
The UCAM Series Camera Help Manual



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1 The Characteristic of UCAM Series Camera



Figure 1 UCAM Series Camera

The UCAM series cameras only require a single [USB Type-A to Type-C](#) cable to connect directly to the USB Type-A port of a computer, or a [USB Type-C to Type-C](#) cable to connect to the USB Type-C port of an Android mobile device, enabling video and image capture for stereomicroscopes and biological microscopes. The main features are as follows:

- Sony Starvis back illuminated CMOS sensor, or OMNIVISION CMOS sensor
- Provide rich ISP processing functions, 3DNR, Saturation, ROI white balance
- ToupView/ToupLite software for PC, fully applicable for biological and stereological observations
- Android app for smart phones or tablets
- Provide the XCamLab mobile app for Android, which can be used in standalone mode or for wireless interactive microscopy teaching scenarios



2 UCAM Series Camera Datasheet and Functions(2)

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	Sensor Output (FPS/Resolution)	Binning	Exposure (ms)
UCAM2MPA	OS02C10(C) 1/2.8"(5.57x3.13)	2.9x2.9	32000 e ⁻ /lux · s	60@1920x1080(USB)	1x1	0.107~874
UCAM5MPA	IMX335(C) 1/2.8"(5.18x3.89)	2.0x2.0	2020mv with 1/30s 0.52mv with 1/30s	30@2592x1944(USB)	1x1	0.066~1000



Figure 2 Available Ports on the Back Panel of the Camera Body

Interface	Function Description
USB	Connect the USB Type-A to Type-C cable to the computer's USB Type-A port; the computer will power the camera, and the camera will output live images via the USB Type-C port. Connect the USB Type-C to Type-C cable to the Android mobile device tablet's USB Type-C port; the tablet will power the camera, and the camera will output live images via the USB Type-C port.
LED	LED status indicator
Video Output Interface	Function Description
USB Interface	Connect to PC or Android mobile device USB Type C cable to transfer MJPEG real-time images, support 30fps@2592*1944(UCAM5MPA), 60fps(UCAM2MPA).
Software Environment under USB Output	
White Balance	Auto, Manual and ROI White Balance
Color Technique	Ultra-Fine Color Engine
ISP	Exposure (Automatic/Manual Exposure)/ Gain, White Balance (Auto, Manual and ROI White Balance), Hue, Saturation Adjustment, Contrast Adjustment, Brightness Adjustment, Gamma Adjustment, 3D Denoise, Sharpening, 50HZ/60HZ Anti-flicker, Mirror/Flip, Color to Grey.
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK (Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc)
Recording System	Still Picture or Movie
Operating System	Microsoft® Windows 8 / 10 / 11(32 & 64 bit) Linux Android 13.0 or More
PC Requirements	CPU: Equal to Intel i3 12100F or Higher
	Memory: 16GB or More
	Display: 19" or Larger
Android mobile device Requirements	CPU: Qualcomm Snapdragon 680
	Memory: 6GB or More
	GPU: Integrated Graphics
	Storage: 128 GB or above
Operating Environment	
Operating Temperature (in Centidegree)	-10°~ 50°
Storage Temperature (in Centidegree)	-20°~ 60°
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH

3 Dimension of UCAM Series Camera

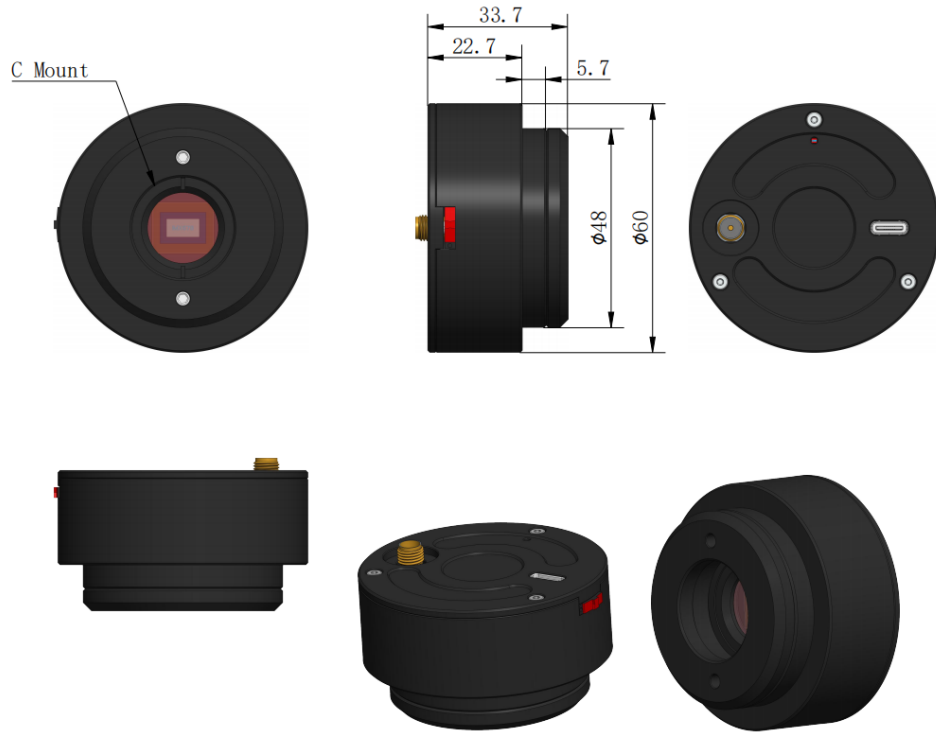


Figure 3 Dimension of UCAM Series Camera

4 Packing Information for UCAM Series Camera



Figure 4 Packing Information for UCAM Series Camera

Standard Packing List	
A	Gift box: L:13cm W:12cm H:5cm (1pcs, 0.2kg/ box)
B	One UCAM series camera
C	USB Type C to Type C cable 1.5 metres (Connect to an Android mobile device)
Optional Accessory	
D	USB Type A to Type C cable(USB2.0) 1.5 metres (Connect to PC)

5 Software and App

For Windows user (Windows 8/10/11 (32/64 bit)), please use [ToupView](#).

For Linux user (Linux distributions with kernel 2.6.27 or higher), please use [ToupLite](#). When connecting the camera with a Android mobile device, the [XCamLab App](#) is required. Just make sure that the Android 13.0 or higher operating systems.

The software or the [App](#) can be downloaded from the following link:

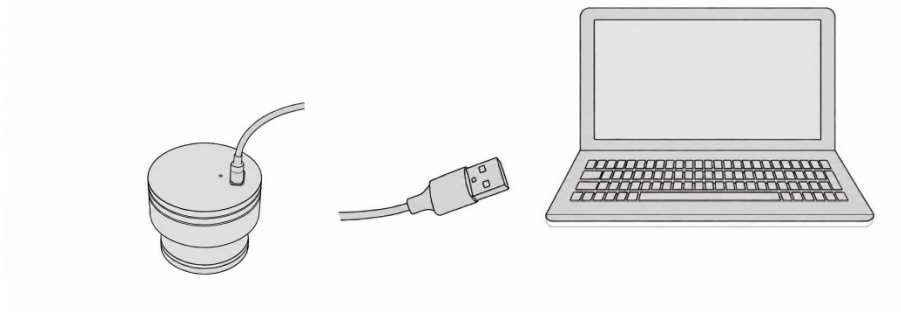
Windows: <https://www.touptekphotonics.com/download/>

Linux: <https://www.touptekphotonics.com/download/?category=Linux>

Android: To be updated later

6 UCAM Camera Application Configurations

6.1 The UCAM series cameras are connected to a computer's USB Type-A port via a USB Type-A to Type-C cable



The setup steps are as follows:

- Install the ToupView/ToupLite software on the PC;
- Connect the USB Type-A to Type-C cable to the computer's USB Type-A port and wait for the camera to start up;
- Start the ToupView/ToupLite software, usually the software on the PC will automatically recognise the UCAM series camera. In the ToupView/ToupLite software, select the corresponding UCAM series camera by clicking the camera name in the camera list.

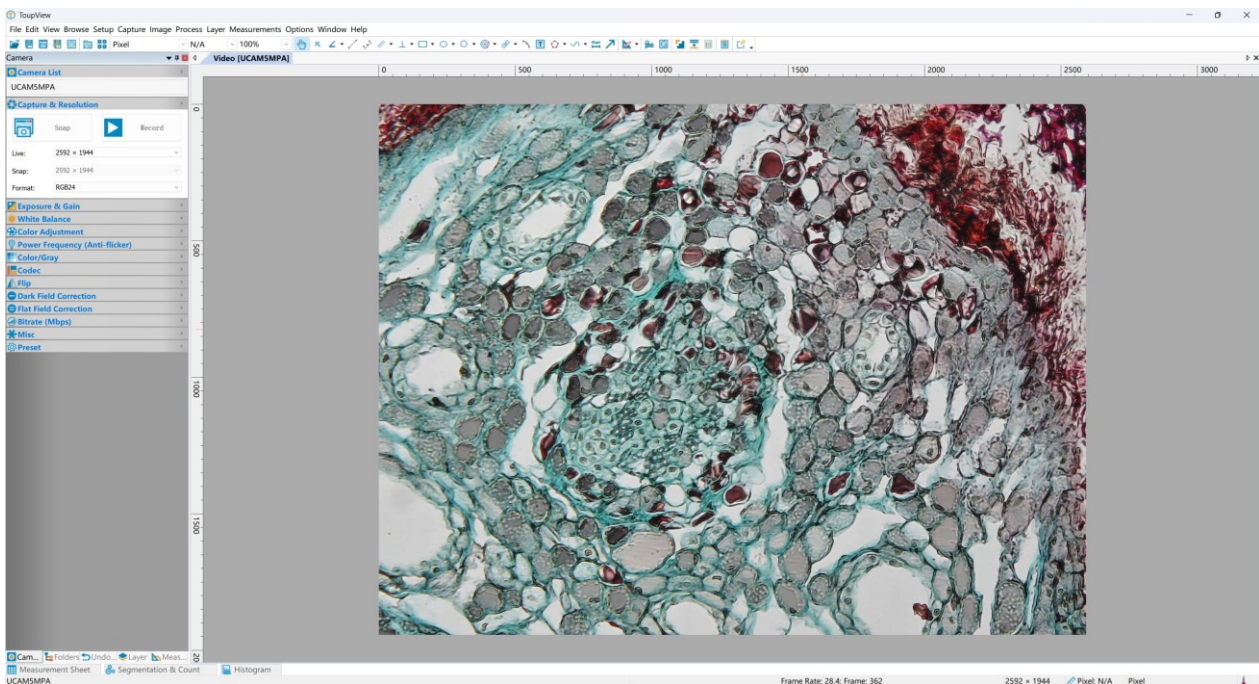
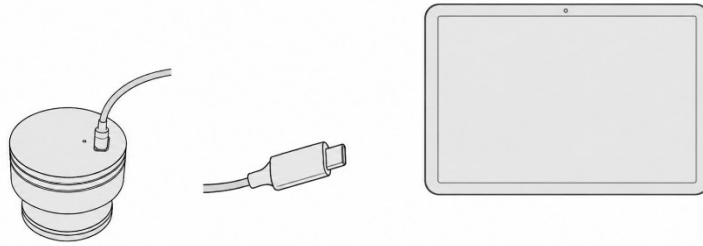


Figure 5 UCAM Series Cameras Connected to ToupView via USB Type-C

6.2 The UCAM series cameras connect to an Android mobile device via a USB Type-C to Type-C cable



The setup steps are as follows:

- Install the XCamLab app on your Android tablet;
- Connect the Type-C to Type-C cable to the USB Type-C port on your Android mobile device, and wait for the camera to start up;
- Start the XCamLab App and select Standalone Mode at bottom left. Once the camera is ready, confirm device authorization in the pop-up window to preview real-time footage (see figure below).;
- When UCAM series cameras are linked to Android mobile devices, the XCamLab app also can be utilized for wireless interactive microscopy teaching. See “XCamLab Hardware Description” and “XCamLab Software User Manual” for full instructions.

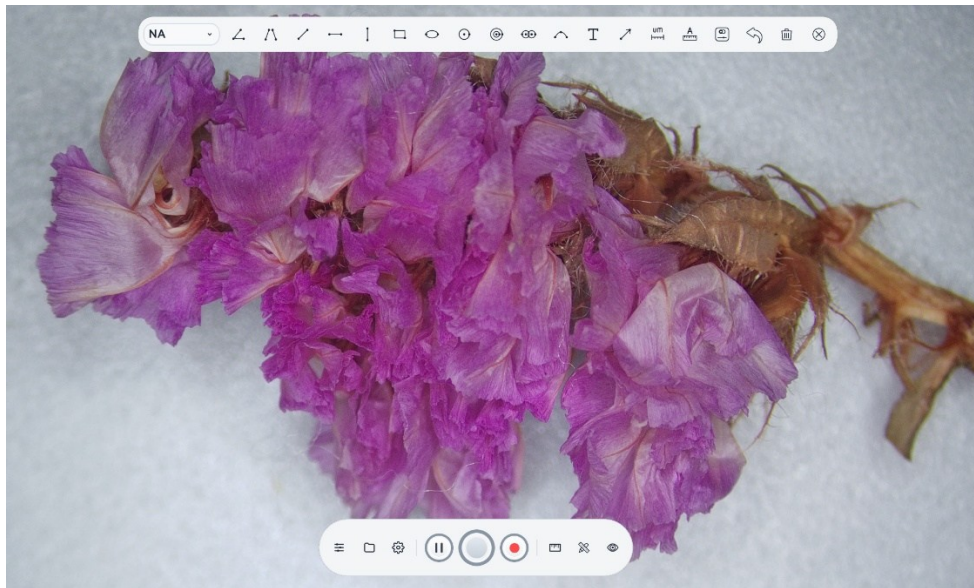
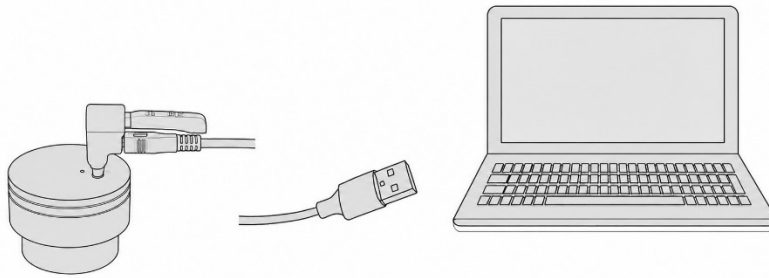


Figure 6 UCAM Series Cameras in XCamLab App Standalone Mode

7 UCAM Series Camera Upgrade Guide



- Extract the upgrade package, and copy all extracted upgrade files to a USB flash drive (**Note: The USB drive must be formatted as FAT32**);
- Plug the USB flash drive into the Type-C Male to A1C1 adapter, then connect the adapter to the USB Type-C port of the camera;
- Take the included USB Type-A to Type-C cable, plug one end into the adapter and the other end into the USB Type-A port of the computer, as shown in the figure above;
- The camera will start automatic upgrading. The power indicator flashes blue rapidly during the upgrade process; a steady blue light indicates the upgrade is completed;
- After the upgrade finishes, disconnect the adapter. Then connect the USB Type-A to Type-C cable to the camera's USB Type-C port. You may verify the correct firmware version via Help -> Diagnostics in the ToupView software. (**Note: Remove the USB flash drive and delete the upgrade files after the upgrade**).

8 ToupTek®-- Contact Information

	杭州图谱光电科技有限公司	
	杭州市西湖区西园五路 6 号奥强大厦 1 号楼 15 层	
	杭州, 310030, 浙江,	
	中国	
	Hangzhou ToupTek Photonics Co., Ltd	
	15F, Aoqiang Building 1, No. 6, Xiyuan 5th Rd.,	
	Hangzhou, 310030, Zhejiang,	
	P.R.China	
	+86-571-8111-0735	
	+86-571-8111-0730	
	+86-571-8810-2638,	
	+86-18058780750 (手机/Mobile Phone)	
	FAX: +86-571-8668-3738	
	tphz@touptek.com	
	Skype:	18058780750/ToupTek Photonics
	QQ	2426878316
	Wechat	18058780750