

# **ArduCam**



## **Datasheet**

5MP AR0521 Monochrome USB 3.0 Camera Module  
**B0509(C)**

## CONTENT

1. Overview
2. Disclaimer
3. Technical Parameters
4. Camera Dimension Diagrams
5. Camera Parameters Interface
6. Operating Condition
7. Contact Us

Version	Compile	Auditing	Authorize	DATE
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## 1. Overview

The Arducam USB 3.0 includes a diverse range of camera modules, each tailored to specific use cases and requirements. This datasheet will detail the specifications and features of each individual product for user reference, allowing you to make informed decisions about which camera module best suits your project.

## 2. Disclaimer

While we have made every effort to ensure the accuracy and completeness of the information presented in this datasheet, Arducam reserves the right to make changes to product specifications, features, and documentation without notice. All information provided in this datasheet is subject to change and should be considered for reference purposes only.

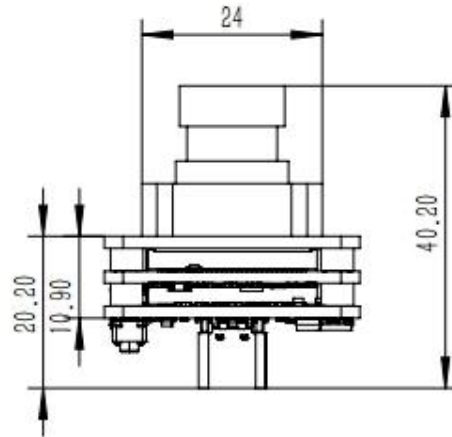
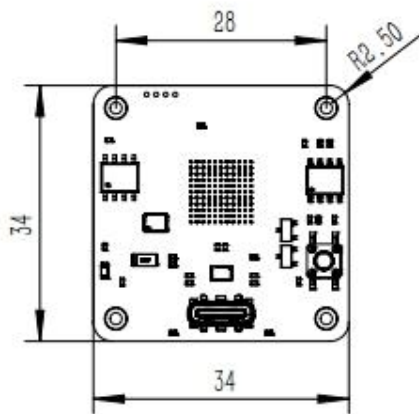
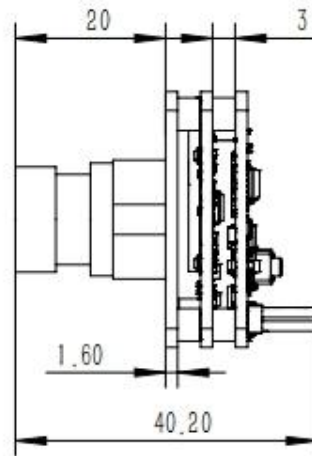
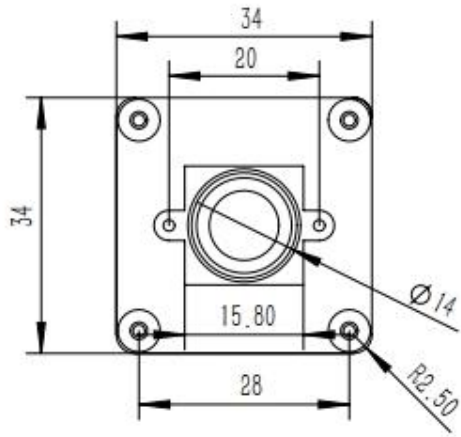
## 3. Technical Parameters

Image Sensor	
Sensor	AR0521
Resolution	5MP
Chroma	Mono
Shutter Type	Rolling Shutter
Optical Format	1/2.5"
Output Format	YUY2
Pixel Size	2.2 $\mu$ m x 2.2 $\mu$ m
Sensor Active Area	2592(H) $\times$ 1944(V)
Frame rate (USB 3.0)	2592x1944@30fps, 1920x1080@60fps
Frame rate (USB 2.0)	1920x1080@10fps
Lens	
Focus Type	Manual Focus
FOV	95 $^{\circ}$ (D) $\times$ 81 $^{\circ}$ (H) $\times$ 65 $^{\circ}$ (V)
Lens Mount	M12 (S-mount)
F.NO	F3.0
E.F.L	3.6mm
IR Sensitivity	No IR-cut filter, sensitive to IR
Default Focus Range	1m- $\infty$
USB Interface	
Interface	USB 3.2 Gen 1 device, backward compatible with USB 2.0 hosts
Connector	Type-C reversible interface connector

UVC Compliant	No additional drivers required
<b>Electrical and Mechanical</b>	
Operating Voltage	DC 5V +/- 5%
Operating Temp.	32°F-158°F (0°C to 70°C)
Power Requirements	Max: 1.6W, Min: 0.9W
Camera Board Size	34×34 mm
<b>Functionality and Compatibility</b>	
Supported OS	Windows, Linux
Recommend Sample Application	PotPlayer for Windows, qv4l2 for Linux
UVC Controls	Brightness, Contrast, Saturation, White Balance (Auto/Manual), Gain, Exposure (Manual/Auto)

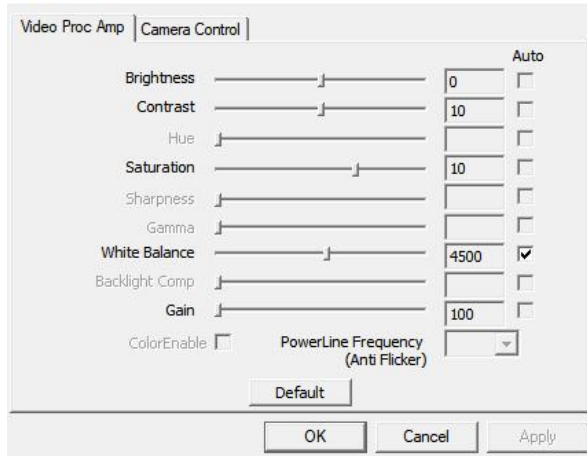
### 4. Camera Dimension Diagrams

Unit: mm

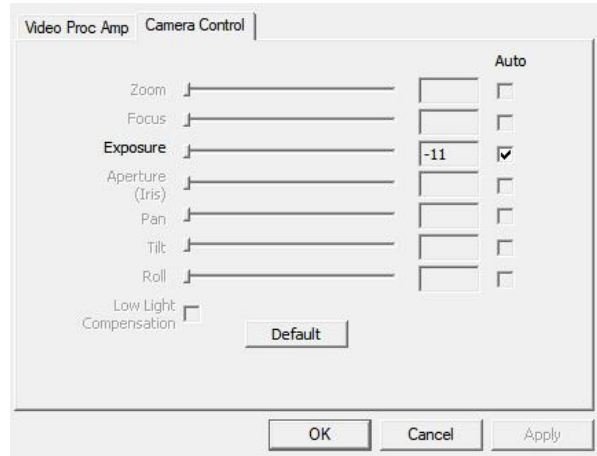


## 5. Camera Parameters Interface

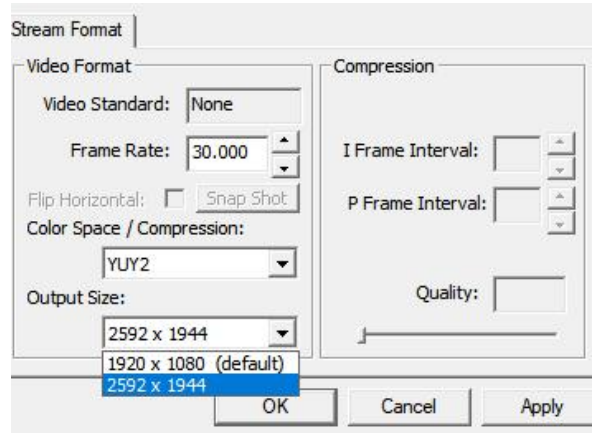
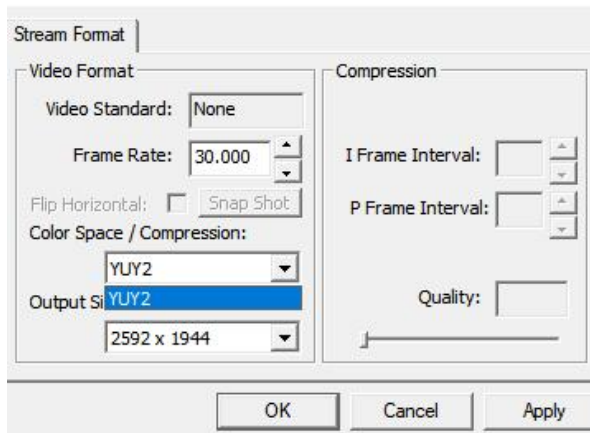
### - Video Proc Amp



### - Camera Control



### - Video Capture Pin



## 6. Operating Condition

### 6.1 YUY2 with USB 3.0

The following table lists the power consumption of the B0509(C) YUY2 format with USB 3.0 devices.

Resolution	Max Frame Rate (fps)	Supply Voltage (V)	Typical Current (mA)	Power Consumption (W)
2592x1944	30	5	320	1.60
1920x1080	60	5	304	1.52
Power at Idle Condition	/	5	94	0.47

### 6.2 YUY2 with USB 2.0

The following table lists the power consumption of the B0509(C) YUY2 format with USB 2.0 devices.

Resolution	Max Frame Rate (fps)	Supply Voltage (V)	Typical Current (mA)	Power Consumption (W)
1920x1080	10	5	186	0.93
Power at Idle Condition	/	5	102	0.51

## 7. Contact Us

For any product-related questions, please feel free to contact us:

- Official website: [www.arducam.com](http://www.arducam.com)
- Contact form: <https://www.arducam.com/contact-arducam/>
- Tel: +1(319)471-7640