

ArduCam



Datasheet

5MP AR0521 Color USB 3.0 Camera Module
B0510(C)

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| Version | Compile | Auditing | Authorize | DATE |
|---------|---------|----------|-----------|-----------|
| V1.0 | Bin L | Kai Z | Lee J | 11.4.2024 |

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.

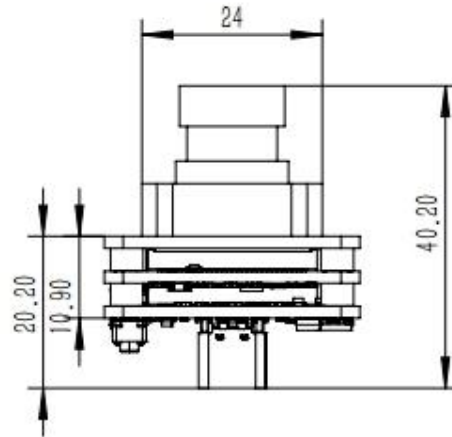
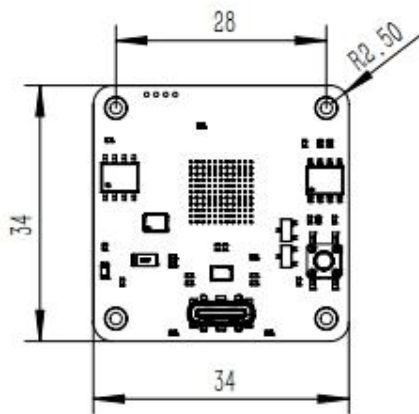
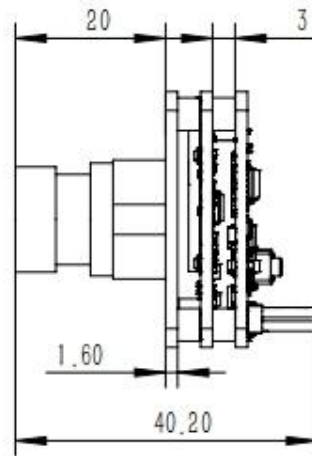
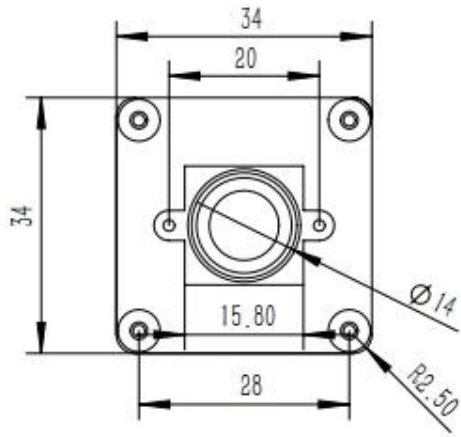
3. Technical Parameters

| Image Sensor | |
|----------------------|---|
| Sensor | AR0521 |
| Resolution | 5MP |
| Chroma | Color |
| Shutter Type | Rolling Shutter |
| Optical Format | 1/2.5" |
| Output Format | YUY2 |
| Pixel Size | 2.2 μ m x 2.2 μ 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 | Integral IR-cut filter, visible light only |
| Default Focus Range | 1m- ∞ |
| 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 |
| Electrical and Mechanical | |
| 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 |
| Functionality and Compatibility | |
| 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) |

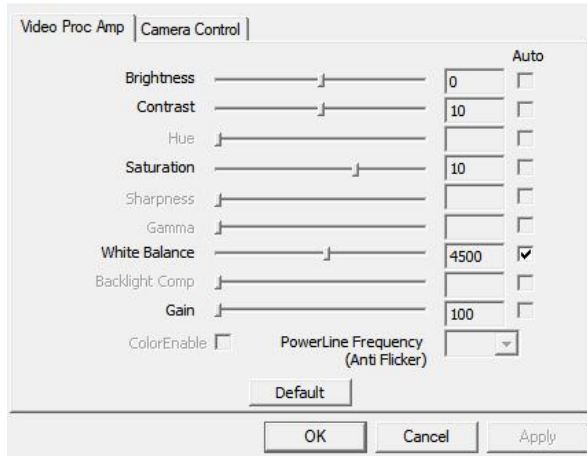
4. Camera Dimension Diagrams

Unit: mm

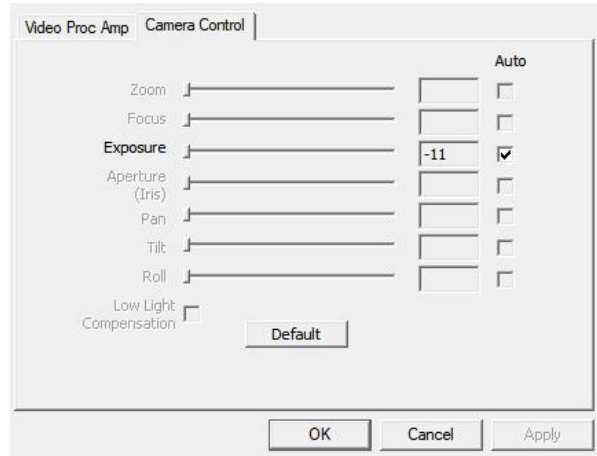


5. Camera Parameters Interface

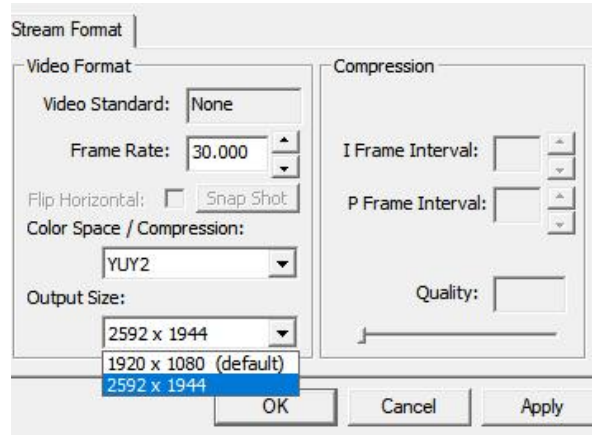
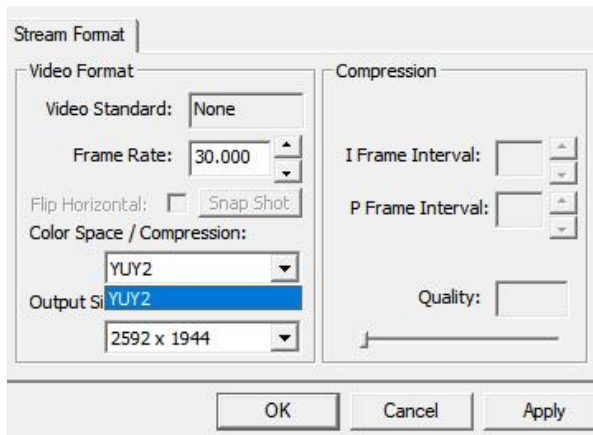
- Video Proc Amp



- Camera Control



- Video Capture Pin



6. Operating Condition

6.1 YUY2 with USB 3.0

The following table lists the power consumption of the B0510(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 | 338 | 1.69 |
| 1920x1080 | 60 | 5 | 326 | 1.63 |
| Power at Idle Condition | / | 5 | 96 | 0.48 |

6.2 YUY2 with USB 2.0

The following table lists the power consumption of the B0510(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 | 188 | 0.94 |
| Power at Idle Condition | / | 5 | 108 | 0.54 |

7. Contact Us

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

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