Arducam 64MP Hawkeye

Arducam 64MP Hawkeye Ultra High-Resolution Autofocus Camera Module for Raspberry Pi User Manual

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your Arducam 64MP Hawkeye Ultra High-Resolution Autofocus Camera Module. This camera module is designed for use with various Raspberry Pi boards, offering high-resolution imaging capabilities and autofocus functionality.
Key Features:

- 64MP ultra-high resolution (9152 x 6944) for still images.
- Autofocus lens with up to 10x digital zoom.
- Compatible with Raspberry Pi 5/4B/3B+/3B/2B/A+/Zero/Zero W/Zero WH.
- MIPI CSI-2 interface.
- Supports manual focus control via software.

2. Package Contents

Please verify that all items listed below are included in your package:

- 1 x 64MP-AF Camera Board
- 1 x 15cm 15pin FPC Cable
- 1 x 15cm 15pin to 22pin FPC Cable

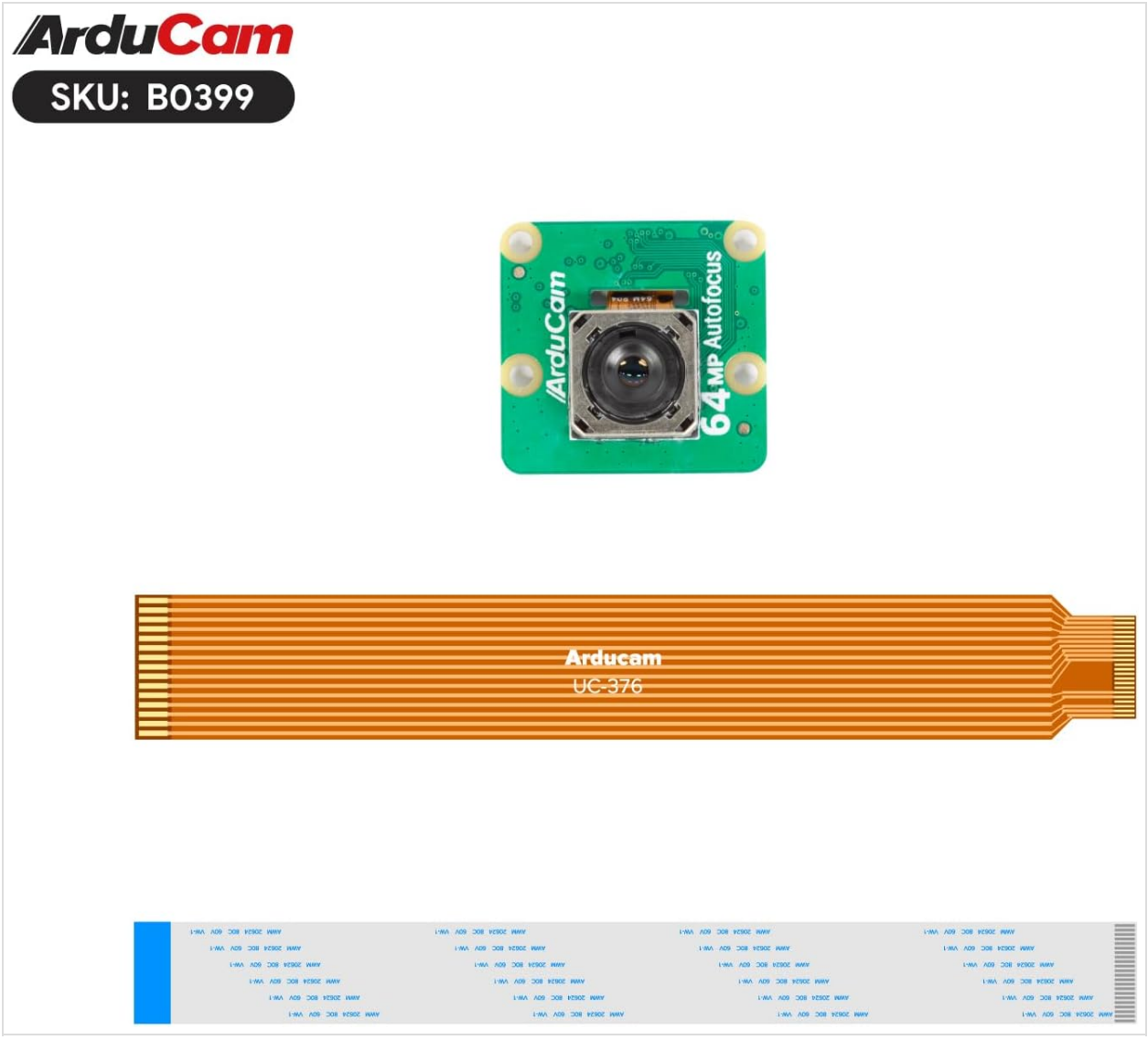


Image: The Arducam 64MP Hawkeye camera module shown with both the 15cm 15pin FPC cable and the 15cm 15pin to 22pin FPC cable, which are included in the package.

3. Setup

Follow these steps to connect and prepare your Arducam 64MP Hawkeye camera module with your Raspberry Pi.

3.1 Hardware Connection

1. Ensure your Raspberry Pi is powered off and disconnected from any power source.
2. Locate the MIPI CSI-2 camera interface on your Raspberry Pi board. This is typically a long, narrow connector.
3. Gently pull up the plastic clip on the camera connector.
4. Insert the FPC (Flexible Printed Circuit) cable from the camera module into the connector. Ensure the silver contacts on the FPC cable face the correct direction (towards the HDMI port on most Raspberry Pi models). Use the appropriate FPC cable (15pin or 22pin) based on your Raspberry Pi model.
5. Push the plastic clip back down to secure the FPC cable.
6. Connect the other end of the FPC cable to the Arducam 64MP Hawkeye camera module.

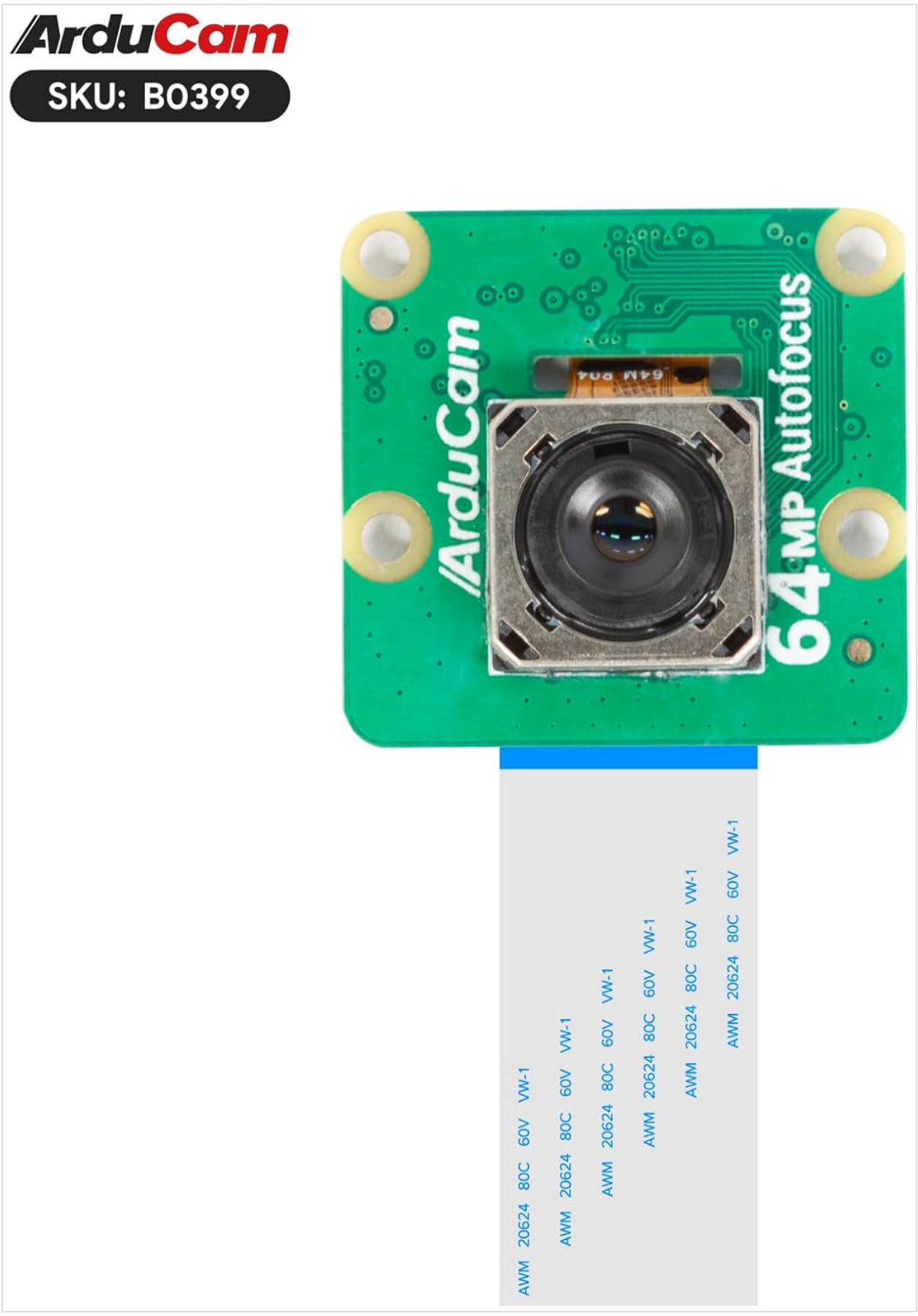


Image: The Arducam 64MP Hawkeye camera module with its flexible printed circuit (FPC) cable, ready for connection to a Raspberry Pi board.

Image: A visual comparison showing the Arducam 64MP Hawkeye camera module connected to both a Raspberry Pi 4B (left) and a Raspberry Pi 5 (right), illustrating compatibility.

3.2 Software Configuration

The Arducam 64MP Hawkeye camera module requires specific software configuration on your Raspberry Pi. It is compatible with Raspberry Pi OS (Debian Bullseye) and utilizes the libcamera application framework.

1. Power on your Raspberry Pi after connecting the camera module.
2. Ensure your Raspberry Pi OS is updated to the latest version of Bullseye.
3. Install necessary camera drivers and libraries. Refer to the official Arducam documentation for the most up-to-date installation guide. A quick guide for Raspberry Pi is often available at bit.ly/64MP-Guide-for-Raspberry-Pi.
4. After installation, you can test the camera using libcamera commands or the provided pre-compiled program for easy access.

4. Operating Instructions

Once the camera module is successfully set up, you can begin capturing images and video.

4.1 Capturing Images and Video

Use the libcamera tools or Arducam's provided software to capture high-resolution images and video. The camera supports a maximum still image resolution of 9152 x 6944 pixels and video capture up to 1080p.

4.2 Autofocus and Manual Focus

The 64MP Hawkeye module features a built-in autofocus motor. This allows for quick and automatic focusing. Additionally, manual focus can be controlled through software commands, providing precise control over the focal point.

- **Autofocus:** The camera will automatically adjust its focus to achieve a clear image.
- **Manual Focus:** Specific software commands can be used to set the focus distance manually. Refer to the Arducam autofocus guide (e.g., bit.ly/16MP-64MP-Autofocus-Guide) for detailed instructions.

4.3 Digital Zoom

The camera supports up to 10x digital zoom, which can be controlled via software. Digital zoom magnifies the image electronically, which may affect image quality at higher zoom levels.

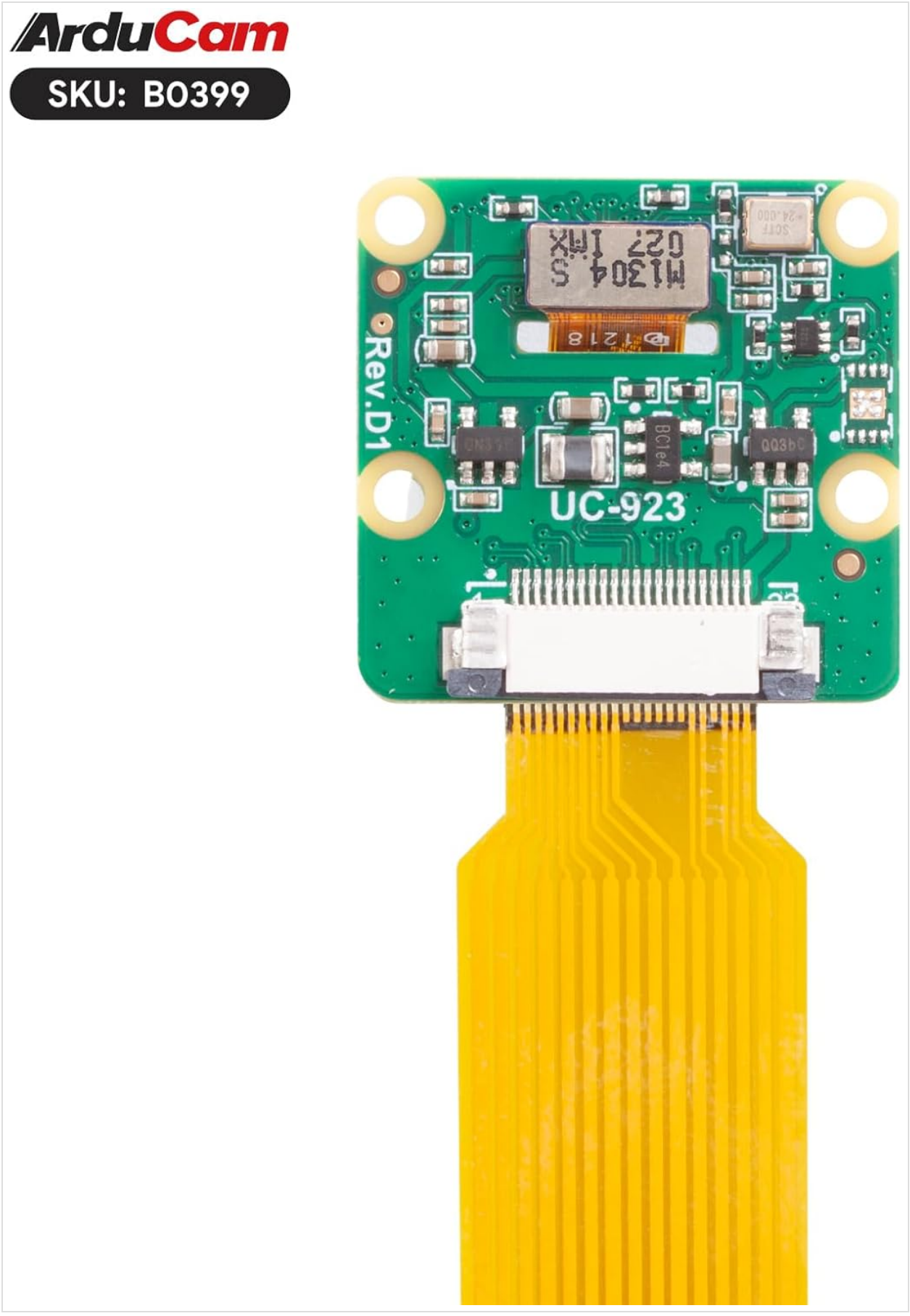


Image: A collage showcasing various images captured using the Arducam 64MP Hawkeye camera module, demonstrating its high-resolution capabilities in different environments.

5. Maintenance

Proper care and maintenance will ensure the longevity and optimal performance of your camera module.

- Keep the camera lens clean and free from dust and fingerprints. Use a soft, lint-free cloth specifically designed for optics.
- Avoid exposing the module to extreme temperatures, humidity, or direct sunlight for extended periods.
- Handle the FPC cable and connectors with care to prevent damage.
- Store the module in a dry, dust-free environment when not in use.

6. Troubleshooting

If you encounter issues with your Arducam 64MP Hawkeye camera module, refer to the following common troubleshooting steps:

- **Camera Not Detected:**
  - Ensure the FPC cable is correctly inserted and securely latched on both the camera module and the Raspberry Pi. Verify the cable orientation.
  - Confirm that the Raspberry Pi is running a compatible operating system (e.g., Raspberry Pi OS Bullseye) and that camera support is enabled in the configuration.
  - Check for any loose connections or damage to the FPC cable.
- **Poor Image Quality:**
  - Clean the camera lens with a suitable optical cleaning cloth.
  - Verify that the camera is properly focused. If autofocus is not performing as expected, try manual focus adjustments.
  - Ensure adequate lighting in your environment.
- **Software Compatibility Issues:**
  - Some users have reported compatibility challenges with newer Raspberry Pi OS versions (e.g., Bookworm) and libcamera. Always refer to the latest official Arducam documentation and community forums for updated drivers and solutions.
  - Ensure all necessary software packages for camera operation are installed and up-to-date.

For further assistance, please contact Arducam technical support.

7. Specifications

Detailed technical specifications for the Arducam 64MP Hawkeye Ultra High-Resolution Autofocus Camera Module:

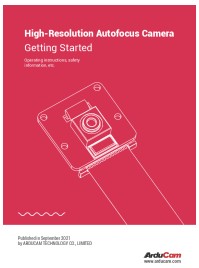
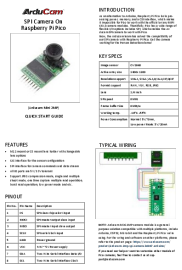
Specification	Value
Brand	Arducam
Model Name	64MP Hawkeye Ultra High-Resolution Autofocus Camera Module
Item Model Number	64MP Hawkeye
Photo Sensor Technology	CMOS
Max Screen Resolution	1080p Full HD
Video Capture Resolution	1080p

Specification	Value
Video Capture Format	MP4
Maximum Focal Length	5.1 Millimeters
Maximum Aperture	1.8 Millimeters
Connectivity Technology	MIPI CSI-2
Operating System Compatibility	Raspberry Pi OS (Debian Bullseye)
Item Weight	0.317 ounces
Package Dimensions	2.28 x 1.97 x 1.06 inches
Manufacturer	Arducam

8. Warranty and Support

Arducam provides technical support for its products. If you encounter any issues or require assistance with your 64MP Hawkeye camera module, please contact Arducam directly through their official support channels. For more information and resources, visit the Arducam Store or their official website.

Related Documents - 64MP Hawkeye

	Arducam High-Resolution Autofocus Camera: Getting Started Guide A comprehensive guide to installing and operating the Arducam High-Resolution Autofocus Camera, including safety instructions and compatibility information with Raspberry Pi.
	Arducam 12MP IMX477 Motorized Focus Camera for Raspberry Pi - B0272 High-quality 12MP Arducam camera module with Sony IMX477 sensor and motorized focus for Raspberry Pi. Features M12 lens mount, detailed specifications, connection instructions, and software setup for remote focus control.
	Arducam Mini 2MP SPI Camera for Raspberry Pi Pico Quick Start Guide A quick start guide for the Arducam Mini 2MP SPI camera module, detailing its features, specifications, pinout, and setup instructions for use with the Raspberry Pi Pico.

	[ArduCAM-Mini-5MP-Plus OV5642 Camera Module User Guide] User guide for the ArduCAM-Mini-5MP-Plus OV5642 Camera Module, detailing its features, specifications, pin definitions, functions, and mechanical dimensions. This 5MP SPI camera module is compatible with various platforms like Arduino and Raspberry Pi.
	[ArduCam MEGA SPI Camera Getting Started Guide] A comprehensive guide to getting started with the ArduCam MEGA SPI Camera, detailing connection, setup, and operation with Arduino microcontrollers and other platforms.
	[Arducam CSI-to-HDMI Adapter Kit for Raspberry Pi Cameras: Installation and Usage Guide] A comprehensive guide to installing and using the Arducam CSI-to-HDMI Adapter Kit with Raspberry Pi cameras, covering setup, compatibility, and safety precautions.

Documents - Arducam – 64MP Hawkeye

[pdf] User Manual Quick Start Guide Installation Guide Instructions

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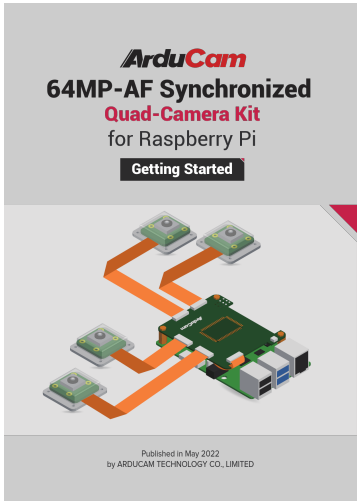
64-Megapixel Autofocus Camera for Raspberry Pi Getting Started Operating instructions, safety information, etc. Published in April 2022 by ARDUCAM TECHNOLOGY CO., LIMITED ./ / * - *.0- Cap Ribbon Cable M1.8 Screw 64MP Pi Hawk-eye Bottom Panel To fit a camera board 64MP Autofocus Camera... lang:en score:42 filesize: 24.41 M page_count: 6 document date: 2023-03-21



[pdf] Quick Start Guide

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64MP-AF Synchronized Quad-Camera Kit for Raspberry Pi Getting Started Published in May 2022 by ARDUCAM TECHNOLOGY CO., LIMITED Installation Packing List 3 x Screw 3 x Spacer 3 x Nut 4 x 64MP Autofocus Camera Module Exclusive Version Arducam UC-440 1 x Flex Cable For Raspberry Pi 1 x Quad-...

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