

ArduCam



Datasheet

Arducam USB3 UVC AI Camera Module, powered by IMX500
B0566

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Version	Compile	Auditing	Authorize	DATE
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1. Overview

1.1 Product Description

Arducam's embedded vision expertise transforms the IMX500 into a universal AI camera series, with its AI Model Zoo/AI Model Converter extending beyond Sony AITRIOS™ templates.

By processing data directly on-device, Edge AI delivers instantaneous responses, guarantees privacy, and operates flawlessly even in zero-connectivity environments — redefining reliability for critical applications.

The IMX500 integrates pixel sensing and AI computation into a single chip, bypassing traditional server dependencies to achieve unprecedented efficiency in vision AI solutions.

1.2 Scope

The scope of this spec, includes

- (1) SONY IMX500 Image Sensor
- (2) Arducam IMX500 USB3 UVC
- (3) Lens Specifications
- (4) Electrical and Mechanical Parameters

In this scope, it does not include

- (1) Reliability-Module Level
- (2) Schematic

Above optional items can be designed by customer demand.

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.

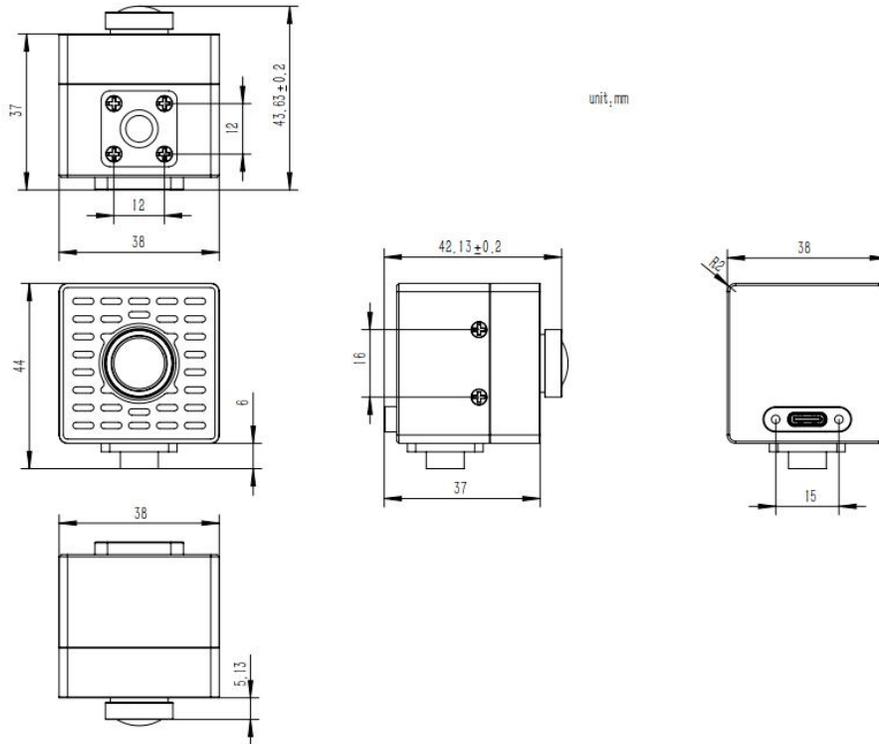
3. Product Specification

Image Sensor	
Sensor	IMX500
Resolution	12.3 Megapixels
Chroma	Color
Shutter Type	Rolling Shutter
Optical Format	1/2.3"
Output Format	YUY2
Pixel Size	1.55 μ m x 1.55 μ m
Sensor Active Area	4056(H) \times 3040(V)
Sensor Image Area	6.29 mm x 4.71 mm (7.86 mm diagonal)
Resolution@fps (With AI)	2016x1520@10~20fps
Resolution@fps (Without AI)	4048x3040@12fps, 2016x1520@40fps, 1280x720@10fps
Lens	
Focus Type	Fixed Focus
FOV	113 $^{\circ}$ (D) \times 100 $^{\circ}$ (H) \times 83 $^{\circ}$ (V)
Lens Mount	M12 Mount
F.NO	F2.8
E.F.L	2.70mm
IR Sensitivity	Integral 650nm IR Filter, visible light only
Default Focus Distance	30cm-INF
USB Features	
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
Functional and Compatibility	
Recommend Imaging Applications	PotPlayer for Windows, qv4l2 for Linux
SDK Support	Arducam IMX500UVC SDK
Supported OS	Windows, Linux
Exposure Time Range	4056x3040: 0.2~83 ms 2028x1520: 0.1~25 ms
AI Model Support	Arducam AI Model Zoo, Raspberry Pi IMX500 AI Model Zoo.
UVC Controls	Brightness, Contrast, Saturation, White Balance (Auto/Manual), Gain, Exposure (Manual/Auto)
Electrical and Mechanical	
Operating Voltage	USB-C: 5.1V/3.0A
Power Consumption	Max:1.3W

Camera Board Size	24×25 mm
Overall Weight (Net)	94.5g
Overall Size	38x34x38 mm
Standard and Certifications	
Temperature range (Storage)	-4°F-167°F (-20°C to +75°C)
Temperature range (Operating)	32°F-122°F (0°C to +50°C)
Certification	CE/RoHS

4. Mechanical Drawing

4.1 2D Drawing



4.2 3D Drawing (Rendering Style)



5. 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/>
- Official Wiki: <https://docs.arducam.com/>
- Quick Start Guide: [Arducam IMX500 USB3 UVC Camera Module](#)
- Arducam AI Model Zoo Demos: [Arducam IMX500 AI Model Zoo](#)
- Arducam AI Model Zoo (Source): [Github - Arducam IMX500 AI Model Zoo](#)
- AI Model Converter: [Arducam IMX500 AI Model Converter](#)
- Support E-mail: support@arducam.com

6. Certifications

