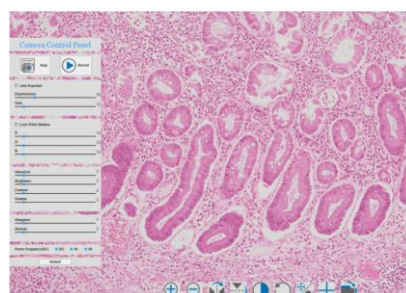
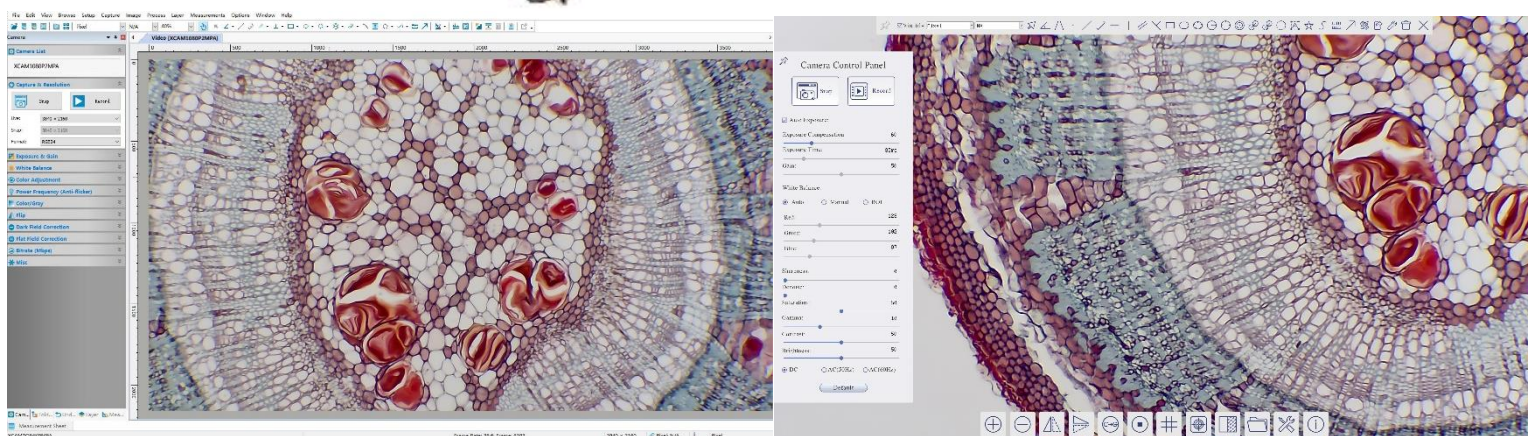


# A59.2222

**HDMI+USB+SD Digital Camera, 2.0M~8.0M,  
Mouse Measure**





## A59.2222 HDMI+USB+SD Digital Camera, 2.0M~8.0M, Mouse Measure

A59.2222 series camera is the next-generation live-view imaging-system with 1080P resolution(Video) at 60/30 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.

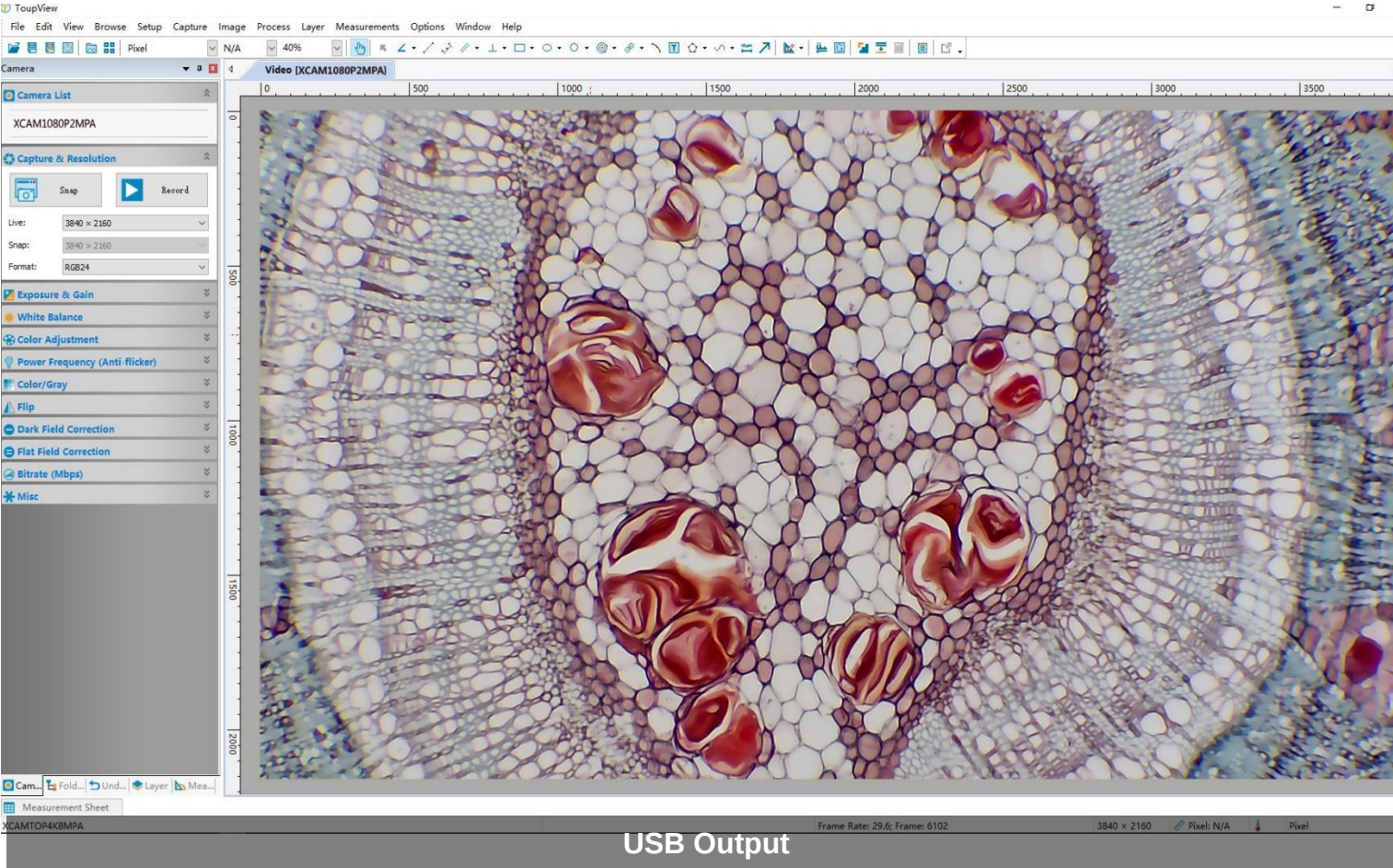
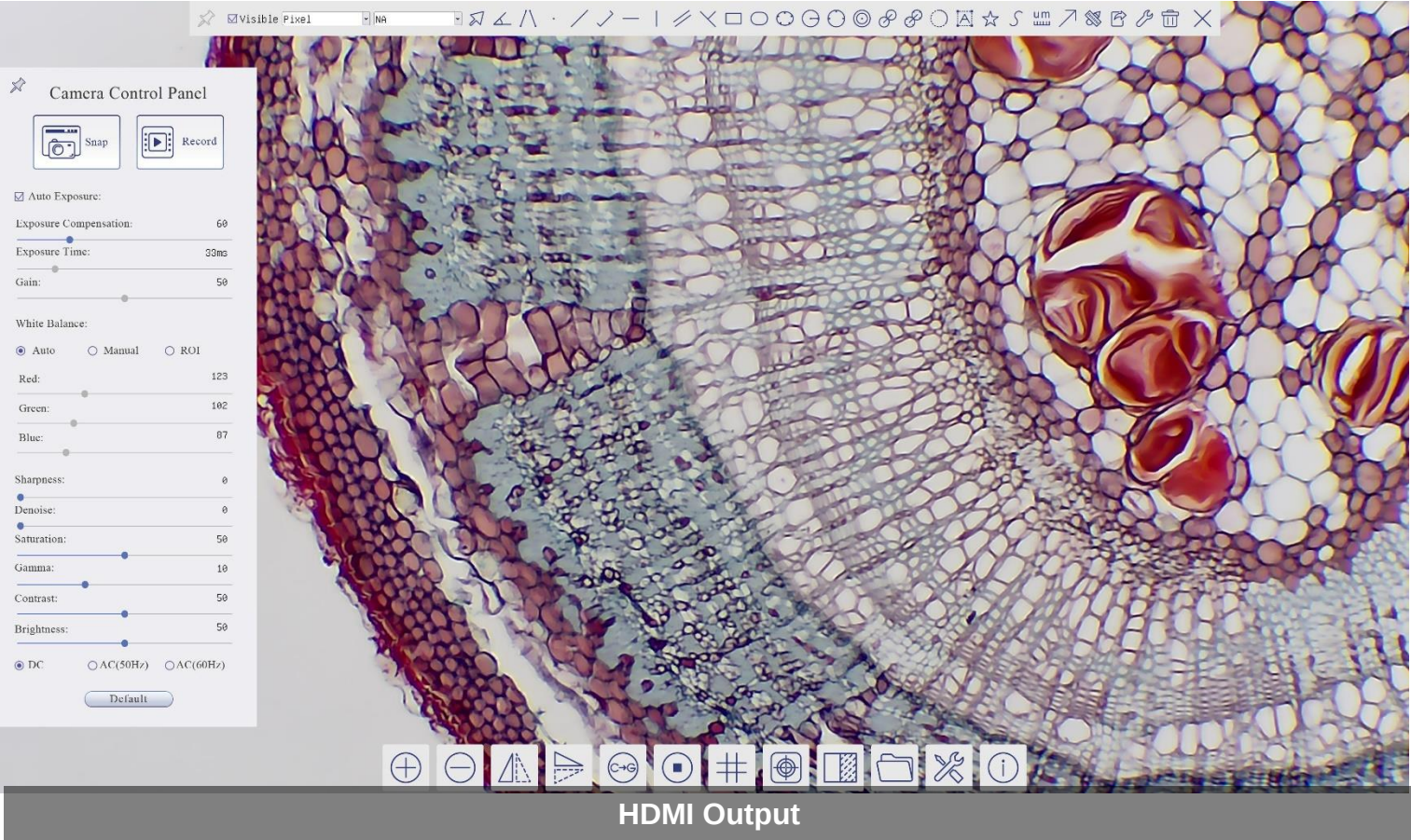
The camera uses a standard C-mount interface for maximum compatibility with various microscopy-systems. It can be used as a stand-alone recorder when used with an HDMI monitor or television, or live-streamed to a PC via USB for image-capture and video-recording.

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.

A59.2222 series camera is intended to be used for the acquisition of digital images from the stereo microscope, biological microscope or online interactive teaching.

# A59.2222 Connections Image



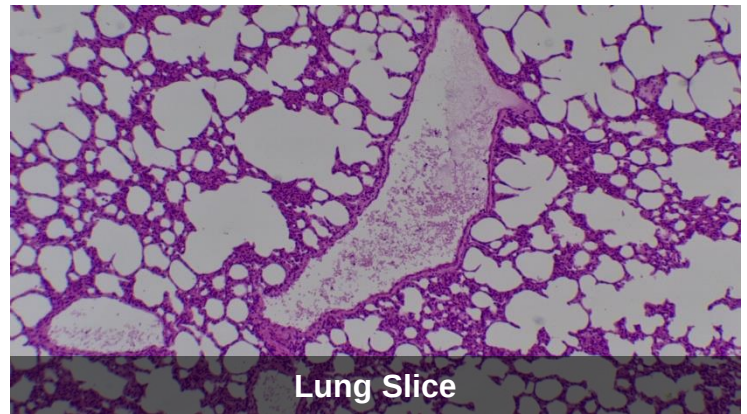
## A59.2222 Features & Sample Pictures



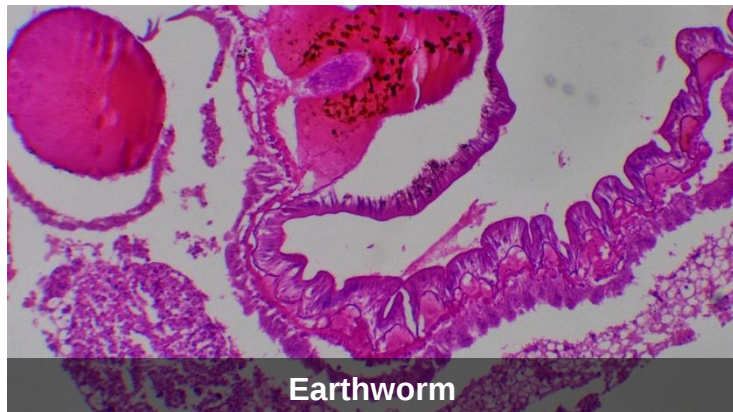
- HDMI+USB+SD Digital Camera With Sony Exmor CMOS Sensors Resloution 1080p/2.0M~8.0M
- Built-in HDMI Mouse Control Panel For Image Capture & Video Record To SD Card
- Built-in Toolbar Including Zoom, Mirror, Comparison, Freeze, Cross, Browser Functions
- Ultra-Fine TM Color Engine With Perfect Color Reproduction Capability (USB)
- Advanced Video & Image Processing Software Image View, Support SDK For Win/Linux/Mac/Android



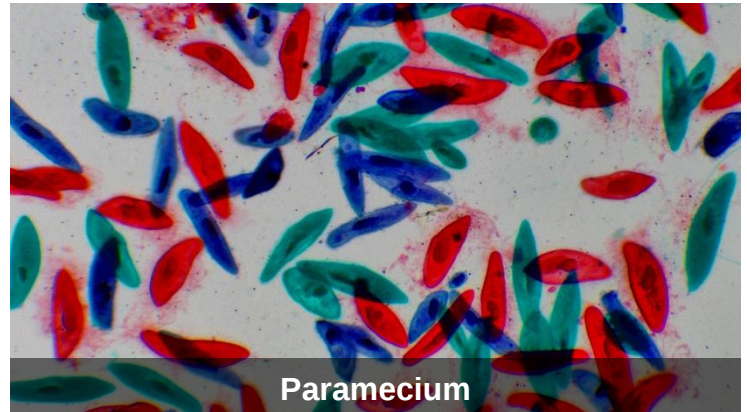
Cotton Stigma Cross Cutting



Lung Slice



Earthworm



Paramecium

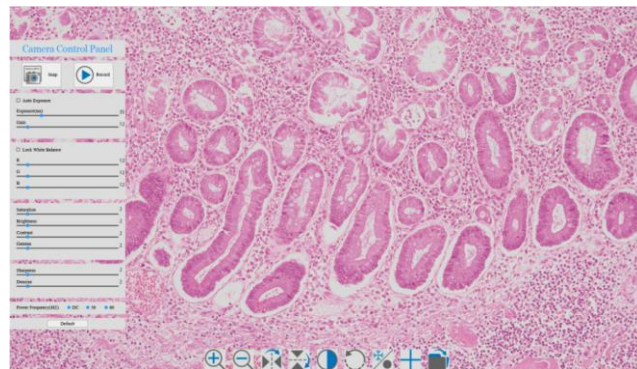


Pumpkin Stem



Sunflower Stem CS

# A59.2222 Specification



## A59.2222 HDMI+USB+SD Digital Camera, 2.0M~8.0M, Mouse Measure

| Cata. No. | Sensor & Size(mm)                   | Pixel(μm) | G Sensitivity     | FPS/Resolution     | Binning | Exposure       |
|-----------|-------------------------------------|-----------|-------------------|--------------------|---------|----------------|
|           |                                     |           | Dark Signal       |                    |         |                |
| 2MPA      | Sony IMX385(C)<br>1/2"(7.2x4.05)    | 3.75x3.75 | 1175mv with 1/30s | 60@1920*1080(HDMI) | 1x1     | 0.04ms~1000 ms |
|           |                                     |           | 0.15mv with 1/30s | 50@1920*1080(USB)  |         |                |
| 8MPB      | Sony IMX415(C)<br>1/2.8"(5.57x3.13) | 1.45x1.45 | 300mv with 1/30s  | 30@1920*1080(HDMI) | 1x1     | 0.04ms~1000 ms |
|           |                                     |           | 0.13mv with 1/30s | 30@3840*2160(USB)  |         |                |

Remark: C - Color, M-Monocolor, GS-GS Shutter

### INTERFACE & BUTTON FUNCTION

|           |                                                                                                                |
|-----------|----------------------------------------------------------------------------------------------------------------|
| USB Mouse | Connect USB mouse for easy operation on HDMI menu                                                              |
| USB Video | Connect PC or other host device to realize video image transmission                                            |
| HDMI      | Comply with HDMI1.4 standard. 1080P format video output for standard monitor, Mouse Control & Measure Function |
| DC12V     | Power adapter connection (12V/1A)                                                                              |
| SD        | Comply with SDIO3.0 standard and SD card could be inserted for video and images saving                         |
| LED       | LED status indicator                                                                                           |
| ON/OFF    | Power On/Off Switch                                                                                            |

### VIDEO OUTPUT INTERFACE

|                     |                                                                       |
|---------------------|-----------------------------------------------------------------------|
| HDMI Interface      | Comply with HDMI1.4 standard; 60fps@1080P                             |
| USB Video Interface | Connecting USB Video port of PC for video transfer MJPEG format video |

### USB OUTPUT

|                    |                                                                                                                                                                                                                                                     |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video Saving       | Video format: 1920*1080 H264/H265 encoded MP4 file;                                                                                                                                                                                                 |
|                    | Video saving frame rate: 60fps(2MPA);30fps(8MPB)                                                                                                                                                                                                    |
| Image Capture      | 2M (1920*2160, 2MPA) JPEG/TIFF image in SD card;                                                                                                                                                                                                    |
|                    | 8M (3840*2160, 8MPB) JPEG/TIFF image in SD card;                                                                                                                                                                                                    |
| 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 |
| Image Operation    | Zoom In/Zoom Out, Mirror/Flip, Freeze, Cross Line, Overlay, Embedded Files Browser, Video Playback, Measurement Function                                                                                                                            |
| Embedded RTC       | To support accurate time on board (Optional)                                                                                                                                                                                                        |
| Restore            | Restore camera parameters to Default Factory Settings                                                                                                                                                                                               |
| Multiple Language  | English, Simplified Chinese, Traditional Chinese, Korean, Thailand, French, German, Japanese, Italian, Russian                                                                                                                                      |

# A59.2222 Specification

## SOFTWARE ENVIRONMENT UNDER LAN/WLAN/USB VIDEO OUTPUT

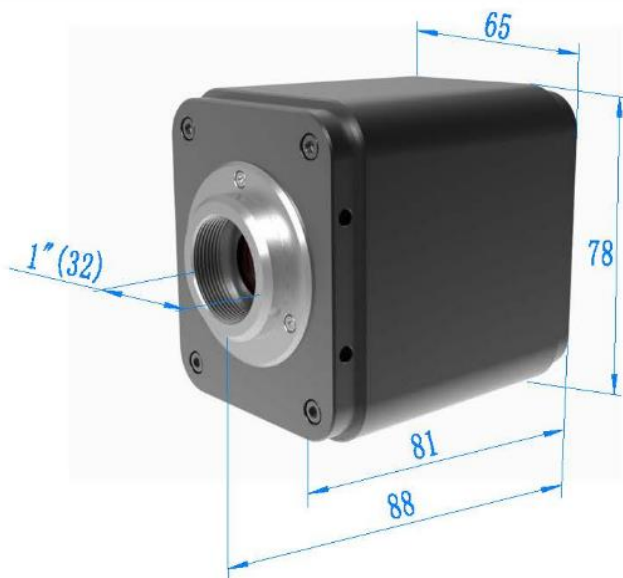
|                     |                                                                                                              |
|---------------------|--------------------------------------------------------------------------------------------------------------|
| White Balance       | Auto White Balance                                                                                           |
| Color Technique     | Ultra-Fine Color Engine                                                                                      |
| Capture/Control SDK | Win/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 /11(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 | -10 °C~ 50 °C     |
| Storage Temperature   | -20 °C~ 60 °C     |
| Operating Humidity    | 30~80%RH          |
| Storage Humidity      | 10~60%RH          |
| Power Supply          | DC 12V/2A Adaptor |

## Dimension of A59.2222 Series Camera

A59.2222 series camera body, made from tough, CNC aluminium alloy, ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT to protect the camera sensor. No moving parts included. This design ensures a rugged, robust solution with an increased lifespan when compared to other industrial camera solutions



## How To Choose C-Mount According to Digital Camera Sensor Size

To choose camera adapter (C-Mount) or eyepiece adapter correctly, please refer to the quick table "Digital Camera Sensor Size & C-Mount". Choose the adapter's (C-Mount) magnification according to your camera's sensor size, you can get the best view field under camera watching.

Or you can specify the cameras choosed, and its usage (for Microscope or for Telescope), Opto-Edu sales manager will assist you to choose adapters correctly.

### Digital Camera Sensor Size & C-Mout

| Sensor Size | Diagonal Size | C Mount Compitable |
|-------------|---------------|--------------------|
| 1"          | 16mm          | 1.0x               |
| 2/3"        | 10.6mm        | 0.75x/0.63x        |
| 1/1.8"      | 8.8mm         | 0.5x/0.55x         |
| 1/2"        | 8mm           | 0.5x               |
| 1/2.5"      | 6.4mm         | 0.5x               |
| 1/2.8"      | 5.7mm         | 0.5x               |
| 1/3"        | 5.3mm         | 0.3x               |
| 1/4"        | 4mm           | 0.3x               |

Remark: 1"=16mm For Digital Camera's Diagonal Size

# A59.2222 Packing List



## Packing List of A59.2222 Series Camera

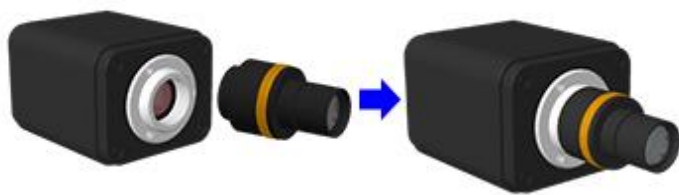
### Standard Outfit

|   |                                                                                                                                                                                                                                                                                          |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | Gift box : L:25.5cm W:17.0cm H:9.0cm (1pcs, 1.48Kg/ box)                                                                                                                                                                                                                                 |
| B | A59.2222 Digital Camera                                                                                                                                                                                                                                                                  |
| C | Power Adaptor: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 1A<br>American standard: POWER-U-12V1A(MSA-C1000IC12.0-12W-US): UL/CE/FCC<br>European standard: POWER-E-12V1A(MSA-C1000IC12.0-12W-DE): UL/CE/FCC<br>EMI standard: FCC Part 15 Subpart B<br>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 | Focus Adjustable Eyepiece Adapter                                      | For Microscope                  | 0.37x, C-Mount to Dia.23.2mm  |  | A55.2202-A37  |
|   |                                                                        |                                 | 0.50x, C-Mount to Dia.23.2mm  |  | A55.2202-A50  |
|   |                                                                        |                                 | 0.75x, C-Mount to Dia.23.2mm  |  | A55.2202-A75  |
|   |                                                                        | For Telescope                   | 0.37x, C-Mount to Dia.31.75mm |  | A55.2204-A37  |
|   |                                                                        |                                 | 0.50x, C-Mount to Dia.31.75mm |  | A55.2204-A50  |
|   |                                                                        |                                 | 0.75x, C-Mount to Dia.31.75mm |  | A55.2204-A75  |
| J | Focus Fixed Eyepiece Adapter                                           | For Microscope                  | 0.37x, C-Mount to Dia.23.2mm  |  | A55.2202-F37  |
|   |                                                                        |                                 | 0.50x, C-Mount to Dia.23.2mm  |  | A55.2202-F50  |
|   |                                                                        |                                 | 0.75x, C-Mount to Dia.23.2mm  |  | A55.2202-F75  |
|   |                                                                        | For Telescope                   | 0.37x, C-Mount to Dia.31.75mm |  | A55.2204-F37  |
|   |                                                                        |                                 | 0.50x, C-Mount to Dia.31.75mm |  | A55.2204-F50  |
|   |                                                                        |                                 | 0.75x, C-Mount to Dia.31.75mm |  | A55.2204-F75  |
| K | Adaptor Rings Dia.23.2mm to 30.0mm For 30.0mm Microscope Eyepiece Tube |                                 |                               |  | A55.2203-30   |
| L | Adaptor Rings Dia.23.2mm to 30.5mm For 30.5mm Microscope Eyepiece Tube |                                 |                               |  | A55.2203-30.5 |
| M | Calibration Stage Micrometer                                           | X=0.01mm/100Div.                |                               |  |               |
|   |                                                                        | X,Y=0.01mm/100Div               |                               |                                                                                       |               |
|   |                                                                        | X=0.01mm/100Div., 0.10mm/100Div |                               |                                                                                       |               |

# Camera Connect To Microscope



**A55.2002**  
C-Mount to 23.2mm Adapter  
For Microscope

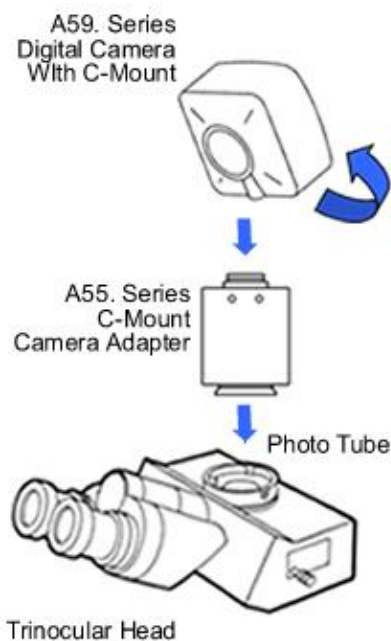


**A55.2004**  
C-Mount to 31.75mm Adapter  
For Telescope

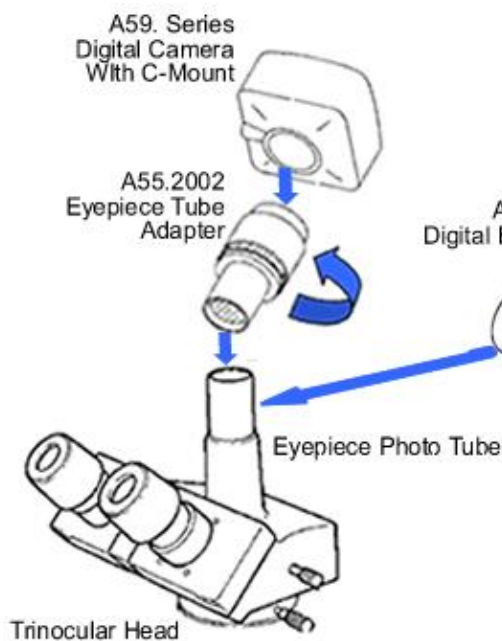
## OPTO-EDU

## How Camera Connect To Microscope

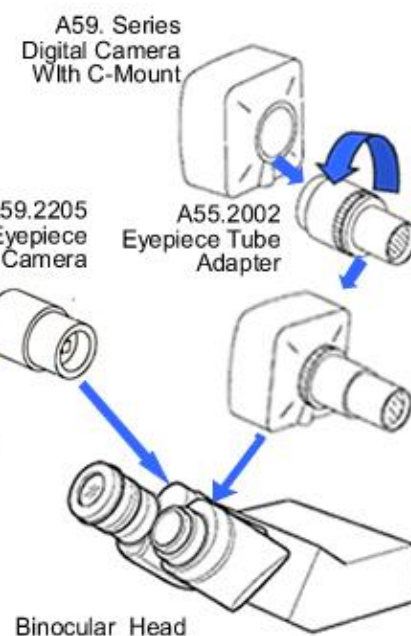
### 1. To Trinocular Microscope On Straight Photo Tube



### 2. To Trinocular Microscope On Eyepiece Photo Tube



### 3. To Binocular Microscope On Eyepiece Tube



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MICROSCOPE IS OUR FOCUS

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