XCAM4K Series HDMI/NETWORK /USB Multi-outputs C-mount CMOS Camera

The XCAM4K series **HDMI Camera** is the next-generation live-view imaging-system with 4K resolution(Video) at 60 FPS. It 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, or live-streamed to a PC via Gigabit Ethernet (LAN) for image-capture and video-recording.

Hardware 3D denoising, sharpness and 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 HDMI 4K series Camera is intended to be used for the acquisition of digital images from the stereo microscope, biological microscope or online interactive teaching.

- Sony Exmor CMOS sensor
- 4K HDMI/LAN/WLAN/USB multiple video outputs
- 4K/1080P auto switching according to the display resolution
- SD card/USB flash disk for the captured image and video storage
- Embedded XCAMView for the control of the camera
- With strong ISP and other related processing functions
- ToupView/ToupLite software for PC
- iOS/Android applications for smart phones or tablets
- Windows/Linux/macOS/Android multiple platforms SDK;

Related Models   Model in Stock XCAM4K 8MPA

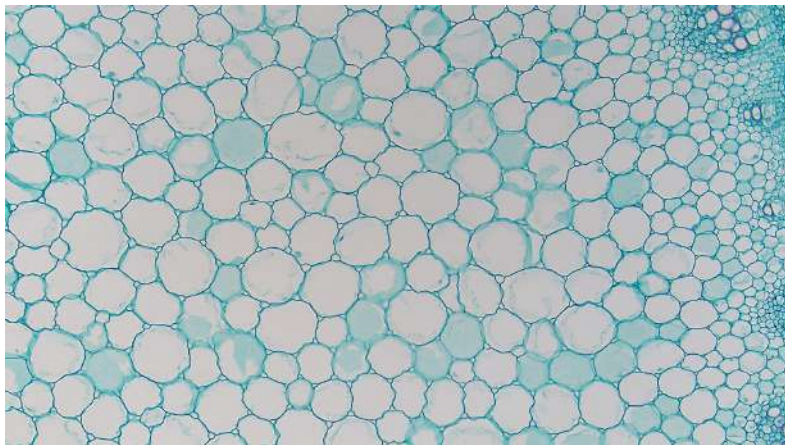| Order Code	Sensor & Size(mm)	Pixel (µm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure (ms)
XCAM4K8MPA	4K/Sony IMX334(C) 1/1.8"(7.68x4.32)	2.0x2.0	505mv with 1/30s 0.13mv with 1/30s	60@3840*2160(HDMI) 30@3840*2160(NETWORK) 30@3840*2160(USB)	1x1	0.04~2000
XCAM4K8MPB	Sony IMX485(C) 1/1.2"(11.14x6.26)	2.9x2.9	2188mv with 1/30s 0.39mv with 1/30s	60@3840*2160(HDMI) 30@3840*2160(NETWORK) 30@3840*2160(USB)	1x1	0.04~2000
XCAM4K16MPA	Sony IMX183(C) 1/1.06"(13.06x7.34)	2.4x2.4	461mv with 1/30s 0.21mv with 1/30s	30@3840*2160(HDMI) 30@3840*2160(NETWORK) 15@5440*3060(USB)	1x1	0.04~2000

Specification

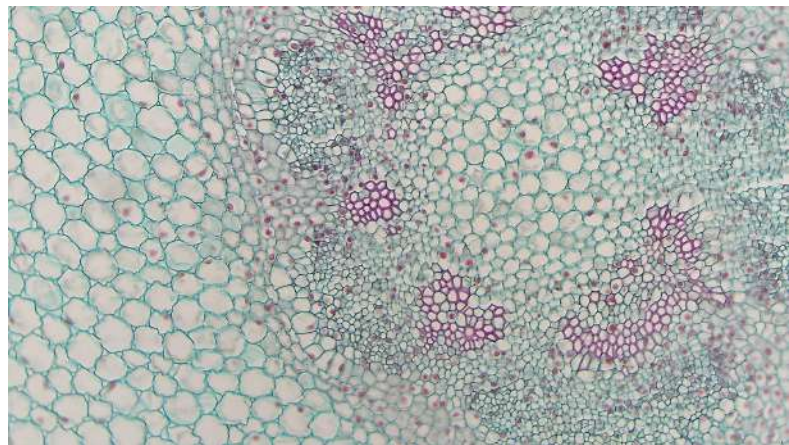| Interface or Button	Function Description
USB Mouse	Connect USB mouse for easy operation with embedded XCamView software.
USB3.0	Connect USB flash drive to save pictures and videos (Host Mode). Connect 5G WiFi module to transfer video wirelessly in real time(AP/STA, Host Mode)； Connect computer with USB connection to transfer video in real time(Device Mode)；
HDMI	Comply with HDMI2.0 standard. 4K/1080P format video output and supporting automatic switch between 4K and 1080P format according to the connected monitors.,
LAN	LAN port to connect router and switch to transfer video.
SD	Comply with SDIO3.0 standard and SD card could be inserted for video and images saving.
ON/OFF	Power switch.
LED	LED status indicator.
DC12V	Power adapter connection (12V/1A).
Video Output Interface	**Function Description**
HDMI Interface	Comply with HDMI2.0 standard; 60fps@4K or 60fps@1080P(XCAM4K8MPA, XCAM4K8MPB); 30fps@4K or 60fps@1080P(XCAM4K16MPA);
LAN Interface	30ps@4K resolution, support real time resolution switching; H264/H265 encoded video; Bandwidth adjustment in real time; DHCP configuration or manual configuration; Unicast/multicast configuration;
WiFi Interface	Connecting 5G WiFi adapter (USB3.0 slot) in AP/STA mode (Host Mode);
USB3.0 Slot	Connecting USB3.0 port of PC for video transfer (Device Mode); MJPEG format video;
Other Function	**Function Description**
Video Saving	Video format：8M(3840*2160) H264 encoded MP4 file; Video saving frame rate：50~260fps(XCAM4K8MPA, XCAM4K8MPB) (related with SD card and video resolution); 26~30fps(XCAM4K16MPA) (related with SD card and video resolution);
Image Capture	8M (3840*2160, XCAM4K8MPA, XCAM4K8MPB) JPEG/TIFF image in SD card or USB flash drive; 16M (3840*2160, XCAM4K16MPA) JPEG/TIFF image in SD card or USB flash drive.
Measurement Saving	Measurement information saved in different layer with image content; Measurement information is saved together with image content in burn in mode.
ISP Function	Exposure(Automatic / Manual Exposure) / Gain, White Balance(Manual / Automatic / ROI Mode), Sharpening, 3D Denoise, Saturation Adjustment, Contrast Adjustment, Brightness Adjustment, Gamma Adjustment, Color to Gray, 50HZ/60HZ Anti-flicker Function
Image Operation	Zoom In/Zoom Out(Up to 10X), Mirror/Flip, Freeze, Cross Line, PIP (Picture in Picture), Compare(Comparison between real time video and images in SD card or USB flash drive), Embedded Files Browser, Video Playback, Measurement Function
Embedded RTC(Optional)	To support accurate time on board
Restore Factory Settings	Restore Camera parameters to its factory status
Multiple Language Support	English / Simplified Chinese / Traditional Chinese / Korean / Thai / French / German / Japanese / Italian
Software Environment under NEWWORK/WiFi/USB Video Output	
White Balance	Auto White Balance
Color Technique	Ultra-Fine Color Engine
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® XP / Vista / 7 / 8 / 8.1 /10(32 & 64 bit) OSx(Mac OS X) Linux

PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory: 4GB or More
	Ethernet Port: RJ45 Ethernet Port
	Displayer:19" or Larger
	CD-ROM

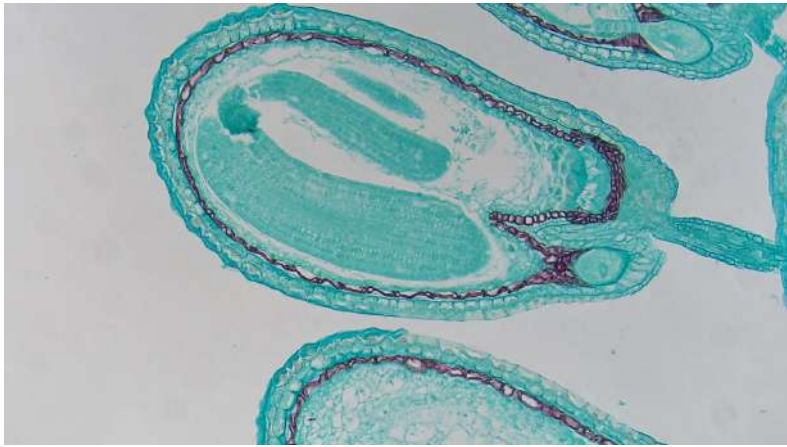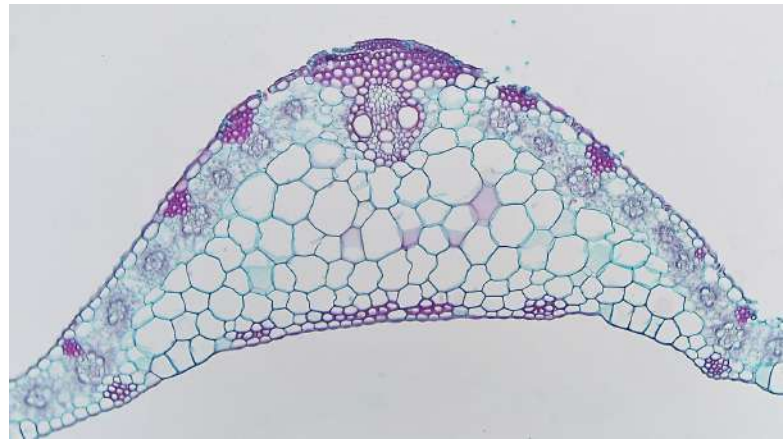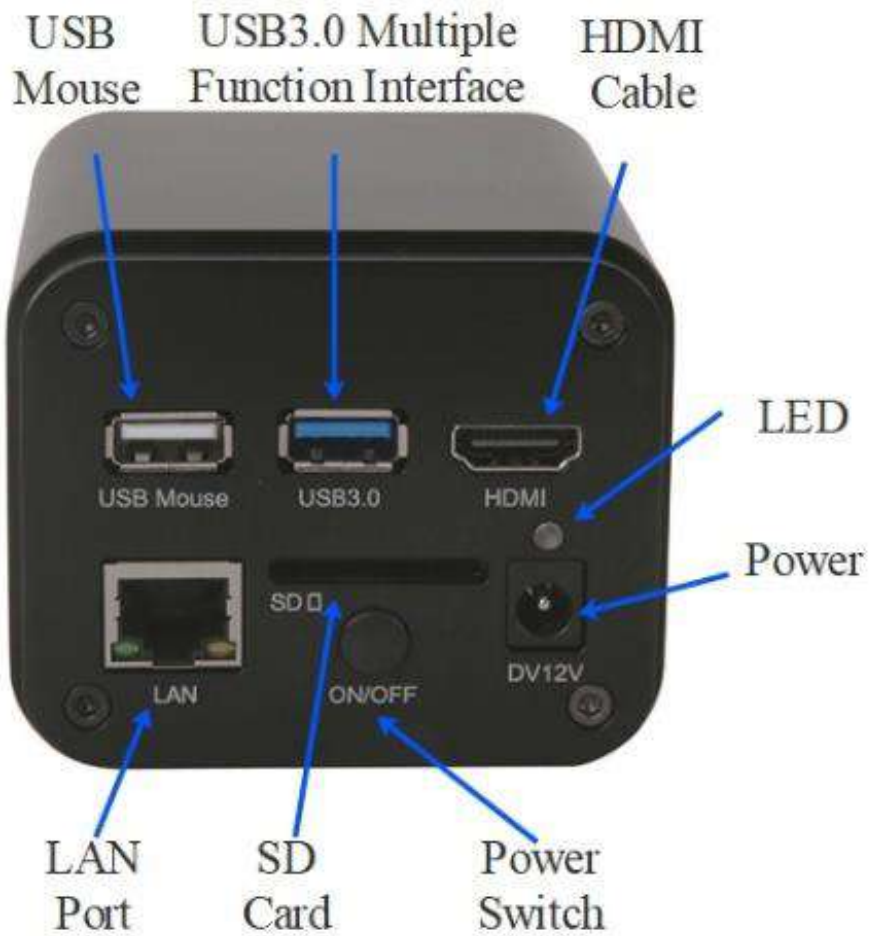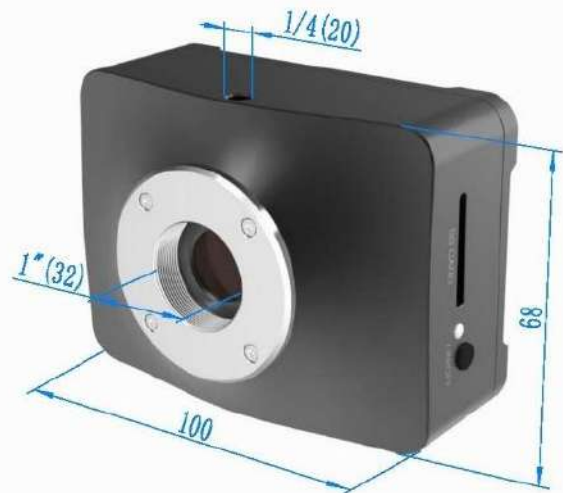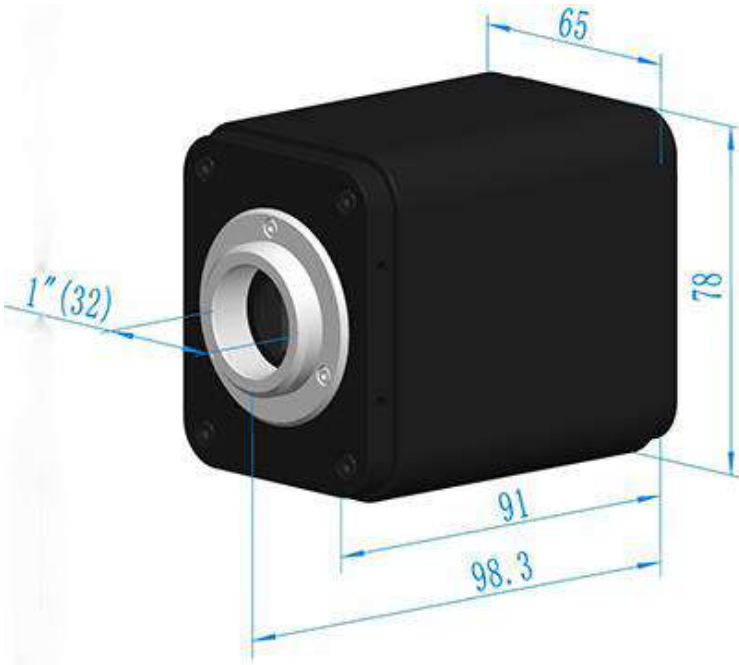| **Operating Environment**	
Operating Temperature (in Centidegree)	-10°~ 50°
Storage Temperature (in Centidegree)	-20°~ 60°
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Power Supply	DC 12V/1A Adapter

Instance

Alfalfa Stem

Broad Bean Root

Capsella Older Embryo

Corn Leaf

USB Mouse   USB3.0 Multiple Function Interface   HDMI Cable

USB Mouse   USB3.0   HDMI

LED

Power

LAN   SD □   DV12V

LAN Port   SD Card   Power Switch

ON/OFF

XCAM4K Camera Dimensions

Packing List

Packing List

(XCAM4K Series Camera Packing Information(Cubic and Flat Shape

	Standard Packing List		
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A	Gift box : L:25.5cm W:17.0cm H:9.0cm (1pcs, 1.57Kg/ box)		
B	XCAM4K series camera(Square or flatened)		
C	Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 1A American standard: Model: GS12U12-P1I 12W/12V/1A: UL/CUL/BSMI/CB/FCC European standard: Model:GS12E12-P1I 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 2.0 Cable(Support 3840x2160, 60FPS)		
F	High-speed USB3.0 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	USB WiFi adapter		
J	Ethernet cable		
K	Adjustable lens adapter	C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)	108001/AMA037 108002/AMA050 108003/AMA075
L	Fixed lens adapter	C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)	108005/FMA037 108006/FMA050 108007/FMA075
	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 applications;		
M	108015(Dia.23.2mm to 30.0mm ring)/Adapter rings for 30mm eyepiece tube		
N	108016(Dia.23.2mm to 30.5mm ring)/ Adapter rings for 30.5mm eyepiece tube		
O	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.)	