

## Touptek Microscope - USB-Camera XCAMLITE-4K-Series 4k-HDMI + USB 2.0 + SD-Card

The XCAMLITE4K series is the next-generation live-view imaging-system with 4K resolution at 60/30 FPS. XCAMLITE4K series comes with Sony Exmor CMOS sensor with high sensitivity, low dark current and no smear achieved through the adoption of R, G and B primary color mosaic filters. The camera uses a standard C-mount interface for maximum compatibility with various microscopy-systems. It can be used as a stand-alone recorder when used with an HDMI monitor or television.

Hardware 3D denoising, sharpness and local tone mapping control functions greatly improve the image and video quality. The included Windows software offers image-development and measurement tools, as well as advanced compositing features such as image-stitching and extended-depth-of-focus.

With the ability to calibrate scales at multiple magnifications, the software can be used for multi-level inspection. For Mac and Linux, there is a lite version of the software which can capture video and still images, and includes limited processing features.

The XCAMLITE4K8 camera is intended to be used for the acquisition of digital images from the stereo microscope, biological microscope or online interactive teaching.

The basic characteristics are listed as below:

- Sony Exmor back-illuminated CMOS sensor
- 4K HDMI / USB multiple video outputs
- 4K/1080P auto switching according to monitor resolution
- SD card/USB 2.0, flash drive for captured image and video storage, support local preview and playback
- Embedded XCamView for the control of the camera and image processing
- Excellent ISP with local tone mapping and 3D denoising
- ToupView/ToupLite software for PC
- iOS/Android applications for smart phones or tablets

Applications of Touptek XCAMLITE-4K series:

- Scientific research, digital teaching (teaching, demonstration and academic discussing)
- Digital laboratory, medical research
- Machine vision (PCB detection, IC quality control)
- Medical treatment (pathological observation)
- Food (microbial colony observation and counting)
- Aviation and military;



**Technical Data:**

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity	FPS/Resolution	Binning	Exposure(ms)
XCAMLITE4K8MPA	Sony IMX334(C) 1/1.8"(7.68x4.32)	2.0x2.0	505mv with 1/30s 0.1mv with 1/30s	30@3840*2160(HDMI) 20@3840*2160(USB)	1x1	0.04~1000
XCAMLITE4K8MPB	Sony IMX485(C) 1/1.2"(11.14x6.26)	2.9x2.9	2188mv with 1/30s 0.39mv with 1/30s	30@3840*2160(HDMI) 20@3840*2160(USB)	1x1	0.04~1000

Interface	Function Description
USB Mouse	Connect USB mouse for easy operation with embedded XCamView software;
USB Video	Connect PC or other host device to realize video image transmission;
HDMI	Comply with HDMI1.4 standard. 4K or 1080P format video output for standard monitor;
DC12V	Power adapter connection (12V/1A);
SD	Comply with SDIO3.0 standard and SD card could be inserted for video and images storage;
LED	LED status indicator;
ON/OFF	Power switch;

Video Output Interface	Function Description
HDMI Interface	Comply with HDMI1.4 standard; 30fps@4K or 30fps@1080P;
USB Video Interface	Connecting USB port of PC for video transfer ; MJPEG format video;

Function Name	Function Description
Video Saving	Video format: 8M(3840*2160) H264/H265 encoded MP4 file; Video saving frame rate: 30fps;
Image Capture	8M (3840*2160) JPEG/TIFF image in SD card ;
Measurement Saving	Measurement information saved in layer mode with image content; Measurement information is saved together with image content in burn in mode.

Function Name	Function Description
Exposure / Gain	Automatic / Manual Exposure
White Balance	Manual / Automatic / ROI Mode
Sharpening	Supported
3D Denoise	Supported
Saturation Adjustment	Supported
Contrast Adjustment	Supported
Brightness Adjustment	Supported
Gamma Adjustment	Supported
50HZ/60HZ Anti-flicker Function	Supported

Function Name	Function Description
Zoom In/Zoom Out	Up to 10X
Mirror/Flip	Supported
Freeze	Supported
Cross Line	Supported
Overlay	Supported
Embedded Files Browser	Supported
Video Playback	Supported
Measurement Function	Supported

Function Name	Function Description
Embedded RTC(Optional)	To support accurate time on board
Restore Factory Settings	Supported
Multiple Language Support	English / Simplified Chinese / Traditional Chinese / Korean / Thai / French / German / Japanese / Italian / Russian

## Size

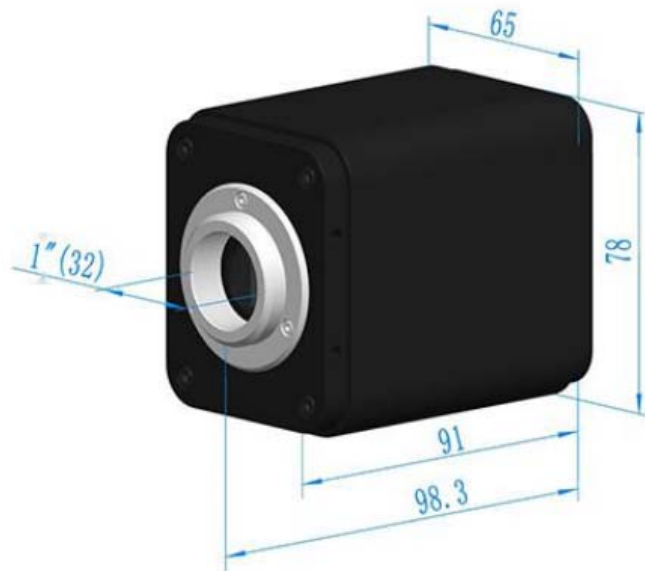


Figure 3- 1 Available Ports on the Back Panel of the Camera Body




## Packing Information:



H, I, J, KL adapters and M do not belong to standard scope of delivery.

Standard Packing List		
A	Gift box : L:25.5cm W:17.0cm H:9.0cm (1pcs,1.43kg/ box)	
B	XCAMLITE4K series camera	
C	<b>Power Adapter:</b> Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 1A American standard: Model: GS12U12-P11 12W/12V/1A: UL/CUL/BSMI/CB/FCC EMI Standard:EN55022,EN61204-3, EN61000-3-2,-3, FCC Part 152 class B, BSMI CNS14338 EMS Standard:EN61000-4-2,3,4,5,6,8,11,EN61204-3,Class A Light Industry Standard <b>European standard:</b> Model:GS12E12-P11 12W/12V/1A; TUV(GS)/CB/CE/ROHS EMI Standard:EN55022,EN61204-3, EN61000-3-2,-3, FCC Part 152 class B, BSMI CNS14338 EMS Standard:EN61000-4-2,3,4,5,6,8,11,EN61204-3,Class A Light Industry Standard	
D	USB Mouse	
E	HDMI cable	
F	USB2.0 A male to A male gold-plated connectors cable /2.0m	
G	CD (Driver & utilities software, Ø12cm)	
Optional Accessory		
H	SD card(16G or above; Speed: class 10)	
I	Adjustable lens adapter (Please choose 1 of them for your microscope)	C-Mount to Dia.23.2mm eyepiece tube 108001/AMA037 108002/AMA050 108003/AMA075
J	Fixed lens adapter (Please choose 1 of them for your microscope)	C-Mount to Dia.23.2mm eyepiece tube 108005/FMA037 108006/FMA050 108007/FMA075
<b>Note: For K and L optional items, please specify your camera type(C-mount, microscope camera or telescope camera), ToupTek engineer will help you to determine the right microscope or telescope camera adapter for your application;</b>		
K	108015(Dia.23.2mm to 30.0mm Ring)/Adapter rings for 30mm eyepiece tube	
L	108016(Dia.23.2mm to 30.5mm Ring)/ Adapter rings for 30.5mm eyepiece tube	
M	Calibration kit	106011/TS-M1(X=0.01mm/100Div.); 106012/TS-M2(X,Y=0.01mm/100Div.); 106013/TS-M7(X=0.01mm/100Div., 0.10mm/100Div.)

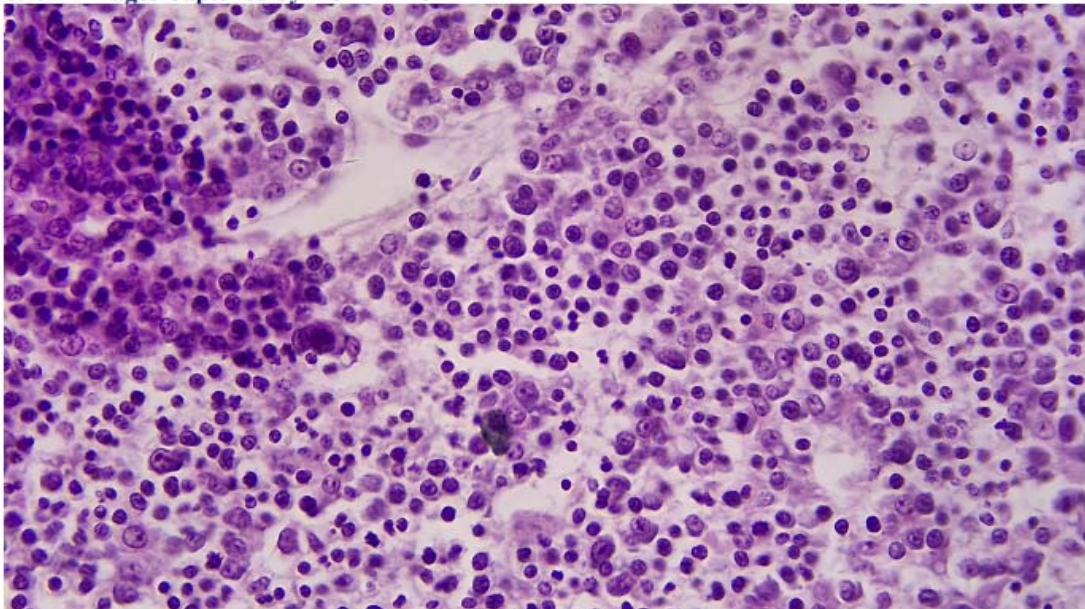
Optional adapters to connect XCAMLITE-4K to 23.2 mm eye piece tubus

Extension	Picture
C-mount Camera	 <p>Machine vision; Medical imaging; Semiconductor equipment; Test instruments; Document scanners; 2D barcode readers; Web camera and security video; Microscope imaging;</p>
Microscope Camera	 <p>4K HDMI+AMAXXX(23.2mm Adapter)      4K HDMI+FMAXXX(23.2mm Adapter)</p>
Telescope Camera	 <p>4K HDMI+ATAXXX(31.75mm Adapter)      4K HDMI+FTAXXX(31.75mm Adapter)</p>

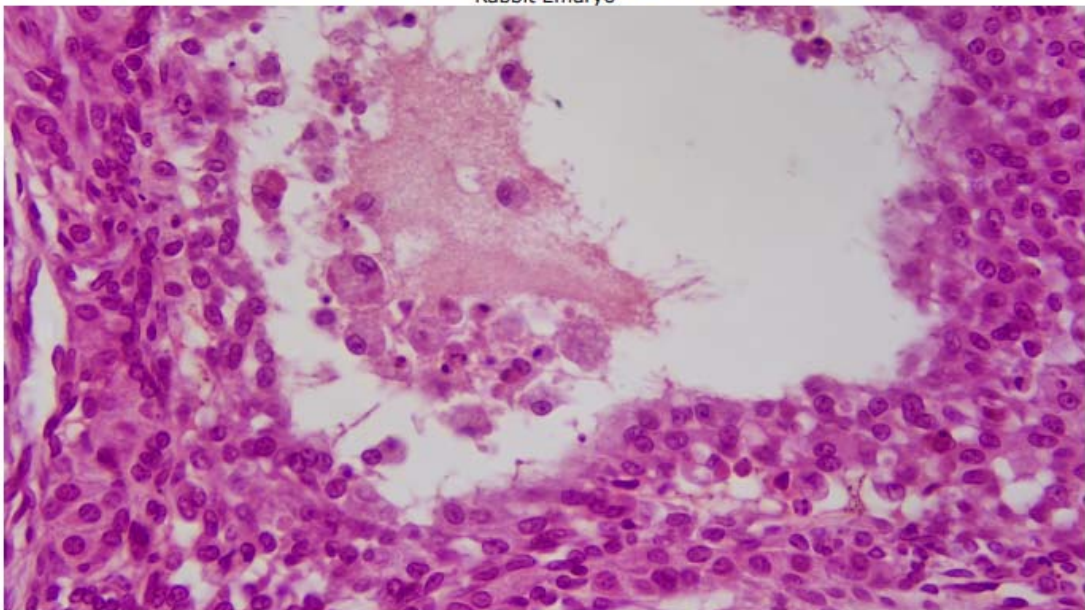
## Application Example:



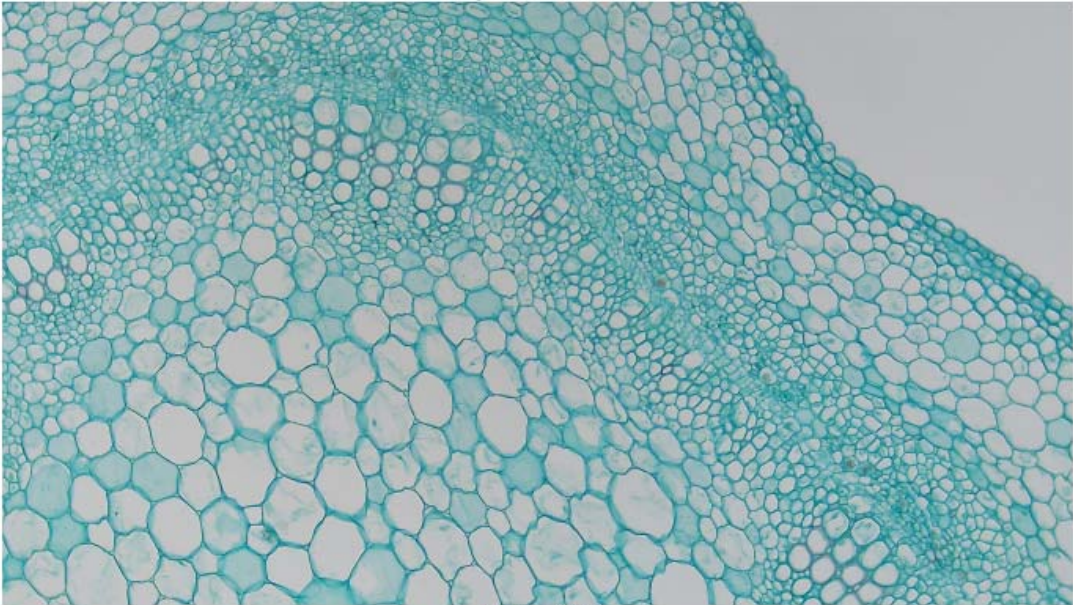
## Images:



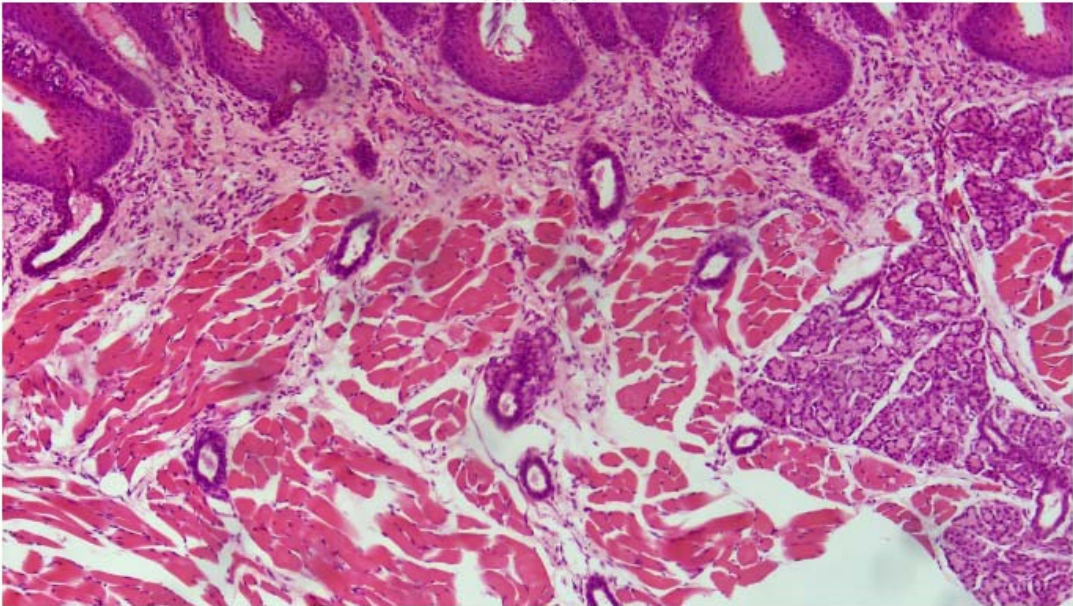
Rabbit Embryo



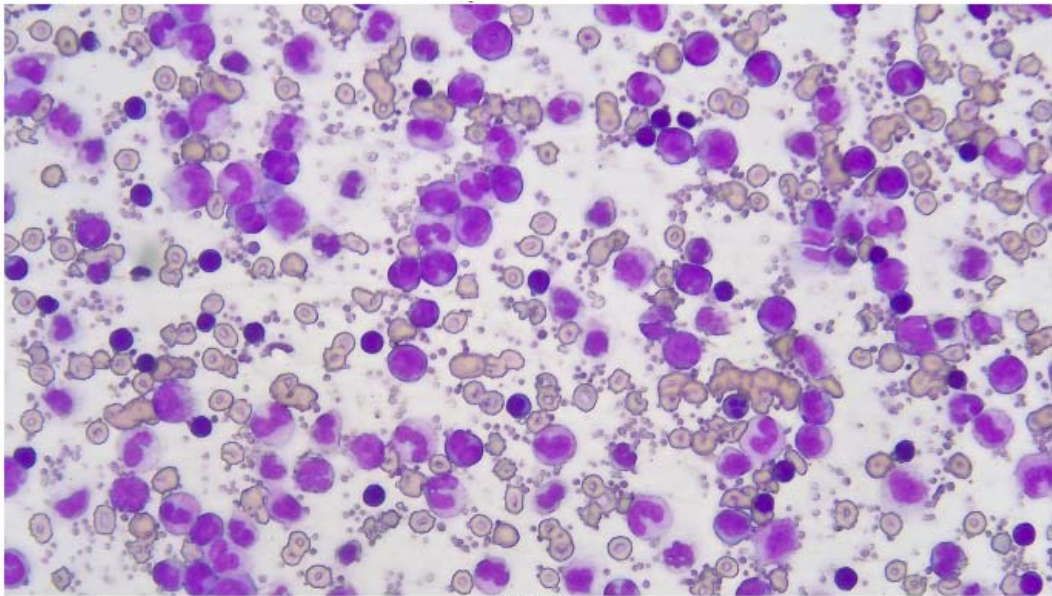
Ovary



Cotton Stem



Taste Bud



MK54-40



Figure 6-1 XCAM4K Camera and Leica Microscope



Figure 6-2 XCAM4K Camera and Zeiss Microscope



All images made by Touptek

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