

XCAMLITE4K Series Camera Help Manual



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1 The Application of the XCAMLITE4K Series Camera



Figure 1 The XCAMLITE4K Series Camera

The XCAMLITE4K series camera is intended to be used for the acquisition of digital images from the stereo microscope and biological microscope. The basic characteristic is listed as below:

- Sony Exmor back illuminated CMOS sensor
- 4K HDMI/USB multiple video outputs
- 4K/1080P auto switching according to the display resolution
- SD card 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
- ToupLite software for MAC

2 XCAMLITE4K Series Camera's Datasheet and Functions(2)

| 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 |



Figure 2 Available Ports on the Back Panel of the Camera Body

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| 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; |
| Other Function | 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. |
| 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 Operations | Zoom In/Zoom Out, Mirror/Flip, Freeze, Cross Line, Overlay, 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 / Russian |
| Software Environment under 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 / 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 (in Centidegree) | -10°~ 50° |
| Storage Temperature (in Centidegree) | -20°~ 60° |
| Operating Humidity | 30~80%RH |
| Storage Humidity | 10~60%RH |

3 Dimension of XCAMLITE4K Series



Figure 3 Dimension of XCAMLITE4K Series

4 XCAMLITE4K Series Camera Packing Information(TBD)



Figure 4 The XCAMLITE4K Series Camera Packing Information

| Standard Packing List | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|---|-------------|------------|--------------------|----------|-----|----|--------------------|--------|--|-------------|--|-------------|--|--------------------|--|--------------------|--------|-------------|--|--|-------------|--|--------------------|--|---------------|--------------------|-----------------|-----|------|-----|-------|----|------|---------------|-------------------------------------|---------------------------------|--|--|--|--|--|----------|
| A | Gift box : L:25.5cm W:17.0cm H:9.0cm (1pcs,1.48kg/ box) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | XCAMLITE4K series camera | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | <table border="0"> <tr> <td>Power Adapter:</td> <td>Input:</td> <td>AC</td> <td>100~240V</td> <td>50Hz/60Hz,</td> <td>Output:</td> <td>DC</td> <td>12V</td> <td>1A</td> </tr> <tr> <td>American standard:</td> <td>Model:</td> <td></td> <td>GS12U12-P11</td> <td></td> <td>12W/12V/1A:</td> <td></td> <td>UL/CUL/BSMI/CB/FCC</td> <td></td> </tr> <tr> <td>European standard:</td> <td>Model:</td> <td>GS12E12-P11</td> <td></td> <td></td> <td>12W/12V/1A;</td> <td></td> <td>TUV(GS)/CB/CE/ROHS</td> <td></td> </tr> <tr> <td>EMI Standard:</td> <td>EN55022,EN61204-3,</td> <td>EN61000-3-2,-3,</td> <td>FCC</td> <td>Part</td> <td>152</td> <td>class</td> <td>B,</td> <td>BSMI</td> </tr> <tr> <td>EMS Standard:</td> <td>EN61000-4-2,3,4,5,6,8,11,EN61204-3,</td> <td colspan="2">Class A Light Industry Standard</td> <td></td> <td></td> <td></td> <td></td> <td>CNS14338</td> </tr> </table> | Power Adapter: | Input: | AC | 100~240V | 50Hz/60Hz, | Output: | DC | 12V | 1A | American standard: | Model: | | GS12U12-P11 | | 12W/12V/1A: | | UL/CUL/BSMI/CB/FCC | | European standard: | 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 | EMS Standard: | EN61000-4-2,3,4,5,6,8,11,EN61204-3, | Class A Light Industry Standard | | | | | | CNS14338 |
| Power Adapter: | Input: | AC | 100~240V | 50Hz/60Hz, | Output: | DC | 12V | 1A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| American standard: | Model: | | GS12U12-P11 | | 12W/12V/1A: | | UL/CUL/BSMI/CB/FCC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| European standard: | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMS Standard: | EN61000-4-2,3,4,5,6,8,11,EN61204-3, | Class A Light Industry Standard | | | | | | CNS14338 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | <table border="0"> <tr> <td>C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)</td> <td>108001/AMA037 108002/AMA050 108003/AMA075</td> </tr> </table> | C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope) | 108001/AMA037 108002/AMA050 108003/AMA075 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope) | 108001/AMA037 108002/AMA050 108003/AMA075 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | Fixed lens adapter | <table border="0"> <tr> <td>C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)</td> <td>108005/FMA037 108006/FMA050 108007/FMA075</td> </tr> </table> | C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope) | 108005/FMA037 108006/FMA050 108007/FMA075 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C-Mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope) | 108005/FMA037 108006/FMA050 108007/FMA075 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Note: For I and J 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;</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | |
|----------|---|--|
| 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.) |

5 Extension of XCAMLITE4K Series Camera with Microscope 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 |  <p>XCAMLITE4K+AMAXXX(23.2mm Adapter)</p>  <p>XCAMLITE4K+FMAXXX(23.2mm Adapter)</p> |

6 Software and App

The software or the APP can be downloaded from the following link:

Windows: <https://www.touptekphotonics.com/download/>

Linux & macOS: <https://www.touptekphotonics.com/download/>

7 XCAMLITE4K Series Camera Application Configurations

You can use the XCAMLITE4K series camera in two different ways. Each application requires different hardware environment.

7.1 Camera Working Standalone with Built-in XCamView Software



Figure 5 XCAMLITE4K Series Camera with the HDMI Displayer

For this application, apart from the microscope, the user only needs an [XCAMLITE4K](#) series camera, an HDMI display, an HDMI cable, an SD card, a USB mouse and a power adapter that come with the camera. The steps to start the camera are listed as below:

- Connect the camera to a HDMI display using the HDMI cable;
- Insert the supplied USB mouse to the camera's USB port;
- Insert the supplied SD card into the [XCAMLITE4K](#) series camera SD card slot;
- Connect power adapter to the camera the and switch it on.;
- Switch on the display and view the video in the [XCamView](#) software. Move the mouse to the left, top or bottom of the [XCamView](#) UI, different control panel or UI will pop up and users could operate with the mouse at ease.

7.2 Connecting camera to the PC with USB port

For Windows user (Windows XP (32bit), Windows 7/8/10 (32/64 bit)), please use [ToupView](#).

For macOS and Linux user (macOS 10.10 or above or Linux distributions with kernel 2.6.27 or higher), please use [ToupLite](#).

The steps to start the camera are listed below:

- Install the [ToupView/ToupLite](#) on your PC;
- Connect power adapter to the camera the and switch it on. After starting the camera, plug one end of the USB cable into the USB 2.0 port of the [XCAMLITE4K](#) series camera, and plug the other end into the USB port of the PC;
- Open [ToupView/ToupLite](#) software. The [XCAMLITE4K](#) series camera will be recognized automatically by software. In [ToupView/ToupLite](#) software, select the corresponding [XCAMLITE4K](#) series camera by clicking the camera name in the camera list.

Note:

When the USB cable and the mouse are plugged into the camera at the same time, the USB cable is preferred and the mouse is not available; when the USB cable is unplugged, the mouse can be used normally.

8 Brief Introduction of XCAMLITE4K Series Camera's UI and Its Functions

8.1 XCamView UI

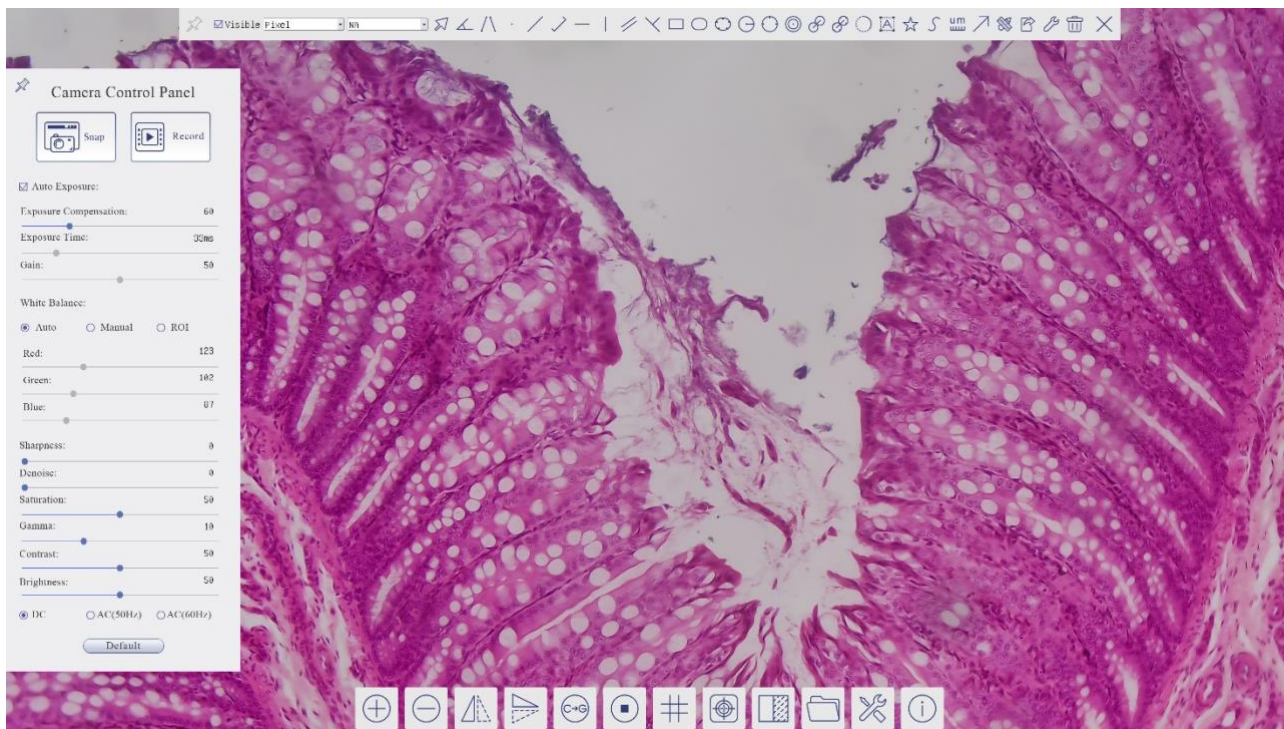





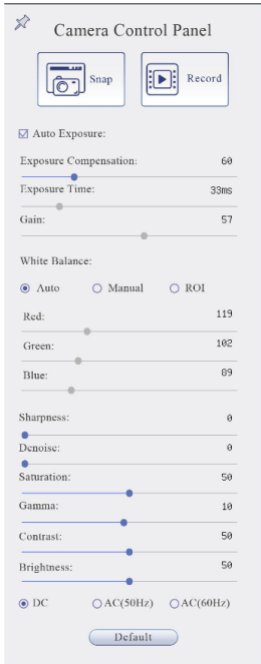


Figure 6 The XCAMLITE4K Series Camera Control GUI

| Notes | |
|-------|---|
| 1 | To show the Camera Control Panel , move your mouse to the left of the video window. See Sec.8.2 for details. |
| 2 | Move the mouse cursor to the top of the video window, a Measurement Toolbar will pop up for calibration and measurement operations. When user left-clicks the Float/Fixed button  on the Measurement Toolbar , the Measurement Toolbar will be fixed. In this case the Camera Control Panel will not pop up automatically even if users move mouse cursor to left side of the video window. Only when user left-clicks the  button on the Measurement Toolbar to exit from measuring operations will they be able to do other operations on the Camera Control Panel , or the Synthesis Camera Control Toolbar . During the measuring operations, when a specific measuring object is selected, an Object Location & Attributes Control Bar  will appear for changing location and properties of the selected object. See Sec.8.4 for details. |
| 3 | When users move mouse cursor to the bottom of the video window, the Synthesis Camera Control Toolbar will pop up automatically.  . See Sec.8.4 for details. |






8.2 The Camera Control Panel on the Left Side of the Video Window

The **Camera Control Panel** controls the camera to achieve the best video or image quality according to the specific applications; It will pop up automatically when the mouse cursor is moved to the left side of the video window (in measurement status, the **Camera Control Panel** will not pop up. The **Camera Control Panel** will only pop up when the measurement operations are finished or terminated while user’s cursor on the left edge of the video window). Left-clicking  button to achieve **Display/Auto Hide** switch of the **Camera Control Panel**.



| Camera Control Panel | Function | Function Description |
|--|---|--|
|  | Snap | Capture image and save it to the SD card |
| | Record | Record video and save it to the SD card |
| | Auto Exposure | When Auto Exposure is checked, the system will automatically adjust exposure time and gain according to the value of exposure compensation |
| | Exposure Compensation | Available when Auto Exposure is checked. Slide to left or right to adjust Exposure Compensation according to the current video brightness to achieve proper brightness value |
| | Exposure Time | Available when Auto Exposure is not checked. Slide to left or right to reduce or increase Exposure Time , adjusting brightness of the video |
| | Gain | Adjust Gain to reduce or increase brightness of video. The Noise will be reduced or increased accordingly |
| | Auto White Balance | White Balance adjustment according to the video continuously |
| | Manual White Balance | Adjust the Red or Blue slide bar to set the video White Balance . |
| | ROI White Balance | White Balance could be adjusted when the ROI region is changed according to content inside the ROI region. |
| | Red | Slide to left or right to decrease or increase the proportion of Red item in RGB on video |
| | Green | Slide to left or right to decrease or increase the proportion of Green item in RGB on video |
| | Blue | Slide to left or right to decrease or increase the proportion of Blue item in RGB on the video |
| | Sharpness | Adjust Sharpness level of the video |
| | Denoise | Slide left or right to Denoise the video |
| | Saturation | Adjust Saturation level of the video |
| | Gamma | Adjust Gamma level of the video. Slide to the right side to increase Gamma and to the left to decrease Gamma . |
| | Contrast | Adjust Contrast level of the video. Slide to the right side to increase Contrast and to the left to decrease Contrast . |
| | DC | For DC illumination, there will be no fluctuation in light source so no need for compensating light flickering |
| | AC(50HZ) | Check AC(50HZ) to eliminate flickering caused by 50Hz light source |
| | AC(60HZ) | Check AC(60HZ) to eliminate flickering caused by 60Hz light source |
| Default | Restore all the settings in the Camera Control Panel to default values | |

8.3 The Measurement Toolbar on Top of the Video Window



The **Measurement Toolbar** will pop up when moving mouse cursor to any place near the upper edge of the video window. Here is the introduction of the various functions on the **Measurement Toolbar**:


| Icon | Function |
|---|--|
|  | Float/ Fix switch of the Measurement Toolbar |
| <input checked="" type="checkbox"/> Visible | Show / Hide Measurement Objects |
| Nanometer (nm) | Select the desired Measurement Unit |
| 4X | Select Magnification for measurement after Calibration |
|  | Object Select |
|  | Angle |
|  | 4 Points Angle |
|  | Point |

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| | |
|---|---|
|  | Arbitrary Line |
|  | 3 Points Line |
|  | Horizontal Line |
|  | Vertical Line |
|  | 3 Points Vertical Line |
|  | Parallel |
|  | Rectangle |
|  | Ellipse |
|  | 5 Points Ellipse |
|  | Circle |
|  | 3 Points Circle |
|  | Annulus |
|  | Two Circles and its Center Distance |
|  | 3 Points Two Circles and its Center Distance |
|  | Arc |
|  | Text |
|  | Polygon |
|  | Curve |
|  | Scale Bar |
|  | Arrow |
|  | Execute Calibration to determine the corresponding relation between magnification and resolution, which will establish the corresponding relationship between Measurement Unit and the sensor pixel size. Calibration needs to be done with the help of a micrometer. For detailed steps of carrying out Calibration , please refer to ToupView help manual. |
|  | Export the Measurement information to CSV file(*.csv) |
|  | Measurement Setup |
|  | Delete all the measurement objects from |
|  | Exit from Measurement mode |
|  | When the measurement ends, left-click on a single measuring object and the Object Location & Properties Control Bar will show up. User could move the object by dragging the object with the mouse. But more accurate movement could be done with the control bar. The icons on the control bar mean Move Left , Move Right , Move Up , Move Down , Color Adjustment and Delete . |

Note:

1) When user left-clicks [Display/Hide](#) button  on the [Measurement Toolbar](#), the [Measurement Toolbar](#) will be fixed. In this case the [Camera Control Panel](#) will not pop up automatically even if moving the mouse cursor to the left edge of the video window. Only when user left-click the  button on the [Measurement Toolbar](#) to exit from the measurement mode will they be able to doing other operations with the [Camera Control Panel](#) or the [Synthesis Camera Control Toolbar](#).

2) When a specific [Measurement Object](#) is selected during the measurement operation, the [Object Location & Attributes Control Bar](#)  will appear for changing the object location and properties of the selected objects.

8.4 Icons and Functions of the Synthesis Camera Control Toolbar at the Bottom of the Video Window



| Icon | Function | Icon | Function |
|------|--------------------------------------|------|---|
| | Zoom In the video Window | | Zoom Out the video Window |
| | Horizontal Flip | | Vertical Flip |
| | Color/Gray | | Video Freeze |
| | Display Cross Line | | Overlay |
| | Compare Image with the current video | | Browse Images and Videos in the SD Card |
| | Settings | | Check the Version of XCamView |

The Setting function is relatively more complicated than the other functions. Here are more details about it:

8.4.1 Setting>Measurement

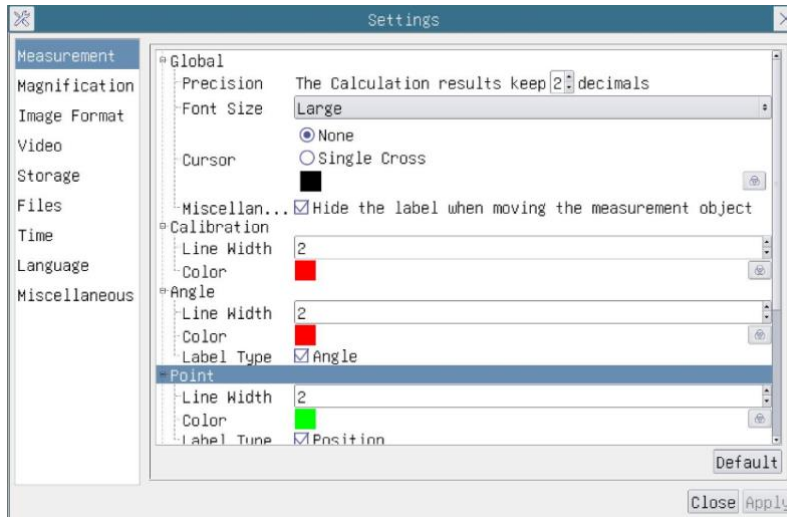


Figure 7 The Measurement Setup

| | | |
|--|------------|--|
| Global | Precision | Used to set the number of digits after the decimal point of the measurement result |
| Calibration | Line Width | Used for defining width of the lines for Calibration; |
| | Color | Used for defining color of the lines for Calibration; |
| | EndPoint | Type: Used for defining shape of the Endpoint of lines for calibration: Null means no Endpoint, rectangle means rectangle type of Endpoint. It makes alignment more easily; |
| Point, Angle, Line, Horizontal Line, Vertical Line, Rectangle, Circle, Ellipse, Annulus, Two Circles, Polygon, Curve | | |
| | | Left-click the along with the Measurement command mentioned above will unfold the corresponding attribute settings to set the individual property of the Measurement Objects. |

8.4.2 Setting>Magnification

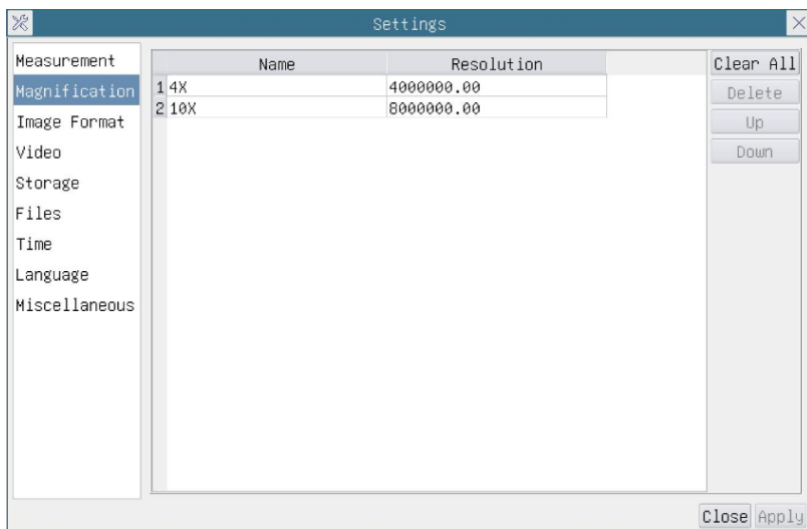


Figure 8 Comprehensive Magnification Calibration Settings Page

| | |
|-------------------|--|
| Name | The name of the Magnification , usually the Magnification of the objective of the microscope is used as the Magnification name when calibration, such as 4X, 10X, 40X, 100X, etc. Besides, other user-defined information could be added into the Magnification name too, for example, microscope model, operator name, etc. |
| Resolution | Pixels per meter. Image device like microscopes have high resolution value; |
| Clear All | Click the Clear All button will clear the calibrated Magnification ; |
| Delete | Click Delete to delete the selected Magnification ; |
| Up | Click Move Up to move up the selected Magnification ; |
| Down | Click Move Down to move the selected Magnification down; |

8.4.3 Settings>Image Format

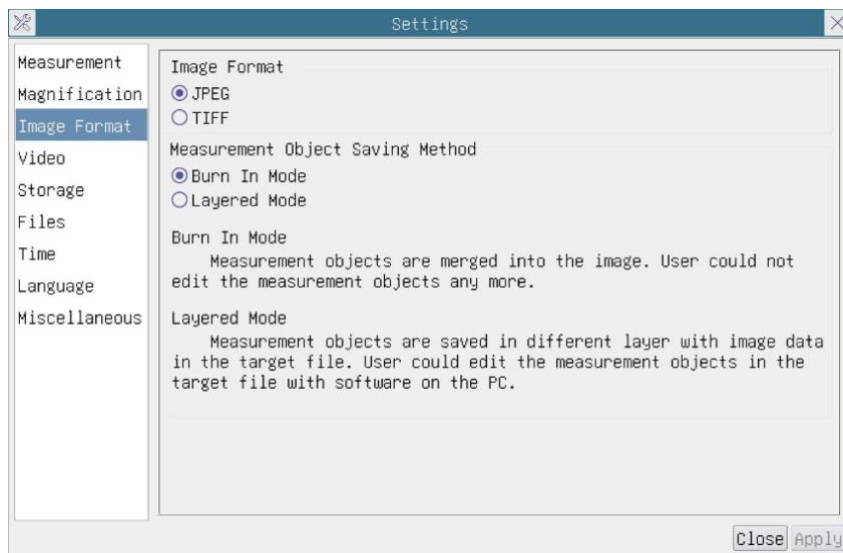


Figure 9 Comprehensive Image Format Settings Page

| | |
|---|--|
| Image Format | JPEG: The extension of JPEG file can get very high compression rate and display very rich and vivid images by removing redundant images and color data. In other words, it can get better image quality with the least disk space. If Measurement Objects are available, the Measurement Objects will be burned into the image and the Measurement Objects cannot be edited. TIFF: Tag Image File Format(TIFF) is a flexible bitmap format that is mainly used to store images including photos and artistic images. |
| Measurement Object Saving Method | Burn in Mode: The Measurement Objects are merged into the current image. User could not edit the Measurement Objects anymore. This mode is not reversible. Layered Mode: The Measurement Objects are saved in different layer with current image data in the target file. User could edit the Measurement Objects in the target file with some software on the PC. This mode is reversible. |

8.4.4 Settings>Video

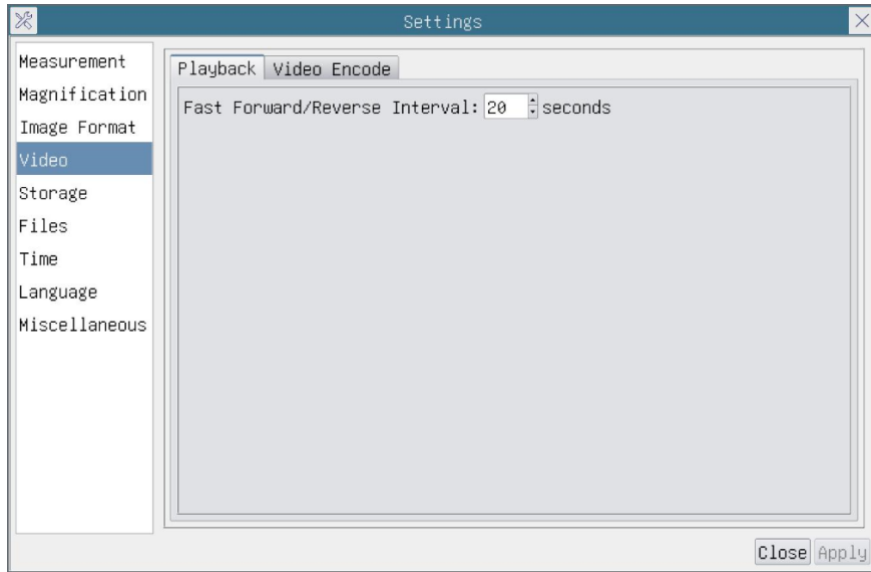


Figure 10 Comprehensive Setting of Video Settings Page-Playback

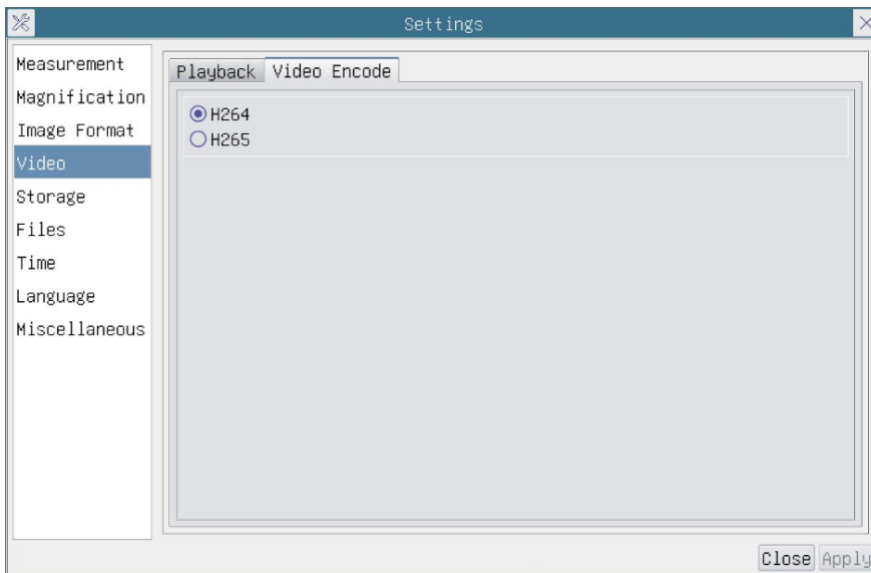


Figure 11 Comprehensive Setting of Video Settings Page-Video Encode

| | |
|---|---|
| Fast Forward/Reverse Interval | The time interval of the playback of video files. |
| Video Encode | You can choose H264 or H265 encoding. H265 encoding can significantly reduce encoding bandwidth and save storage space under the same encoding quality; |

8.4.5 Setting>Storage

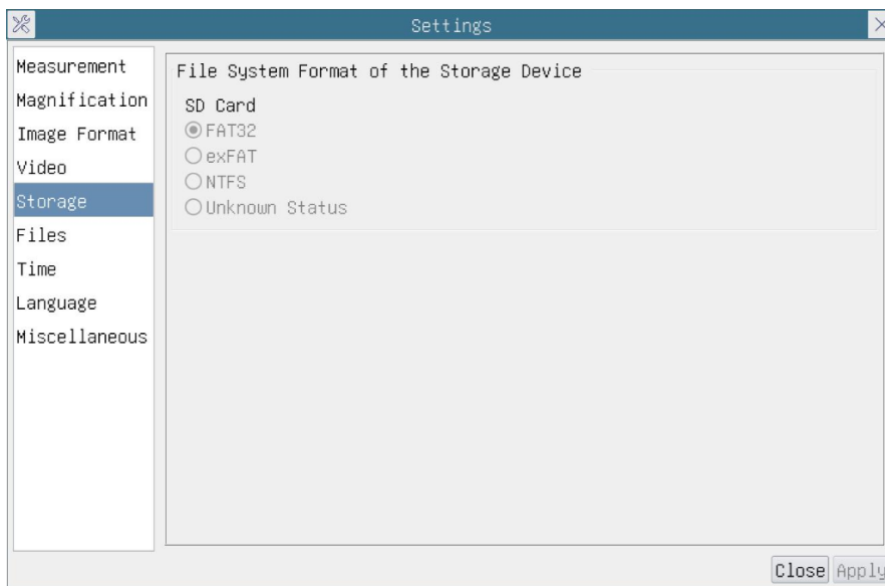


Figure 12 Comprehensive Setting of SD Card Setting Page

| | |
|--|---|
| Storage Device | SD Card: SD Card is only supported as the storage device. |
| File System Format of the Storage Device | List the file system format of the current storage device FAT32: The file system of SD Card is FAT32. The maximum video file size of single file is 4G Bytes; exFAT: The file system of SD Card is exFAT. The maximum video file size of single file is 4G Bytes; NTFS: The file system of SD Card is NTFS. The maximum video file size of single file is 4G Bytes. Use PC to format the SD Card and switch between FAT32, exFat and NTFS. Unknown Status: SD Card not detected or the file system is not identified; |

8.4.6 Setting>Files

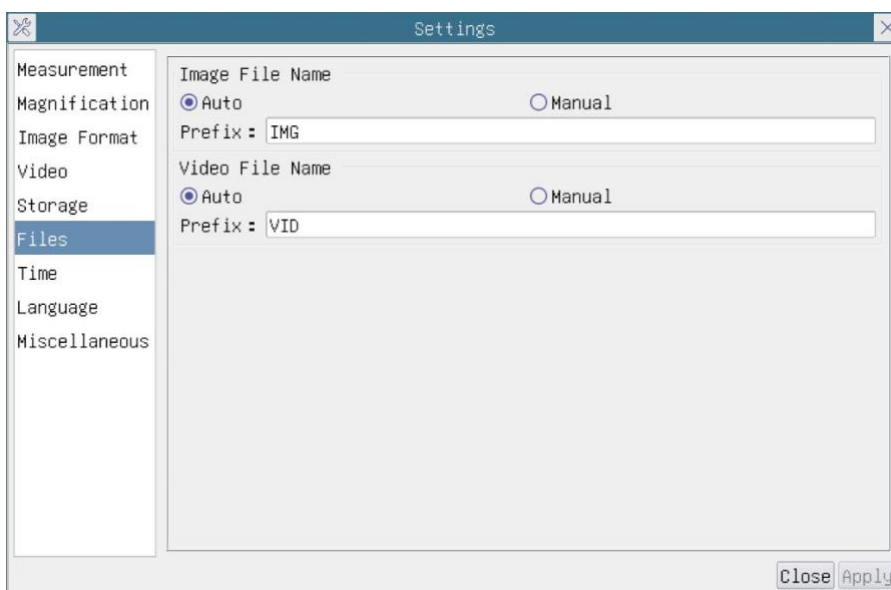


Figure 13 Comprehensive Setting of Files Settings Page

| | |
|-----------------|---|
| Image File Name | Auto: The image files will be saved automatically with the specified prefix. Manual: Users has to specify the file name before image saving. |
| Video File Name | Auto: The video file will be saved automatically with the specified prefix. Manual: Users has to specify the Video File Name before video recording. |

8.4.7 Setting>Time

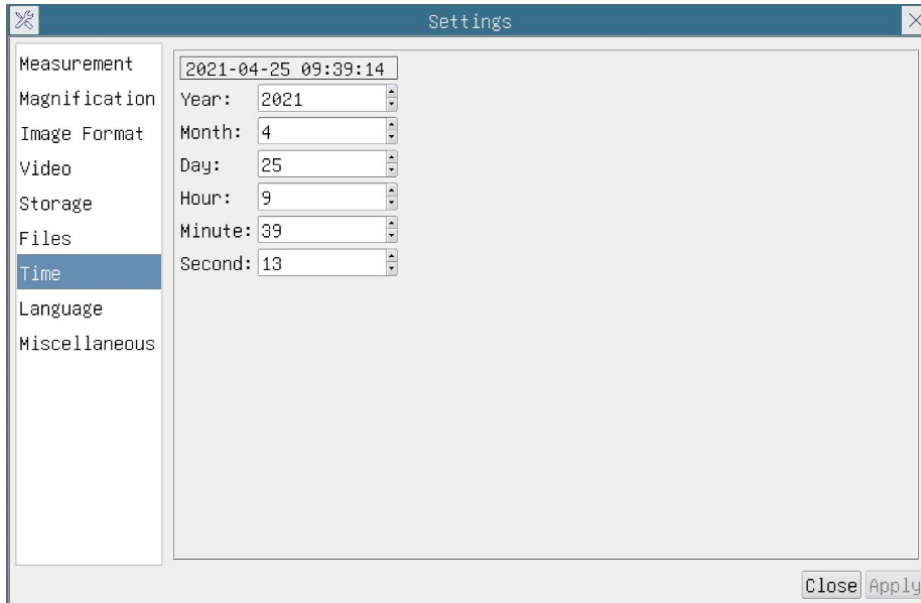


Figure 14 Time Setting

| | |
|------|--|
| Time | User can set Year , Month , Day , Hour , Minute and Second in this page. |
|------|--|

8.4.8 Setting>Language

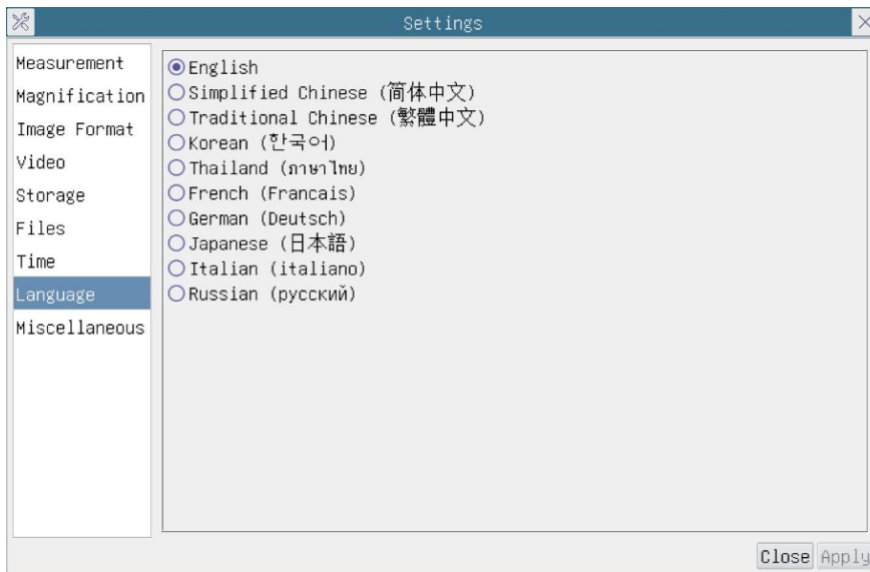


Figure 15 Comprehensive Setting of Language Selection Setting Page

| | |
|-------------------------------------|---|
| English | Set language of the whole software into English ; |
| Simplified Chinese | Set language of the whole software into Simplified Chinese ; |
| Traditional Chinese | Set language of the whole software into Traditional Chinese ; |
| Korean | Set language of the whole software into Korean ; |
| Thailand | Set language of the whole software into Thailand ; |
| French | Set language of the whole software into French ; |
| German | Set language of the whole software into German ; |
| Japanese | Set language of the whole software into Japanese ; |
| Italian | Set language of the whole software into Italian ; |
| Russian | Set language of the whole software into Russian ; |

8.4.9 Comprehensive Miscellaneous Settings Page

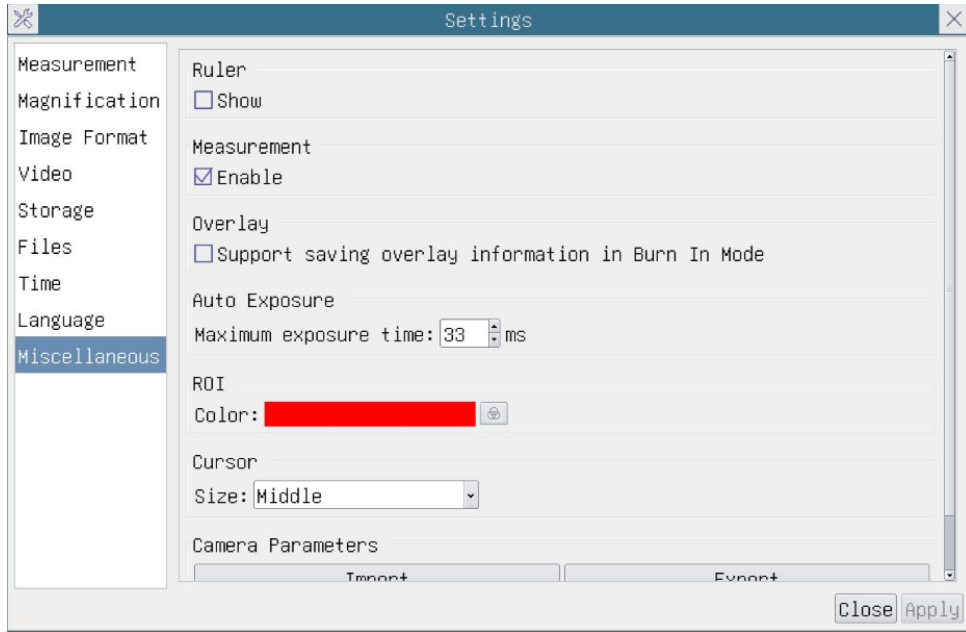


Figure 16 Comprehensive Miscellaneous Settings Page

| | |
|---|--|
| Ruler | Select to display the Ruler in the video window, or not to display the Ruler ; |
| Measurement | Select to display the Measurement toolbar in the video window, otherwise, the Measurement toolbar will not be displayed; |
| Overlay | Select to support saving graphics Overlay information in fusion mode, and not to save graphics Overlay information in fusion mode; |
| Auto Exposure | The maximum exposure time during auto exposure process could be specified. Setting this item to a lower value could guarantee a faster frame rate during Auto Exposure ; |
| ROI Color | Choosing the ROI rectangle line color ; |
| Camera Parameters Import | Import the Camera Parameters from the SD card to use the previously exported Camera Parameters ; |
| Camera Parameters Export | Export the Camera Parameters to the SD card to use the previously exported Camera Parameters ; |
| Reset to factory defaults | Restore camera parameters to its factory status; |

9 Sample Photos Captured with XCAMLITE4K Series Camera

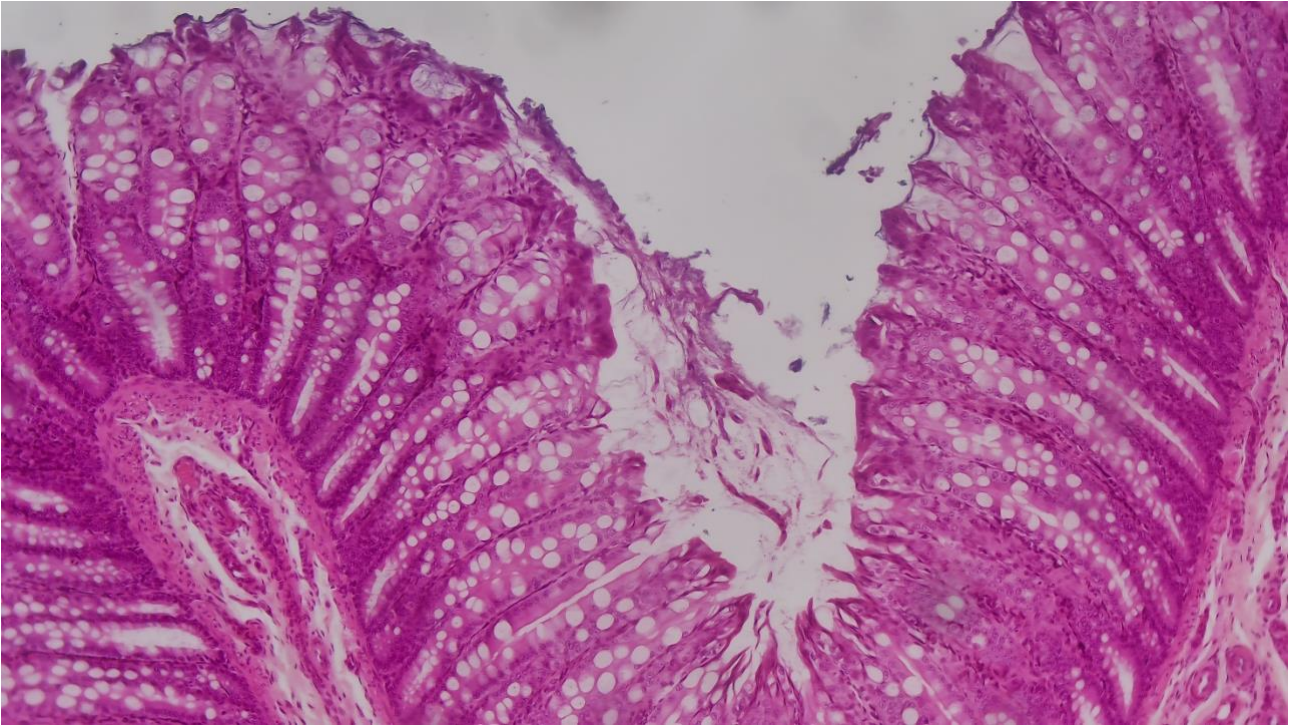


Figure 17 Large Intestine Captured with XCAMLITE4K8MPA

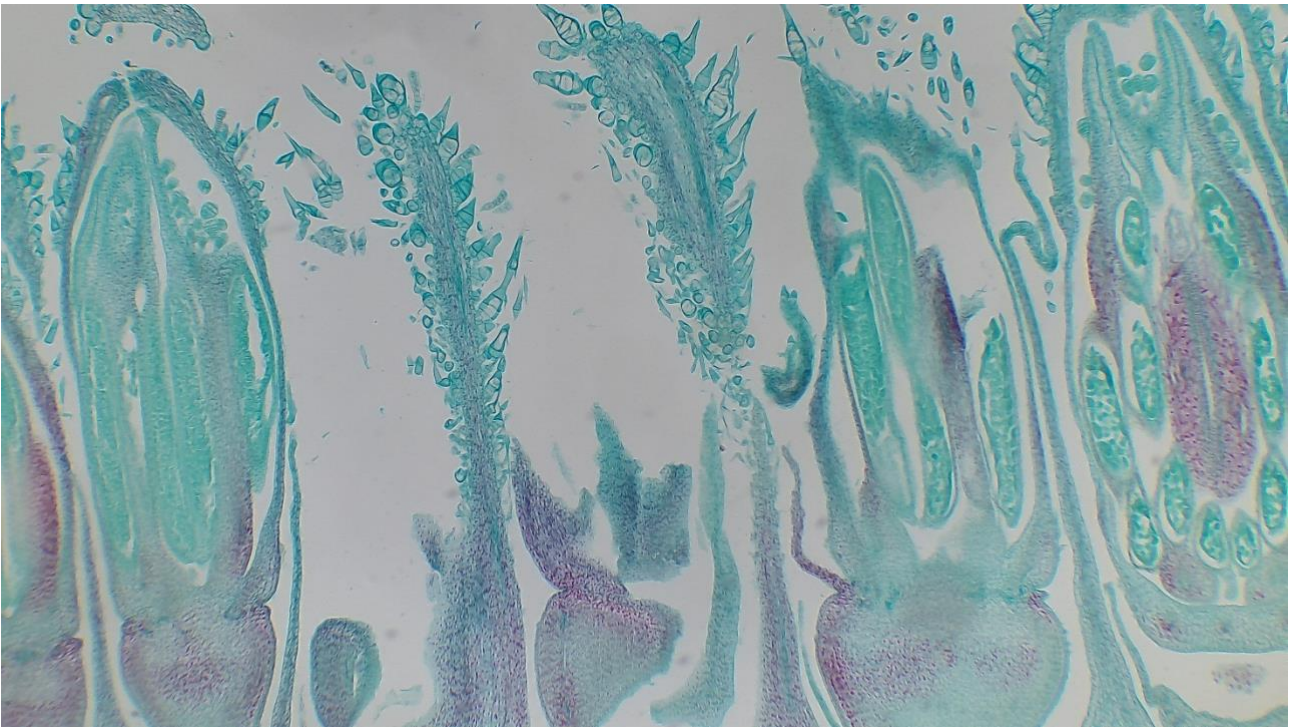


Figure 18 Sunflower Flower Captured with XCAMLITE4K8MPA

10 Contacting Customer Service

Please contact your local distributor if you have any questions about the product.