrow spaces, enhancing its versatility.

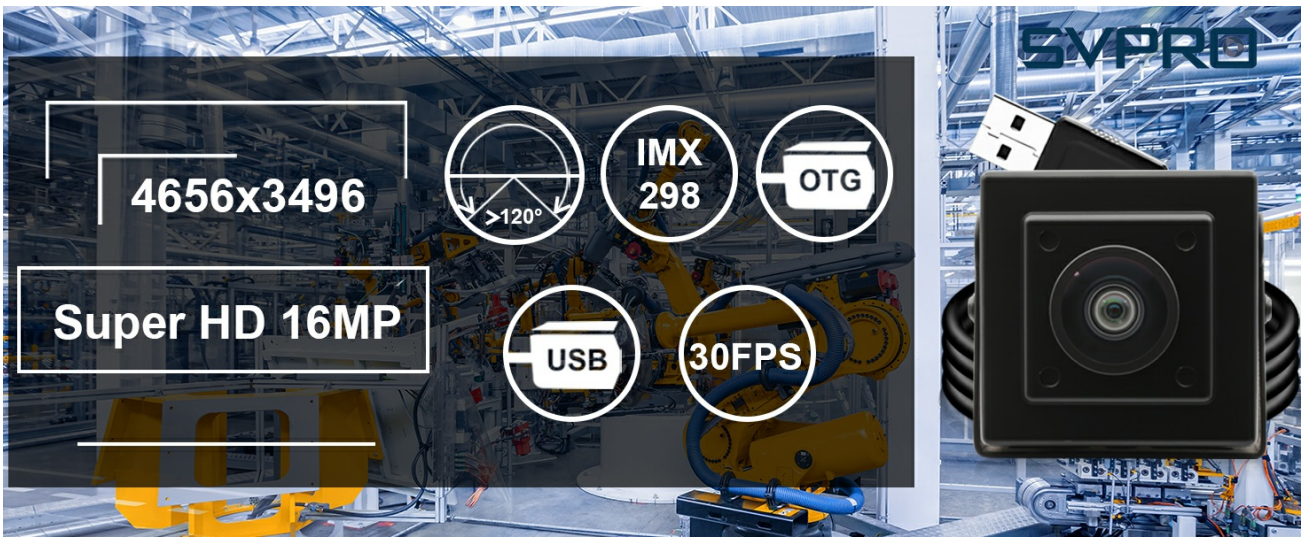

Image 1.1: The SVPRO 16MP USB Camera, showcasing its Super HD 16MP resolution, 120-degree wide-angle capability, IMX298 sensor, OTG support, USB connectivity, and 30 frames per second performance.

2. Package Contents

Please verify that all items are present in the package:

- SVPRO 16MP USB Camera body
- 3-meter USB cable

3. Safety Information

To ensure safe operation and prolong the life of your SVPRO USB Camera, please observe the following guidelines:

- Do not expose the camera to extreme temperatures, humidity, or direct sunlight.
- Avoid dropping or subjecting the camera to strong impacts.
- Do not attempt to disassemble or modify the camera. This will void the warranty.
- Keep the camera away from strong magnetic fields.
- Use only the provided USB cable or a compatible, high-quality USB 2.0 cable.

4. Setup

4.1 Connecting the Camera

The SVPRO 16MP USB Camera is designed for plug-and-play functionality. Simply connect the camera to your computer, laptop, or compatible device using the provided USB cable.

1. Locate an available USB 2.0 port on your device.
2. Connect the USB-A end of the cable to your device's USB port.
3. Connect the other end of the cable to the camera's USB port.
4. The camera should be automatically recognized by your operating system. No additional drivers are typically required.

Image 4.1: The SVPRO USB camera connected to a laptop, demonstrating its simple plug-and-play setup.

4.2 System Compatibility

The camera supports a wide range of operating systems:

- Windows (XP SP2/7/8/10 or above)
- Linux (2.6.24 or above)
- Mac OS (Version 10.6 or above)
- Android (Version 5 or above)

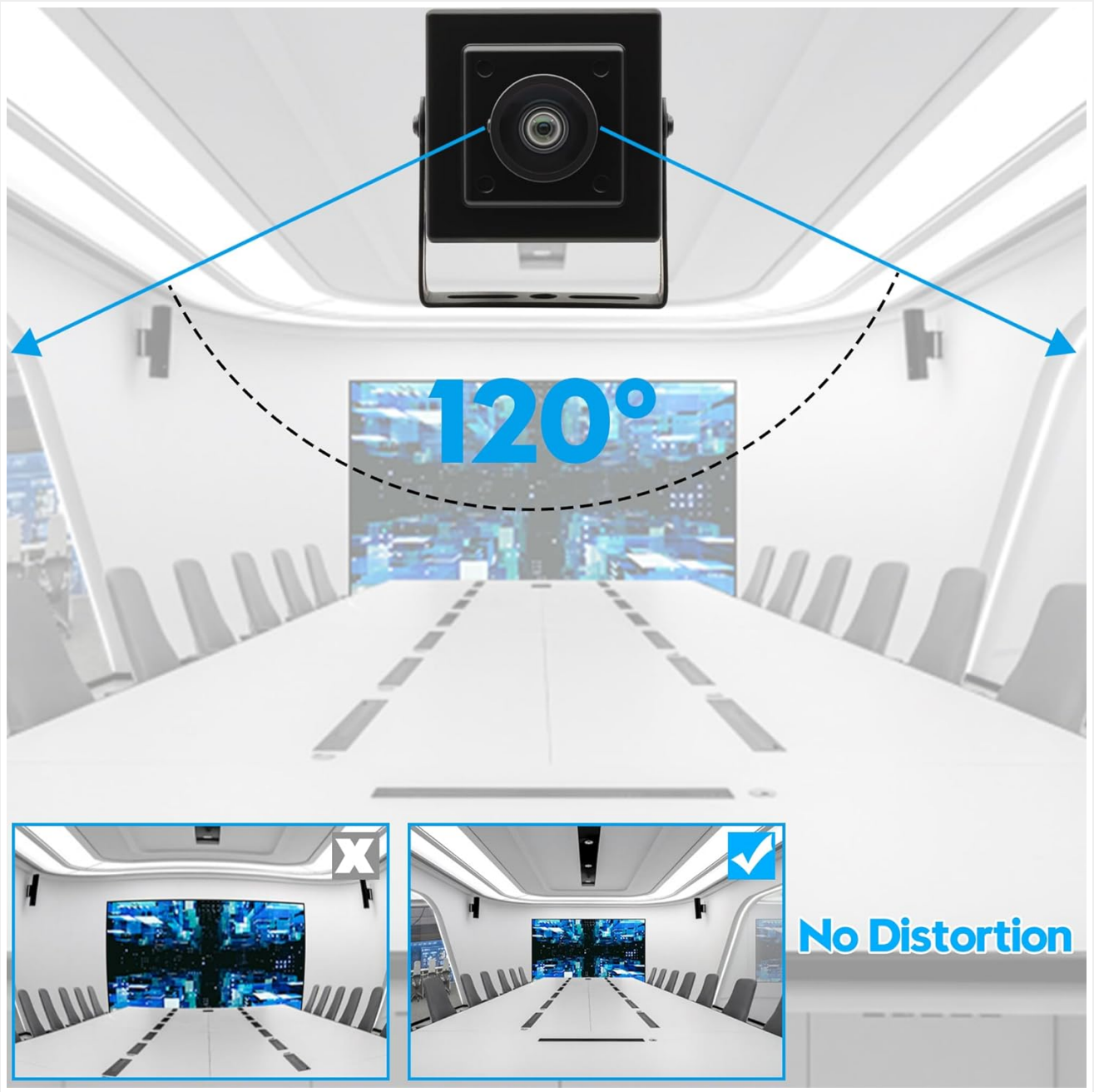

Image 4.2: Visual representation of the SVPRO USB camera's broad compatibility with various operating systems and support for USB 2.0 and OTG.

5. Operating Instructions

5.1 Using with Software

Once connected, the camera can be used with various video capture and streaming software. It is compatible with general software including:

- OPENCV
- Blue Iris
- ContaCam
- Yawcam
- iSpy
- Motion Eye OS
- AMCAP

- Webcam Viewer
- IP Camera Viewer
- ZoneMinder
- V4L2
- VLC
- Photo Booth
- Facetime
- Zoom
- Quick Time
- OBS
- GoToMeeting

Refer to your chosen software's documentation for specific instructions on selecting and configuring the SVPRO USB Camera.

Image 5.1: The SVPRO USB camera connected to a Raspberry Pi, illustrating its use with embedded systems.

5.2 Adjusting Settings

Most compatible software will allow you to adjust camera settings such as exposure, brightness, contrast, backlight

compensation, saturation, hue, gamma, and white balance. These settings can be modified to optimize image quality for your specific environment and application.

5.3 Resolutions and Frame Rates

The camera supports multiple resolutions and frame rates in MJPG format:

- 10fps@4656x3496
- 10fps@3840x2160
- 10fps@3264x2448
- 10fps@2592x1944
- 30fps@1920x1080
- 30fps@1280x720

Image 5.2: A wide-angle view of a meeting room, demonstrating the 120-degree undistorted field of view provided by the SVPRO camera.

Image 5.3: A visual comparison highlighting the distortion-free wide-angle capability of the SVPRO camera compared to other typical wide-angle lenses.

6. Applications

The compact size and high performance of the SVPRO 16MP USB Camera make it suitable for a variety of applications:

- **Machine Vision:** For automated inspection and analysis in industrial settings.
- **Industrial Devices:** Integration into various industrial equipment for monitoring and control.
- **Video Surveillance Systems:** For security and monitoring in diverse environments.
- **3D Scanners:** Capturing detailed images for 3D modeling and reconstruction.
- **3D Printers:** Monitoring print progress and detecting issues.
- **Live-Streaming:** High-quality video input for online broadcasts.
- **Embedded Projects:** Easy integration into custom electronic projects like Raspberry Pi.

Image 6.1: Examples of wide applications for the SVPRO USB camera, including live-streaming, 3D printing, industrial measurement, and security monitoring.

Image 6.2: Dimensions of the SVPRO 16MP USB Camera, illustrating its compact form factor suitable for various installations.

7. Maintenance

Proper maintenance ensures the longevity and optimal performance of your camera:

- **Cleaning the Lens:** Use a soft, lint-free cloth specifically designed for optical lenses. Do not use abrasive cleaners or solvents.
- **Cleaning the Body:** Wipe the camera body with a dry, soft cloth. If necessary, a slightly damp cloth can be used, but ensure no moisture enters the camera.
- **Storage:** When not in use, store the camera in a clean, dry place, away from dust and direct sunlight.

8. Troubleshooting

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

8.1 Camera Not Detected

- Ensure the USB cable is securely connected to both the camera and the computer.
- Try connecting the camera to a different USB port on your device.
- Test the camera on another computer or device to rule out a system-specific issue.
- Restart your computer or device.

8.2 Dim Image or Poor Quality

- Ensure adequate lighting in the environment where the camera is used.
- Adjust brightness, contrast, and exposure settings within your video software.
- Clean the camera lens for any smudges or dust.
- Verify that the software is set to the desired resolution and not a lower quality setting.

8.3 Low Frame Rate

- Ensure your computer's USB port is functioning correctly and is not overloaded with other devices.
- Close other applications that might be consuming significant system resources.
- Check if your software settings are configured for the maximum supported frame rate at your chosen resolution. Note that higher resolutions (e.g., 4656x3496) inherently have lower frame rates (10fps).
- Ensure your system meets the minimum requirements for processing high-resolution video streams.

9. Specifications

Feature	Specification
Model Number	Svpro-USB16MP01-SH120
Sensor	IMX298 CMOS
Resolution	16 Megapixels (4656 x 3496)
Lens Type	120° Wide Angle M12, Distortion-Free
Maximum Aperture	f/1.2
Video Capture Resolution	4656x3496p, 3840x2160p, 3264x2448p, 2592x1944p, 1920x1080p, 1280x720p
Video Capture Format	MJPEG
Frame Rate (MJPG)	10fps@4656x3496; 30fps@1920x1080/1280x720
Connectivity	USB 2.0 (Plug & Play, OTG Support)
Operating System Support	Windows, Linux, Mac OS, Android
Product Dimensions	0.87 x 1.65 x 1.57 inches (22 x 42 x 40 mm)
Item Weight	3.52 ounces

10. Warranty and Support

SVPRO products are manufactured to high-quality standards. For specific warranty details and duration, please refer to the warranty card included with your purchase or visit the official SVPRO website. If you require technical assistance or have questions not covered in this manual, please contact SVPRO customer support through the retailer where the product was purchased or via the contact information provided on the official SVPRO website.