BWHC2-4KAF8MPA Auto Focus UHD CMOS Camera

Introduction

The BWHC2-4KAF8MPA **is a camera that includes multiple modes of output (HDMI/WLAN/USB),** AF **means auto focus. It uses ultra-high-performance** CMOS **sensor. The camera can be directly connected to an** HDMI **display, or it can be connected to a computer via** WiFi **or** USB**, and the image and video can be saved in an SD card /USB flash drive for on-site analysis and subsequent research.**

Enhanced with an embedded ARM core, this camera integrates various functions inside. With the help of a USB mouse and well-designed UI on the HDMI monitor, all functions could be easily controlled.

The BWHC2-4KAF8MPA camera comes with the built-in Auto Focus system, which can realize Auto Focus on specific areas of the sample.

By inserting a WLAN module or connecting to a computer via a USB cable, the user can directly control the camera's hardware with the software ImageView. The BWHC2-4KAF8MPA camera can be used for tool field inspection, microscope observation, etc.

Features

The basic characteristic is listed as below:

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

Specification

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure(ms)
BWHC2-4KAF8MPA	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) 30@3840*2160(WLAN) 30@3840*2160(USB)	1x1	0.04~1000

Available Ports on the Back Panel of the Camera Body

Interface or Button	Function Description
USB Mouse	Connect USB mouse for easy operation with embedded XCamView software
USB2.0	Connect USB flash drive to save pictures and videos Connect 5G WLAN module to transfer video wirelessly in real time
USB Video	Connect PC or other host device to realize video image transmission
HDMI	Comply with HDMI1.4 standard. 4K/1080P format video output and supporting automatic switch between 4K and 1080P format according to the connected monitors
ON/OFF	Power switch
SD	Comply with SDIO3.0 standard and the SD card could be inserted for video and images saving
LED	LED status indicator
DC12V	Power adapter connection (12V/1A)
Video Output Interface	**Function Description**
HDMI Interface	Comply with HDMI1.4 standard 30fps@4K or 30fps@1080P
WLAN Interface	Connecting 5G WLAN adapter (USB2.0 slot) in AP/STA mode
USB Video Interface	Connecting USB Video port of PC for video transfer in MJPEG format
Other Function	**Function Description**
Video Saving	Video format: 8MP (3840*2160) H264/H265 encoded MP4 file Video saving frame rate: 30fps in SD card or USB flash drive
Image Capture	8MP (3840*2160) 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	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
Video /Image Operation	Zoom In/Zoom Out (Up to 10X), Mirror/Flip, Color/Gray, Freeze, Cross Line, Overlay , Auto Focus, Compare (Comparison between real time video and images in SD card/ 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 / Thailand / French / German / Japanese / Italian / Russian
Software Environment under WLAN/USB Video Output	
White Balance	Automatic/Manual/ROI
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
	Display: 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

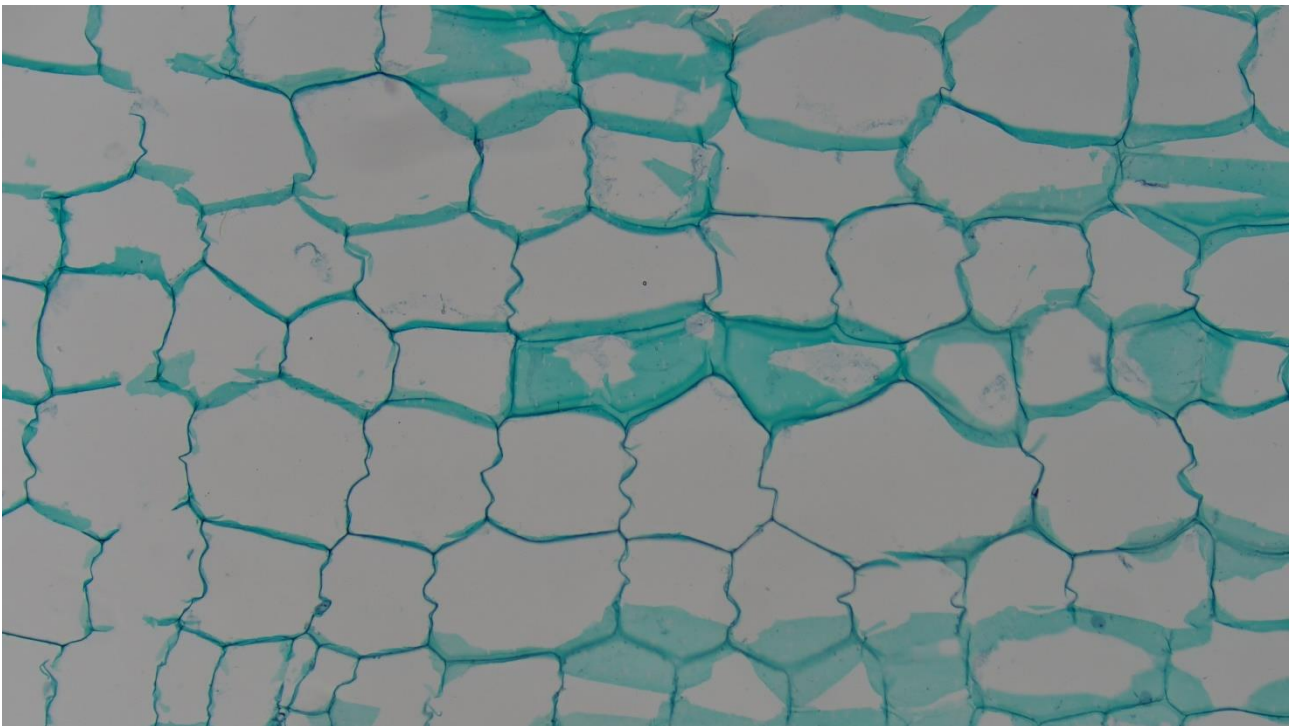## Dimension

Dimension of BWHC2-4KAF8MPA

Packing Information

BWHC2-4KAF8MPA Camera Packing Information

	Standard Packing List
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A	Gift box : L:25.5cm W:17.0cm H:9.0cm (1pcs, 1.48Kg/ box)
B	BWHC2-4KAF8MPA Camera
C	Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 1A American standard: Model: POWER-U-12V1A(MSA-C1000IC12.0-12W-US): UL/CE/FCC European standard: Model: POWER-E-12V1A(MSA-C10001C12.0-12W-DE): UL/CE/FCC EMI standard: FCC Part 15 Subpart B EMS standard: EN61000-4-2,3,4,5,6
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	C-Mount to Dia.23.2mm Eyepiece Tube (Please choose 1 of them for your microscope)	BCN2A-0.37× BCN2A-0.5× BCN2A-0.75× BCN2A-1×
J	Fixed lens adapter	C-Mount to Dia.23.2mm Eyepiece Tube (Please choose 1 of them for your microscope)	BCN2F-0.37× BCN2F-0.5×

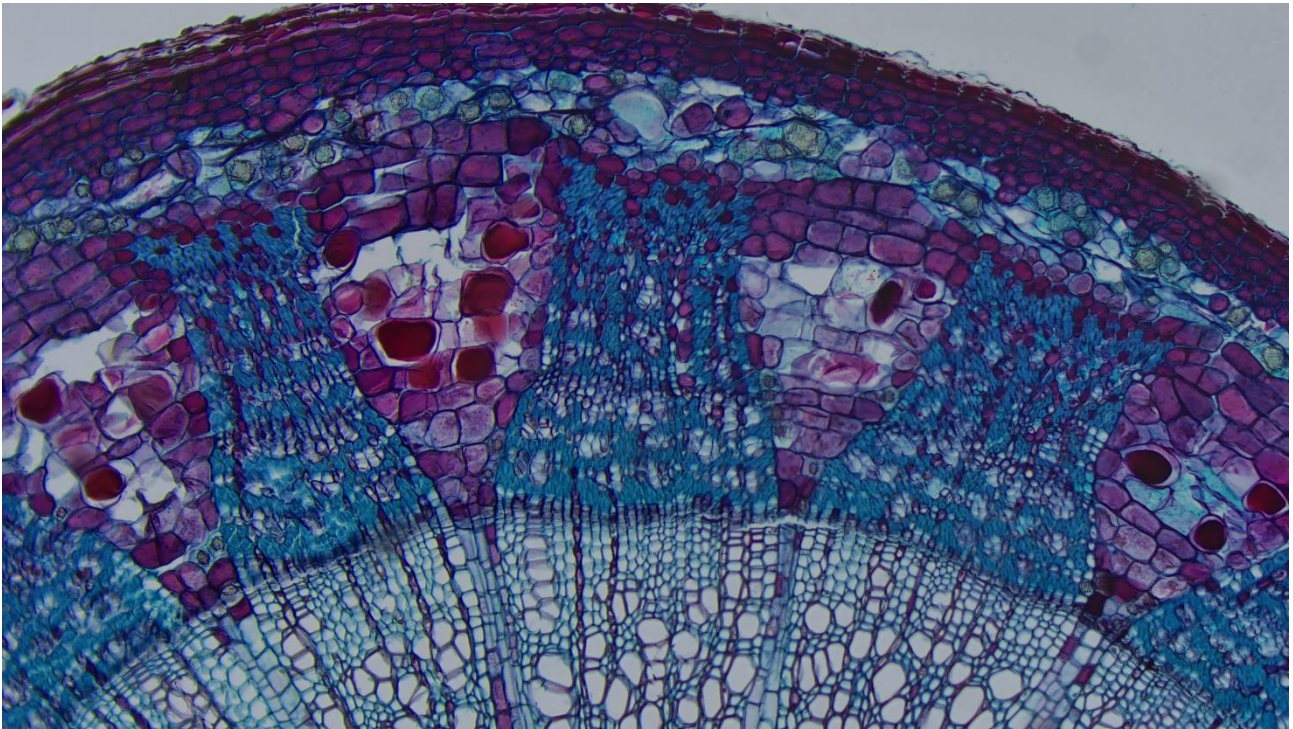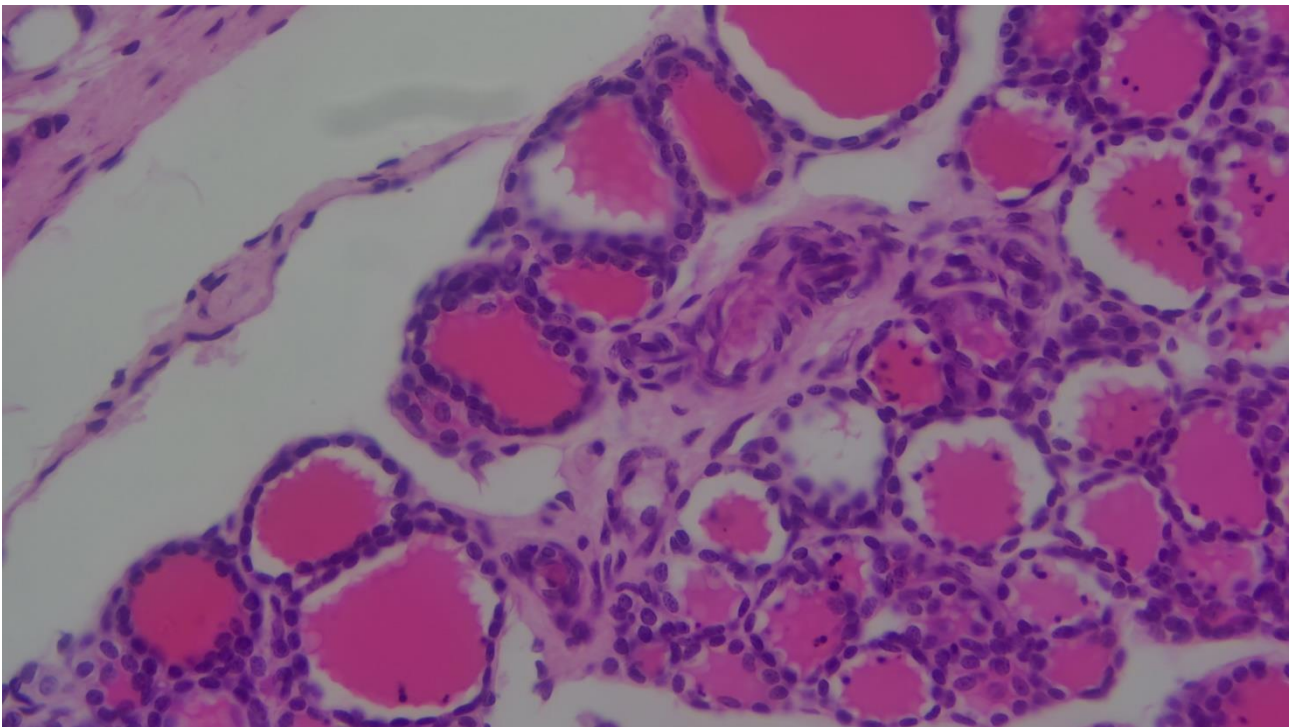|			BCN2F-0.75×
			BCN2F-1×
	Note: For I and J optional items, please specify your camera type (C-mount, microscope camera or telescope camera), our engineer will help you to determine the right microscope or telescope camera adapter for your application;		
K	108015(Dia.23.2mm to 30.0mm Ring)/Adapter 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.)
N	USB flash drive		
O	USB WLAN adapter (In WLAN mode, a USB WLAN adapter is required to operate the camera), different models have different shapes		

Sample Images

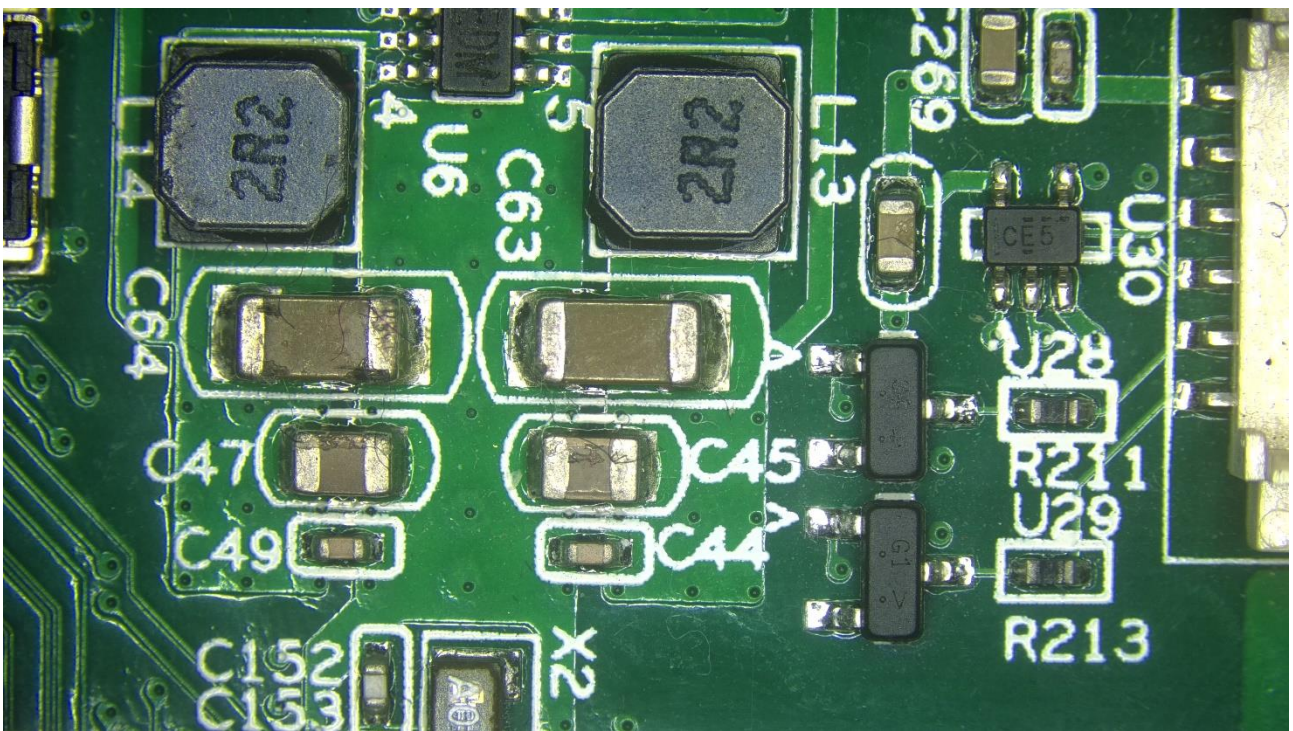Cucurbit Stem.L.S. Captured with BWHC2-4KAF8MPA

Two Year Tilia Stem.C.S. Captured with BWHC2-4KAF8MPA

Simple Cuboidal Epithelium.Sec. Captured with BWHC2-4KAF8MPA

BestScope

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Circuit Board Captured with BWHC2-4KAF8MPA