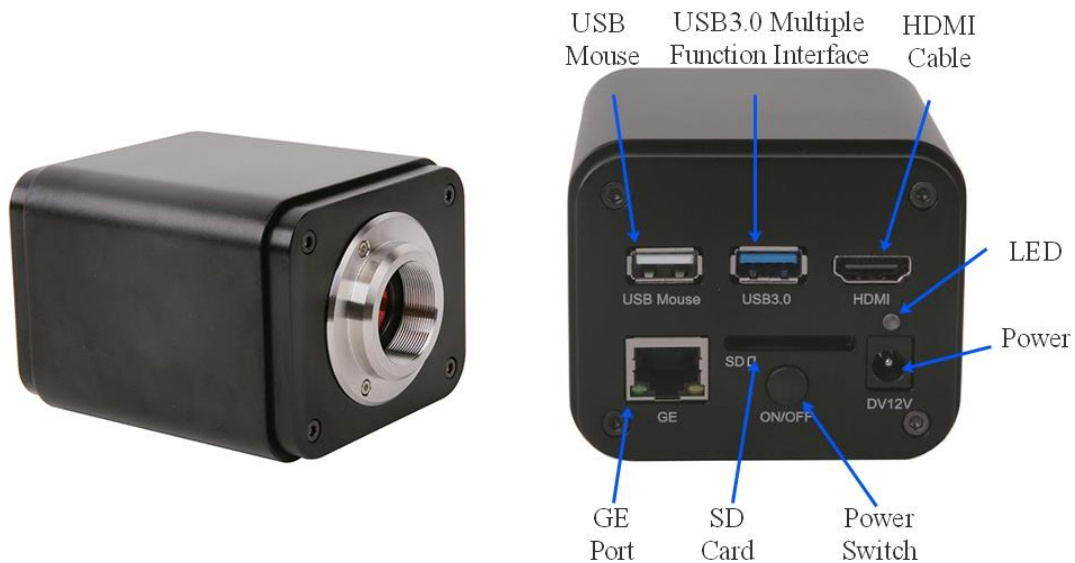


BWHC-4K 4K UHD HDMI/GigE/WiFi Multi-outputs Digital Camera



Introduction

The **BWHC-4K** series is the next-generation live-view imaging-system with 4K resolution at 60/30 FPS.

BWHC-4K 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 cameras use 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 (GE) for image-capture and video-recording.

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 BWHC-4K series cameras are intended to be used for the acquisition of digital images from the stereo microscope, biological microscope or online interactive teaching.

Features

The basic characteristics are listed as below:

1. Sony Exmor CMOS sensor;
2. 4K HDMI/GE/WLAN multiple video outputs;
3. 4K/1080P auto switching according to the display resolution;
4. SD card/USB flash disk for the captured image and video storage;

5. Embedded XCAMView for the control of the camera with mouse, no shaking;
6. With strong ISP and other related processing functions;
7. ImageView software for PC;
8. iOS/Android applications for smart phones or tablets.

Application

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



Specification

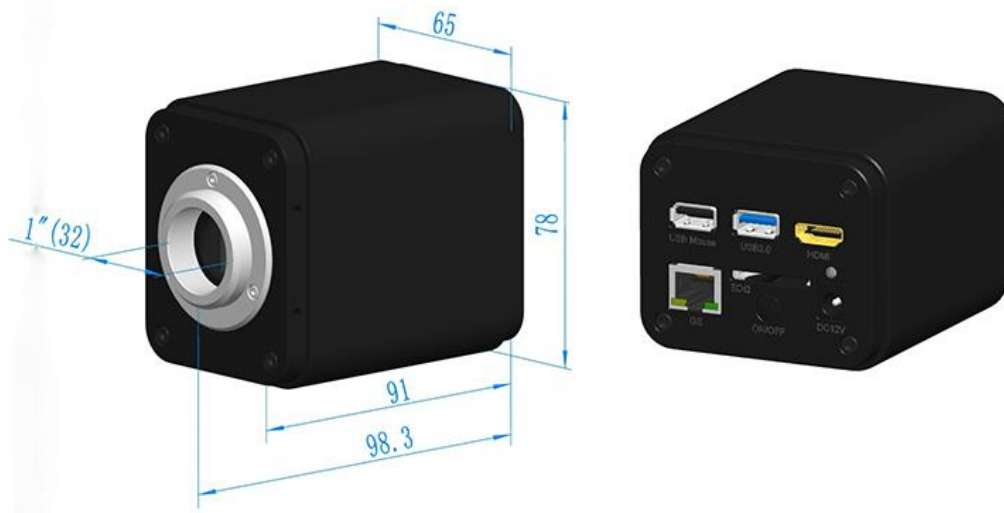
| Order Code | Sensor & Size(mm) | Pixel(μm) | G Sensitivity Dark Signal | FPS/Resolution | Binning | Exposure |
|--------------|--|-----------|--|--|---------|---------------|
| BWHC-4K8MPA | 4K/Sony IMX334(C) 1/1.8"(7.68x4.32) | 2.0x2.0 | 505mv with 1/30s 0.13mv with 1/30s | 60@3840*2160(HDMI) 60@1920*1080(HDMI) 30@3840*2160(WiFi, GE) | 1x1 | 0.04ms~1000ms |
| BWHC-4K16MPA | Sony IMX183(C) 1/1.06"(13.06x7.27) | 2.4x2.4 | 1847mv with 1/30s 0.84mv with 1/30s | 30@3840*2160(HDMI) 30@1920*1080(HDMI) 30@3840*2160(WiFi,GE) | 1x1 | 0.04ms~2000ms |

C: Color; M: Monochrome;

| Interface & Button Functions | |
|-------------------------------------|--|
| | USB Mouse Connect USB mouse for easy operation of the embedded XCAMView software |
| | USB3.0 Connecting USB flash disk for image or video storage; Connecting 5G WLAN adapter as WLAN camera in AP or STA mode; |
| | HDMI Comply with HDMI2.0 standard. 4K/1080P format video output and supporting auto switching between 4K and 1080P format according to the connected display resolution |
| | GE Gigabit Ethernet port to connect to the PC for the video streaming |
| | SD Comply with SDIO3.0 standard and SD card could be inserted for the images or videos storage |
| | DC12V Power adapter connection (12V) |
| | ON/OFF Power switch |
| | LED Camera status indicator |
| Other Specification for HDMI Output | |
| UI Operation | With USB Mouse |
| Image Capture | 8M (3840*2160) JPEG Image in SD Card or USB Flash Disk(BWHC-4K8MPA) 16M (5440*3060) JPEG Image in SD Card or USB Flash Disk(BWHC-4K16MPA) |
| Video Record | Video Format: 8M(3840*2160) H264 Encoded MP4 Format (BWHC-4K8MPA, BWHC-4K16MPA) Video Recording Frame Rate: 50~60FPS(BWHC-4K8MPA),26~30FPS(BWHC-4K16MPA) (related with the SD card speed class and video resolution) |
| Camera Control Panel | Including Exposure, Gain, White Balance, Color Adjustment, Sharpness and Denoising Control |
| Toolbar | Including Zoom, Mirror, Comparison (Video~image, image~image), Freeze, Cross, Browser Function |
| Other Specification for GE Output | |
| White Balance | Auto/Manual/ROI White Balance |
| Color Technique | Ultra-Fine™ Color Engine |
| Capture/Control API | Standard GE API for Windows/Linux/Mac |

| | |
|---------------------------------------|---|
| Recording System | Still Picture or Video |
| Software Environment | |
| 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 |
| | Display:19" or Larger |
| | CD-ROM |
| Operating Environment | |
| Operating Temperature (in Centigrade) | -10°~ 50° |
| Storage Temperature (in Centigrade) | -20°~ 60° |
| Operating Humidity | 30~80%RH |
| Storage Humidity | 10~60%RH |
| Power Supply | DC 12V/1A Adapter |

Dimension of BWHC-4K Series



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Packing Information of BWHC-4K Series








Packing Information of BWHC-4K Series

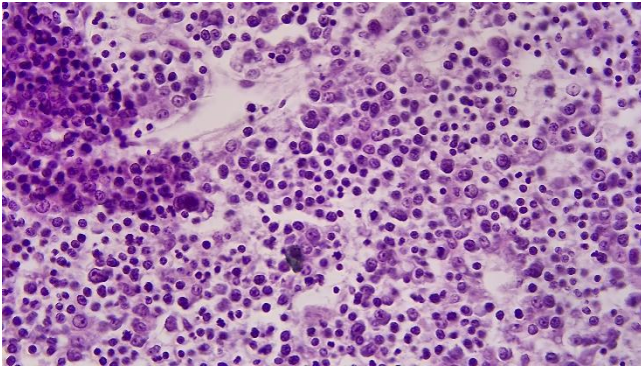
| Standard Packing List | | |
|-----------------------|---|--|
| A | Gift box : L:25.5cm W:17.0cm H:9.0cm (1pcs, 1.43Kg/ box) | |
| B | BWHC-4K Series Camera | |
| C | Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 1A American standard: Model: GS12U12-P1I 12W/12V/1A: UL/CUL/BSMI/CB/FCC EMI Standard: EN55022, EN61204-3, EN61000-3-2,-3, FCC Part 152 class B, BSMI CNS14338 EMC Standard: EN61000-4-2,3,4,5,6,8,11, EN61204-3, Class A Light Industry Standard 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 EMC 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 WLAN adapter | |
| J | Ethernet cable | |
| K | Adjustable lens adapter | C-Mount to Dia.23.2mm Eyepiece Tube (Please choose 1 of them for your microscope) |
| | | C-Mount to Dia.31.75mm Eyepiece Tube (Please choose 1 of them for your telescope) |
| L | | C-Mount to Dia.23.2mm Eyepiece Tube |

| | |
|---|---|
| Fixed lens adapter | (Please choose 1 of them for your microscope) |
| | C-Mount to Dia.31.75mm Eyepiece Tube (Please choose 1 of them for your telescope) |
| Note: For K and L optional items, please specify your camera type (C-mount, microscope camera or telescope camera), our engineer will help you to determine the right microscope or telescope camera adapter for your application; | |
| 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.) |

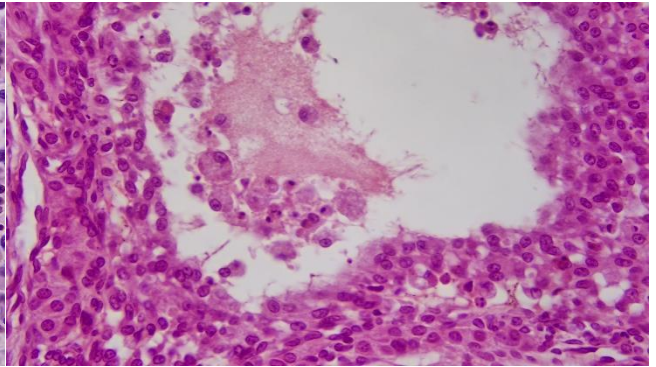
Extension of XCAM4K Series with Microscope or Telescope Adapter

| 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 |   |
| Telescope Camera |   |

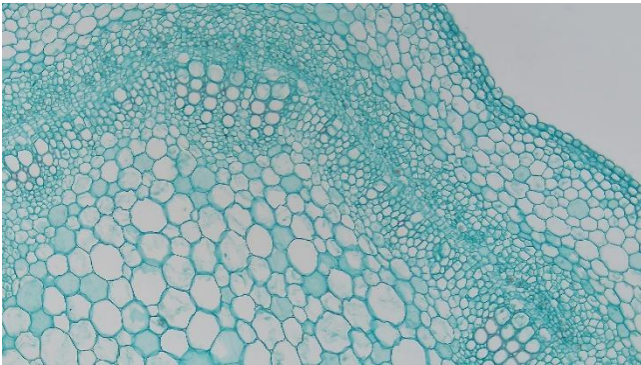
Images Captured by BWHC-4K8MPA



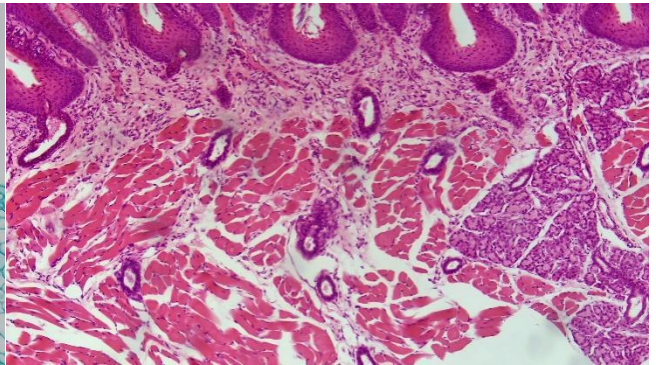
Rabbit Embryo



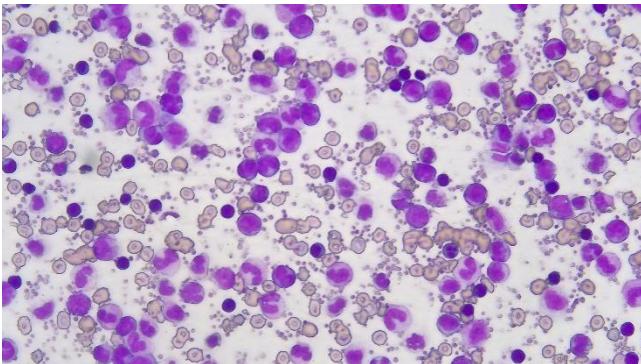
Ovary



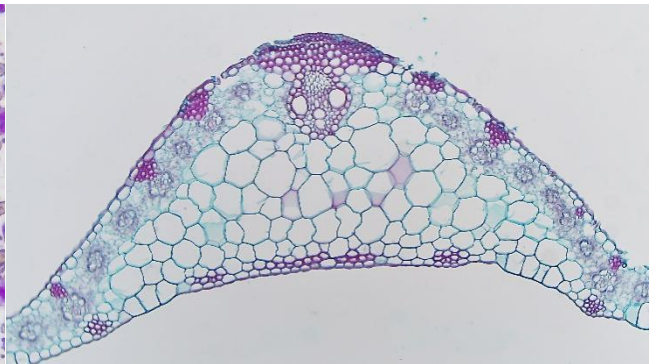
Cotton Stem



Taste Bud



Blood cells



Corn Leaf

BWHC-4K Camera and Microscopes



BWHC-4K Camera and Leica Microscope



BWHC-4K Camera and Zeiss Microscope