CURIOSIS

Celloger® Pro

Automated live cell imaging system

Quick Manual

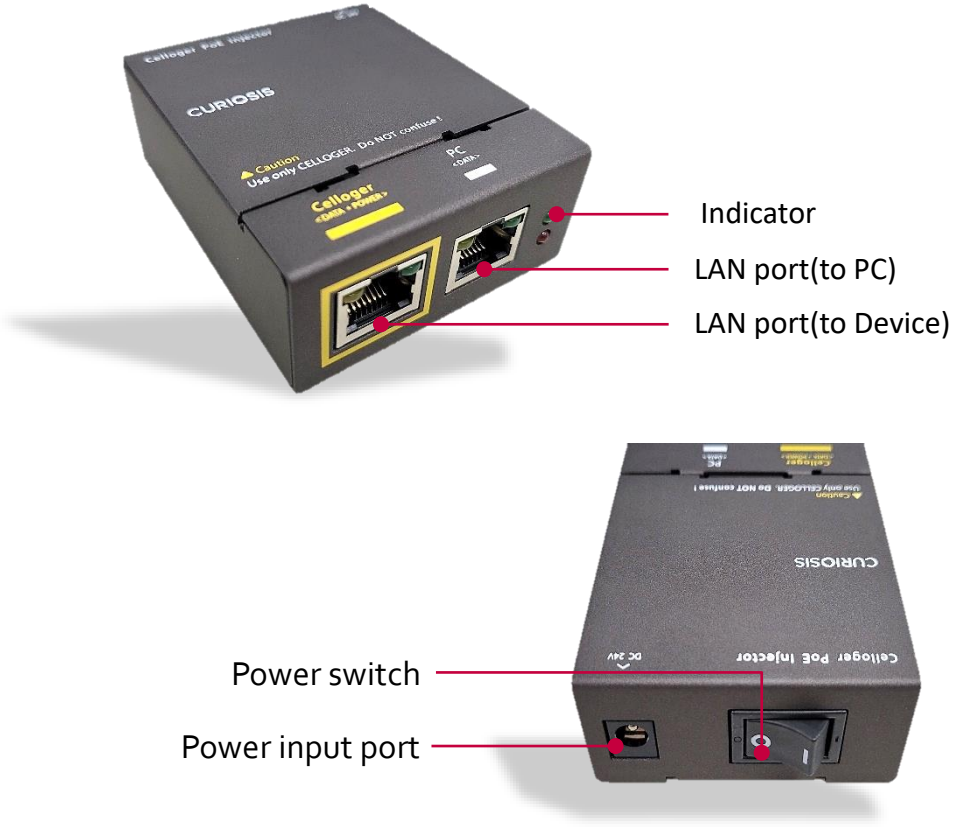
Table of Contents

Device Layout

I. Device Layout

Front-Left Side

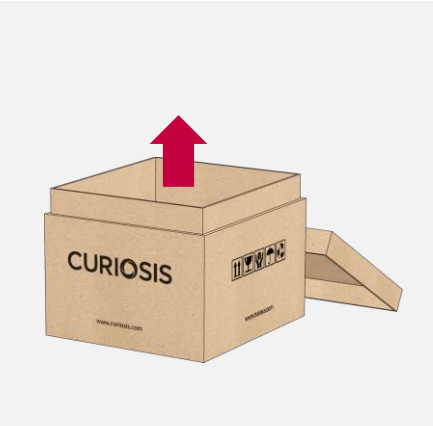
POE



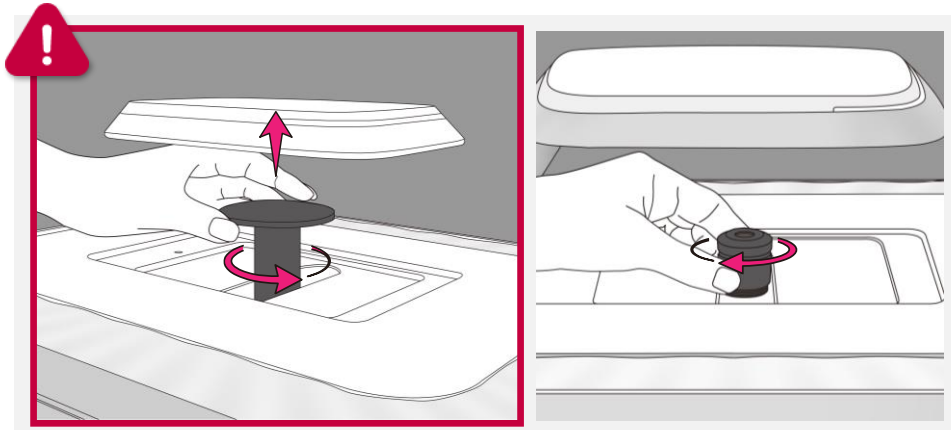
Installation

II. Installation

1. Hardware

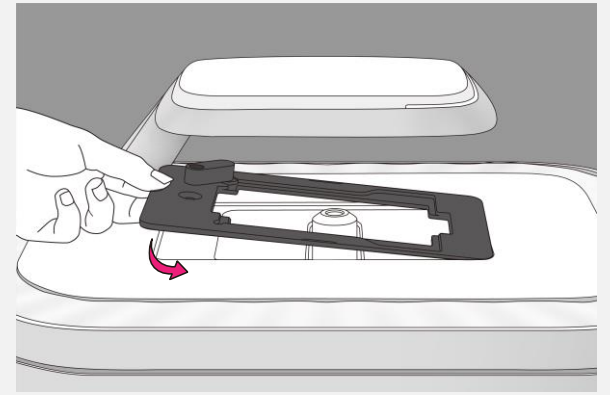


Step 1. Take the equipment out of the package.

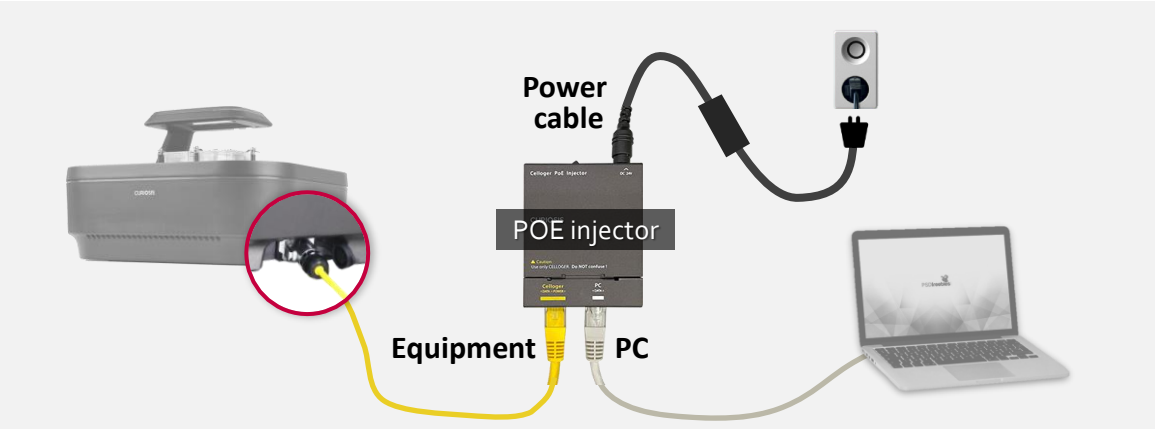


Step 2. **Unscrew** the **optics fixing bolt** and mount the lens.

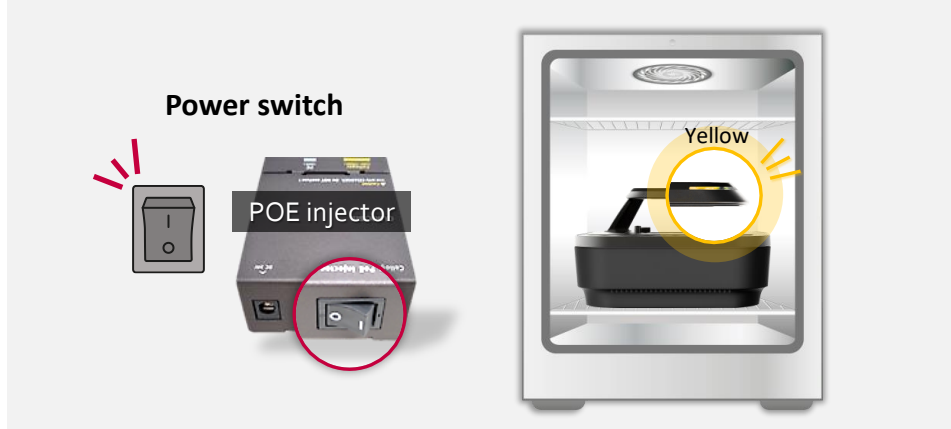
Do not turn on the equipment before removing the bolt.



Step 3. Install the vessel holder on the stage.



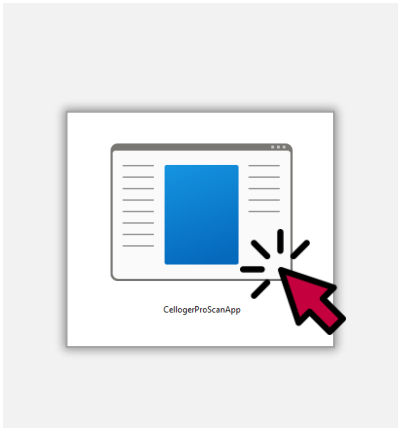
Step 4. Connect two **LAN cables** and a **Power cable** to the **POE injector**.
Step 5. Connect one **LAN cable(Yellow)** to the equipment and another **LAN cable(White)** to the **PC**. (Push the cable until you hear the clicking sound)
Step 6. Connect the **Power cable** to an outlet.



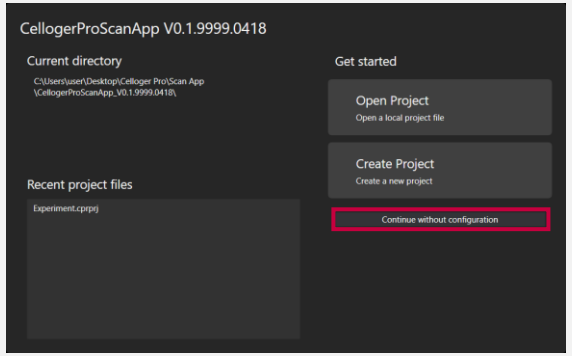
Step 7. Put the device inside the incubator.
Step 8. Turn on the **power switch**.
Step 9. Check if the LED indicator illuminates yellow to confirm the device's power connection status.

II. Installation

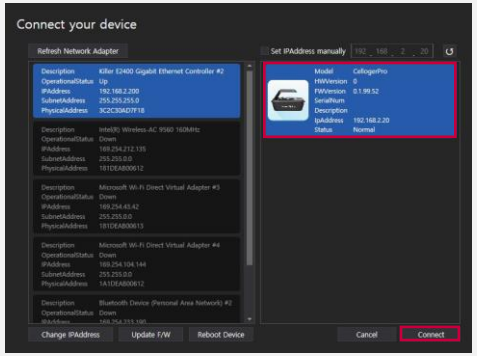
2. Software



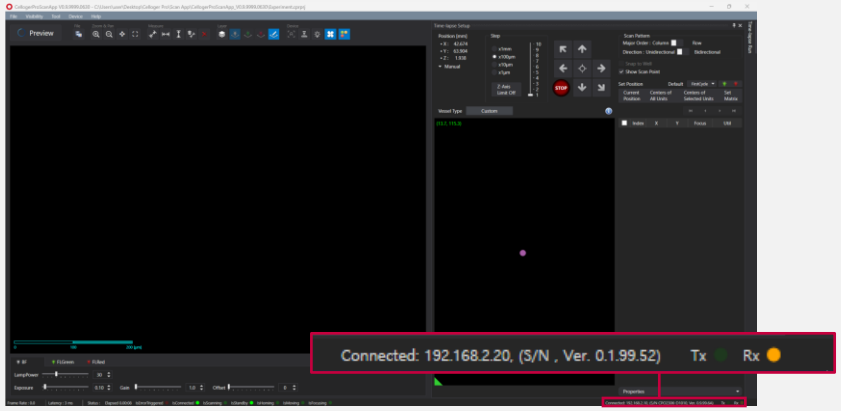
Step 1. Open the **Celloger Pro Scan App**.



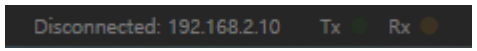
Step 2. Click **Continue without configuration**.

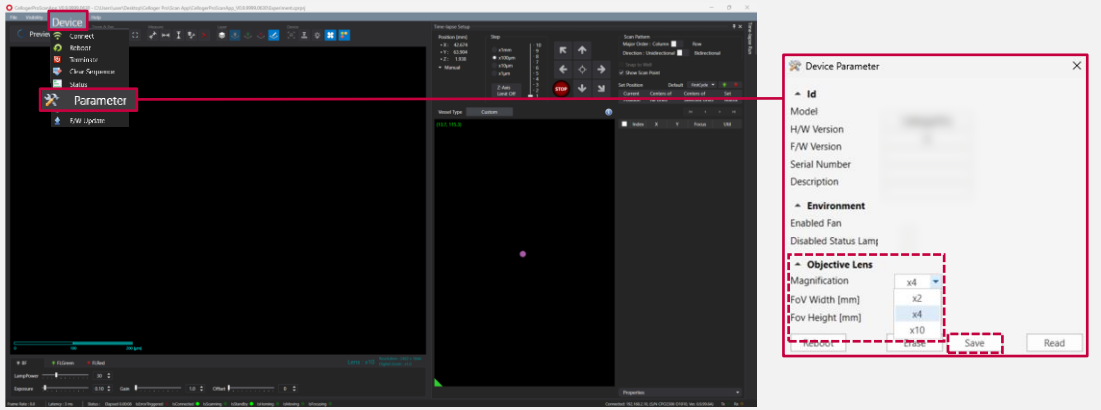


Step 3. Click the **device icon**.
Step 4. Click the **Connect** button to connect the device
***Note.** Check the PC network setting if the device icon is not shown (**Appendix p.20~23**).



Step 5. Verify the **Connection status**. (If the PC and the device are not connected, a **Disconnected** sign will appear.)





Step 6. Click on **Device** in the menu bar and select **Parameter**.
Step 7. Choose the **magnification (2X, 4X, 10X)** for the **objective lens** installed on the device.
Step 8. Click on **Save** to apply the changes.
***Note.** You can also change the magnification by referring to **Appendix p.24**

II. Installation

3. Preparation Before Starting Experiments

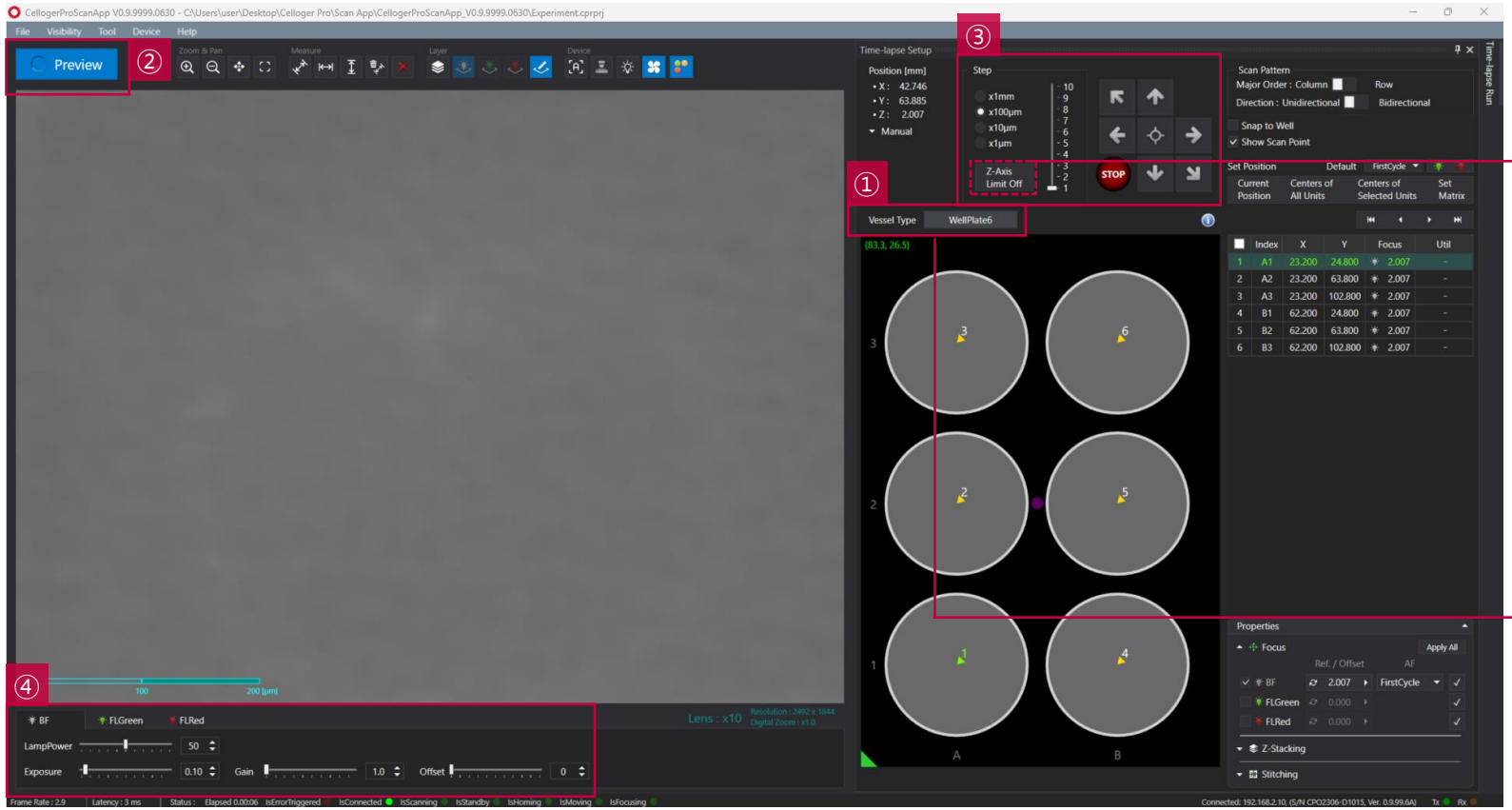
Step 1. Place the sample on the stage of the Celloger® Pro, Make sure the A1 of the plate and stage are aligned.

Step 2. Before beginning experiments, place the Celloger® Pro in an incubator for prewarming. (It is recommended to prewarm for more than 2 hours.)

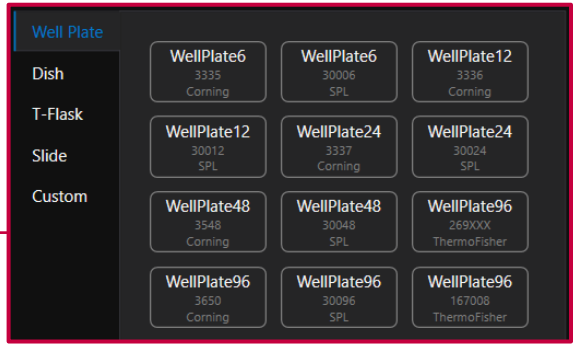
Operation

III. Operation – Scan App

1. Vessel Setting & Positioning



Z-Axis Limit Off
It is a function that allows focusing beyond the range of the existing Z-axis.



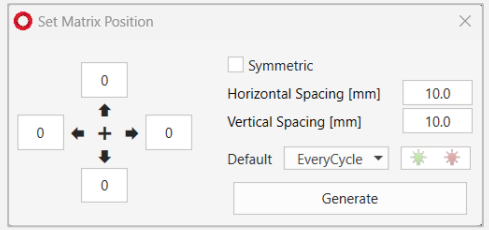
Step 1. Select a **Vessel type**.
(***Note.** You can customize the vessel type according to the product brand.)
Step 2. Click **Preview** for streaming.
Step 3. Move to the desired position using the **Jog button**. (Use diagonal arrows to change the focus level (Z-coordinates).)
Step 4. Adjust the brightness using the **Light Source panel**.
(***Note.** To adjust the fluorescence light level, switch the light source tab to 'FL Green' or 'FL Red')

III. Operation – Scan App

2. Focusing

Set Matrix

It is a function that allows you to designate the top, bottom, left, and right positions based on the current position at specified intervals.



Focus

It is the Z-axis coordinate of BF and FL channels. BF channel shows the focus of Z coordinates and FL channel shows the focus difference from the BF channel.

: Upon clicking, the current coordinate is entered into the box next to it.

: Upon clicking, the Z position moves according to the coordinates shown in the left box.

: Apply the coordinates and autofocusing settings shown to the left.

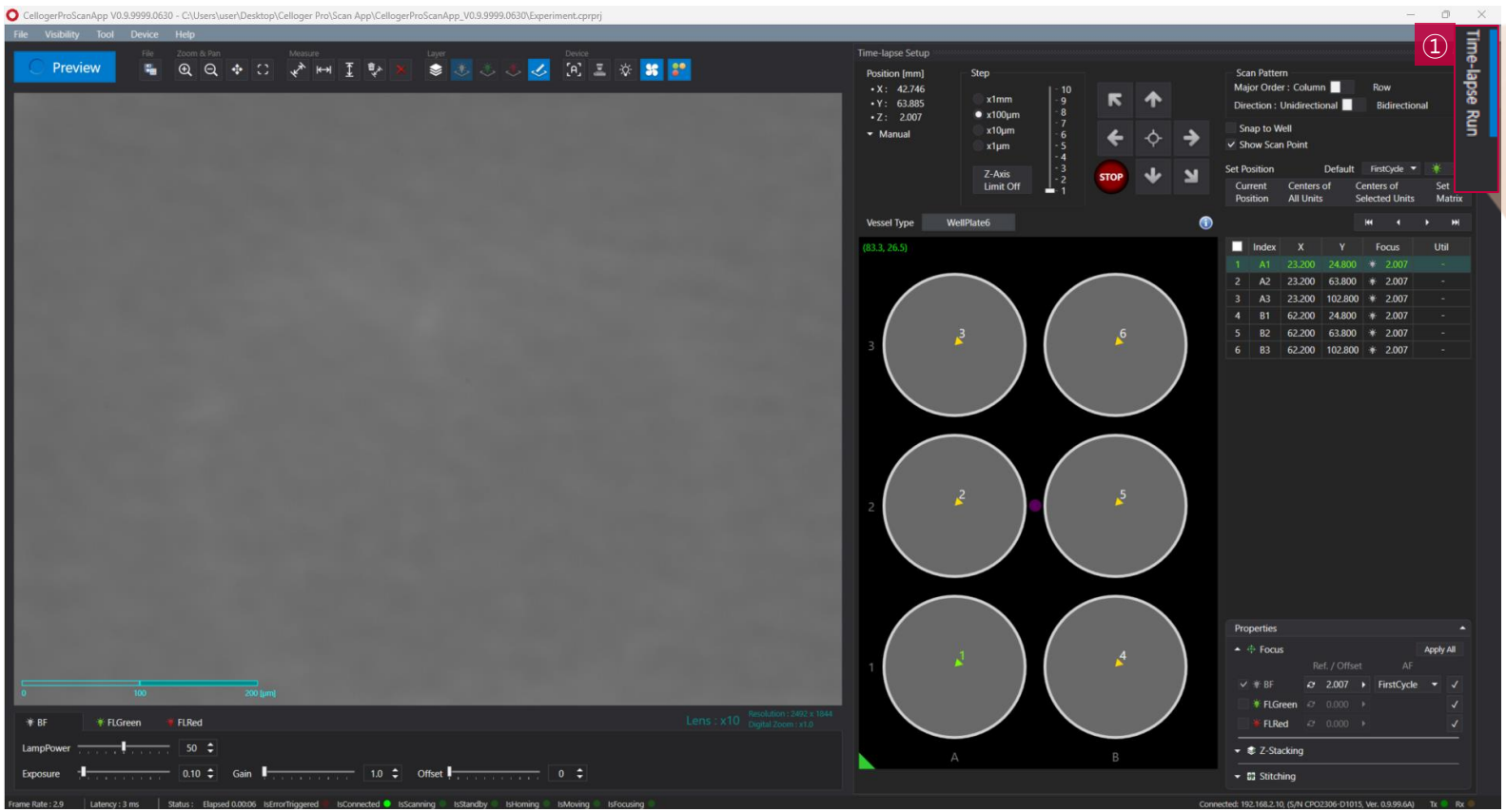
Step 1. Set the focus using the **Jog button**(,).

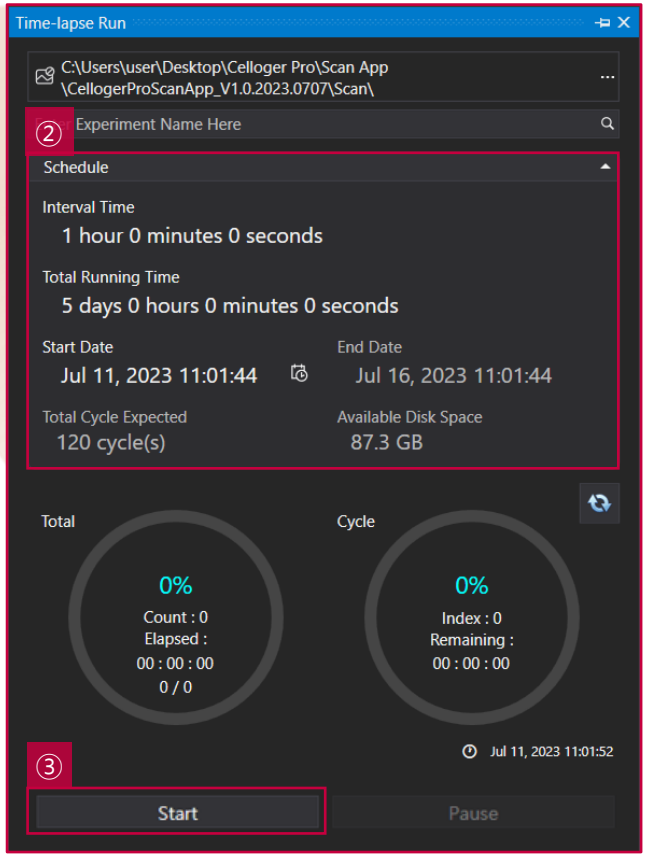
(***Note.** Because the focus for fluorescence scanning can be different, it should be adjusted upon use.)

Step 2. Upon finding the best focal point for scanning, designate the location by pressing **Current Position** in the **Set Position** section.

III. Operation – Scan App

3. Time Setting & Time-Lapse Imaging

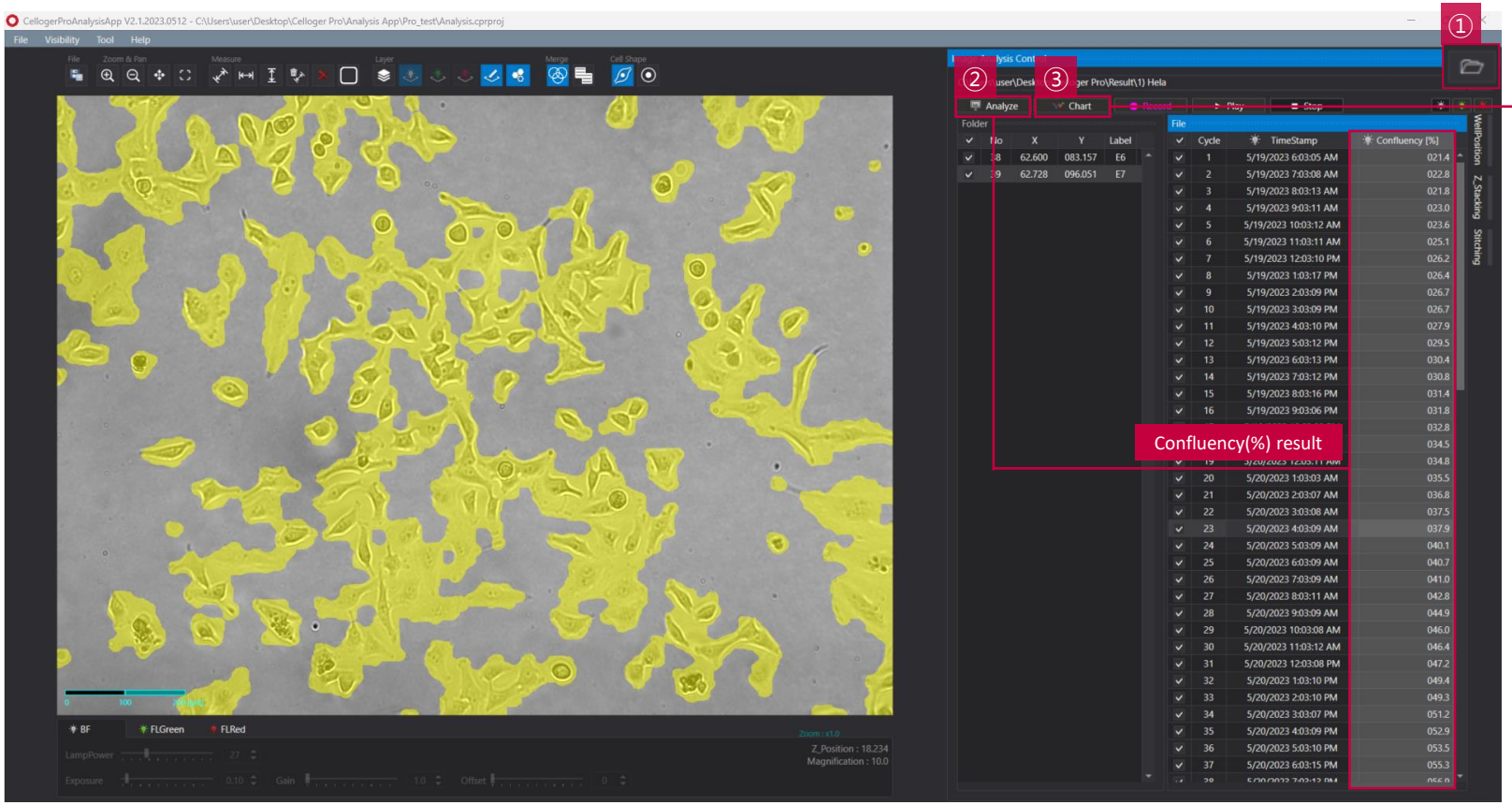




Step 1. Click **Time-lapse Run**.
Step 2. Enter the **Interval time** and **Total Running Time** in the schedule; other information will be set automatically.
Step 3. Click **Start** to begin image scanning.

III. Operation – Analysis App

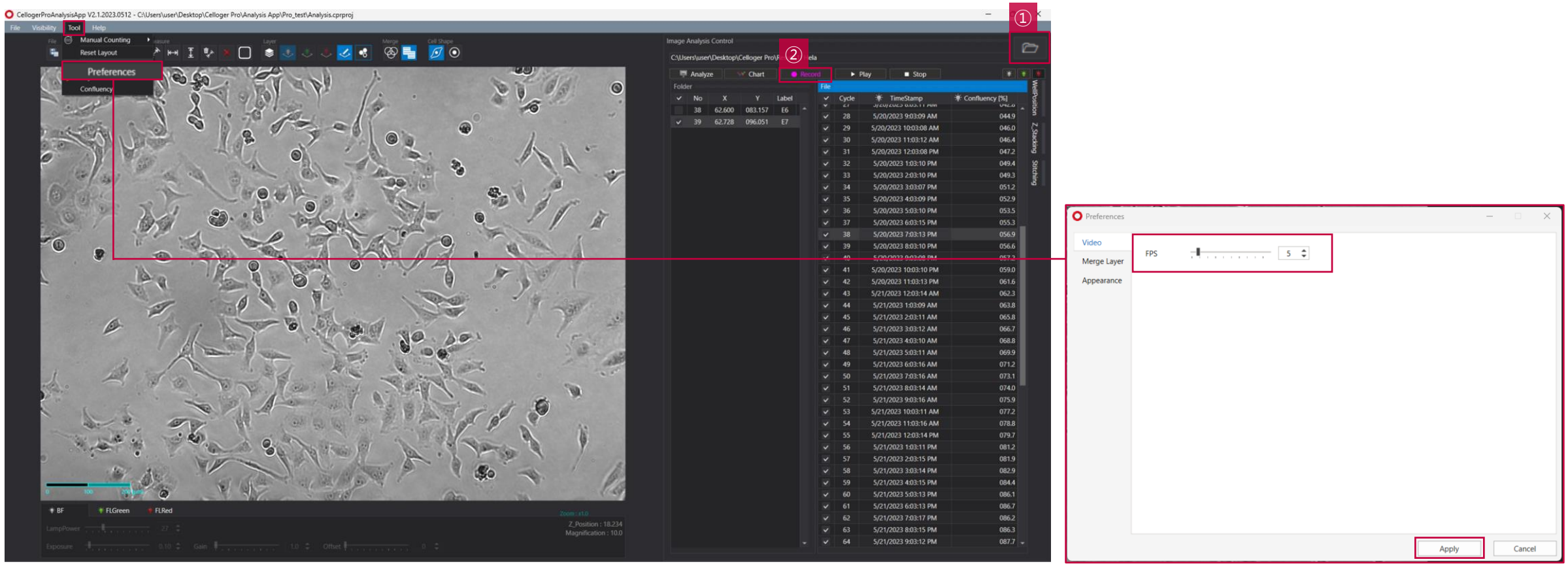
1. Confluency & Graph



Step 1. Import the time-lapse folder or the image file by pressing .
Step 2. Click **Analyze** to estimate confluency.
Step 3. Click **Chart** to create the confluency graph.

III. Operation – Analysis App

2. Video Recording



Step 1. Import the time-lapse folder or the image file by pressing .

Step 2. Click **Record** to create the video.

***Note.** To adjust the **parameter(FPS: Frames per second),** click on **Preferences** under the **Tool** menu. **(Recommended value: 5~13)**

Specifications

IV. Specifications

Imaging modes	Brightfield, Dual fluorescence (Green & Red)
Objective lens	2X, 4X, 10X (User-interchangeable)
Fluorescence	Green (EX : 470/40, EM : 540/50) Red (EX: 562/40, EM: 641/75)
Stage	Fully motorized XYZ (Fixed stage, camera moving type)
Camera	High sensitivity 5.0 MP CMOS
Imaging positions	Multiple
Field-of-view	2X (2.08 x 1.55 mm), 4X (1.46 x 1.09 mm), 10X (0.72 x 0.54 mm)
Focus	Autofocus, Manual focus
Imaging methods	Single/multicolor, stitching, Z-stacking, time-lapse, real-time recording
Included software	Scan App, Analysis App
Dimensions (H x W x L)	250 x 338 x 412 mm
Weight	9.6 kg
Culture vessels	Well plate up to 96-well, flask, dish, slide
File export format	TIFF, AVI (JPEG, PNG)
Operating environment	10~40℃, 20~95% humidity
Power requirement	100-240V, ~50/60Hz
O/S required	Windows 10 and above
Incubator specification	Above 200L (recommend)

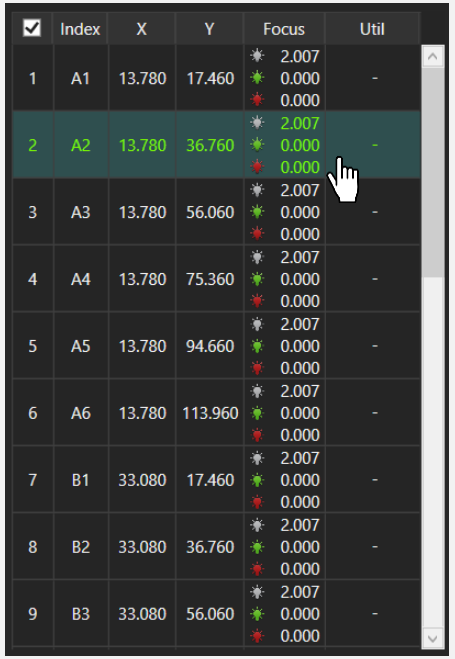
Ordering information

Catalog No.	Description
CRCLG-P01	Celloger® Pro, Live cell imaging system(Bright Field, GFP+RFP) & Objective Lens set
CRCLG-PL02A	Objective lens (2X)
CRCLG-PL04A	Objective lens (4X)
CRCLG-PL10A	Objective lens (10X)
CRCLG-PLS	Objective lens set (2X, 4X, 10X)

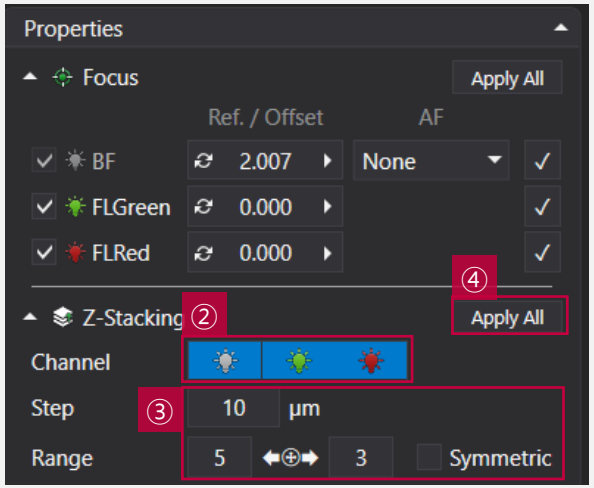
Appendix

V. Appendix – Z-Stacking in Scan App

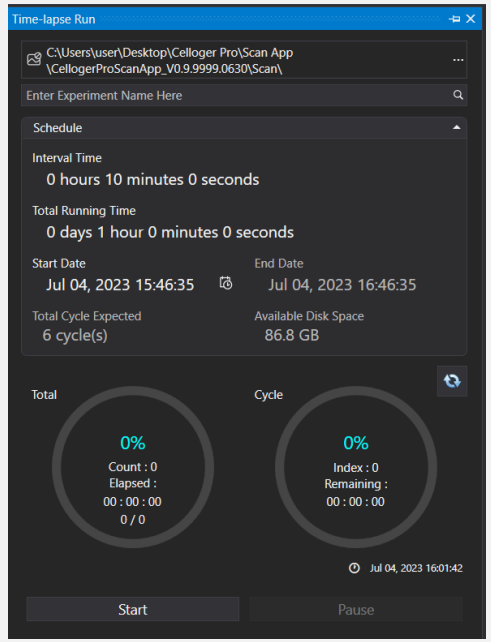
Images are captured in different focal planes and then stack together into a clearly focused composite image.
(You may skip this step if the Z-stacking function is not needed.)



Step 1. Select the position in the **Scan table** where the Z-stacking function will be applied.



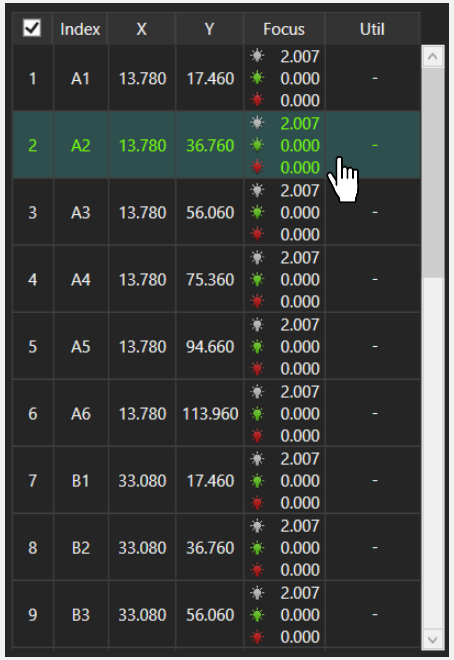
Step 2. Select the channel to perform Z-stacking under **Properties**.
Step 3. Specify the **Step** and **Range** to execute the Z-stacking function.
Step 4. Click **Apply All**.



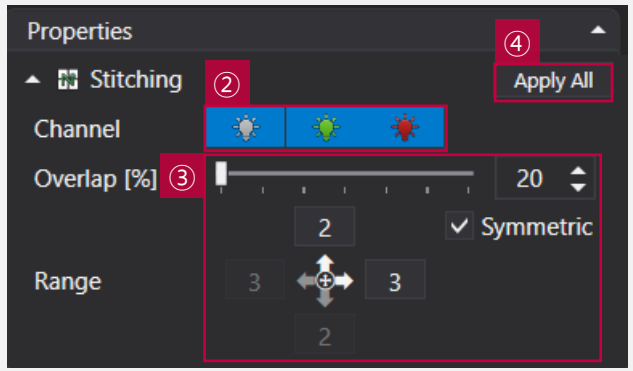
Step 5. Set the **Interval Time** and **Total Running Time** in the schedule and scan the image.

V. Appendix – Stitching in Scan App

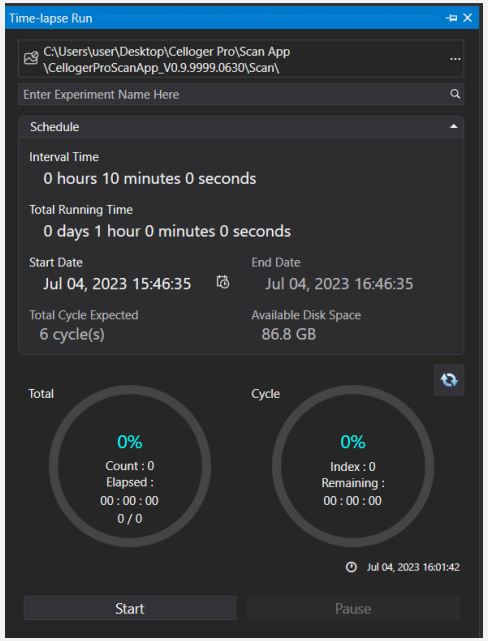
Capturing multiple images and combining the overlapping parts enable high-resolution mapping of a large area of a sample.
(You may skip this step if the Stitching function is not needed.)



Step 1. Select the position in the **Scan table** where the stitching function will be applied.



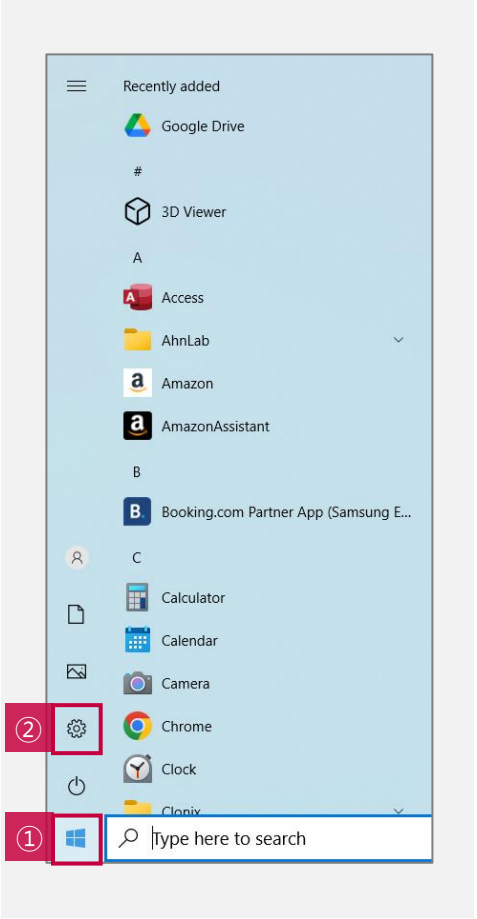
Step 2. Select the channel to perform Stitching under the **Properties**.
Step 3. Adjust the scroll bar to specify the **Overlap** to execute the stitching function, then specify the **Range**.
Step 4. Click **Apply All**.



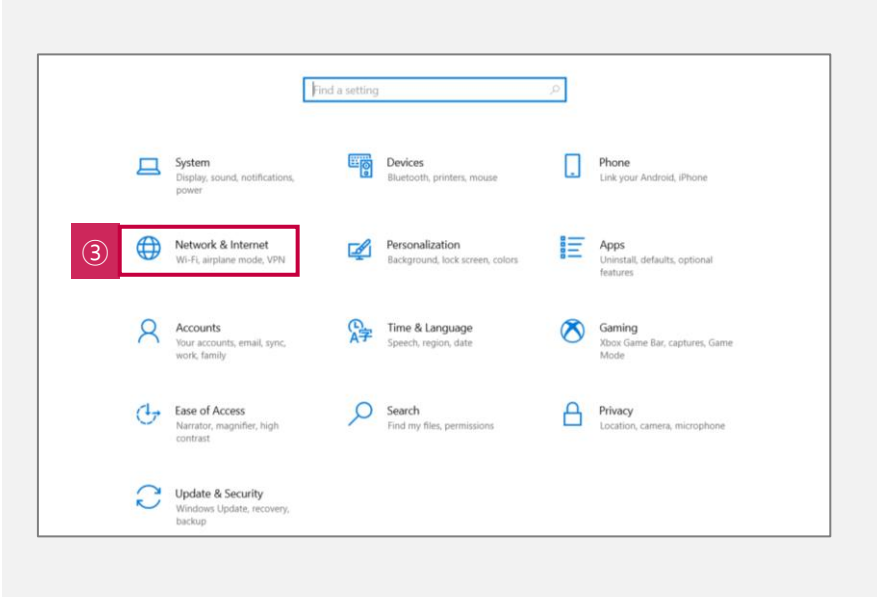
Step 5. Set the **Interval Time** and **Total Running Time** in the schedule and scan the image.

V. Appendix

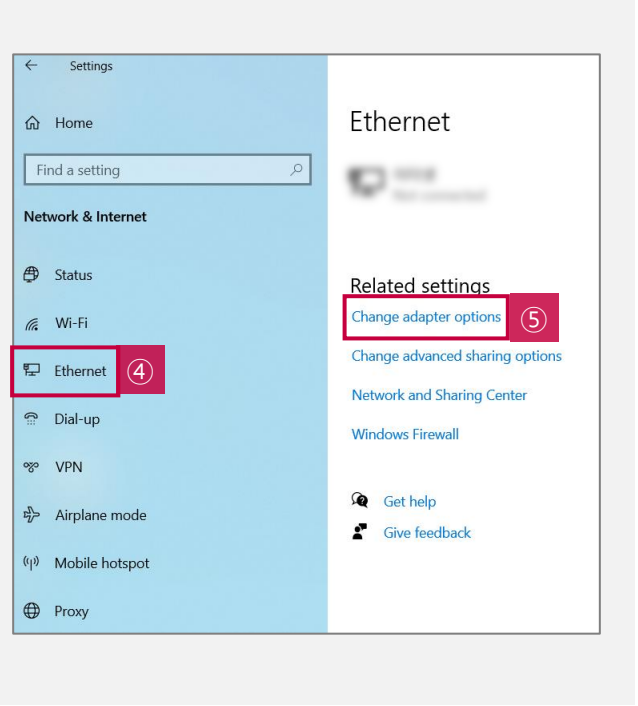
IP Setting **Window 10**



Step 1. Click the **Window** icon.
Step 2. Click the **Setting** icon.



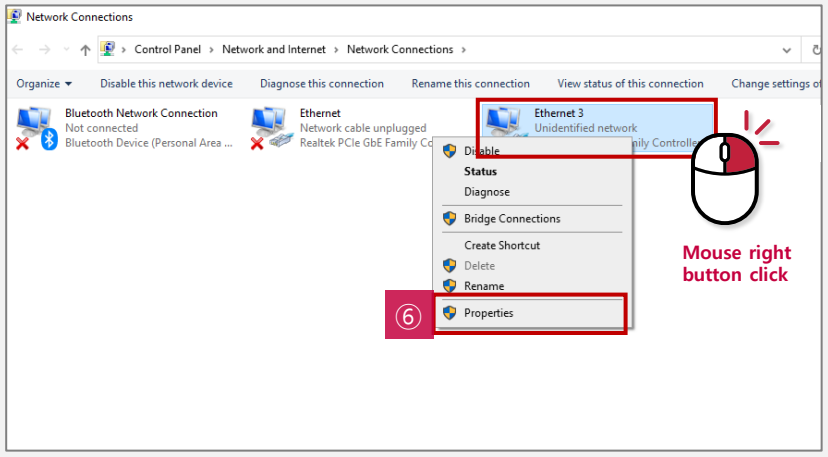
Step 3. Click **Network and Internet**.



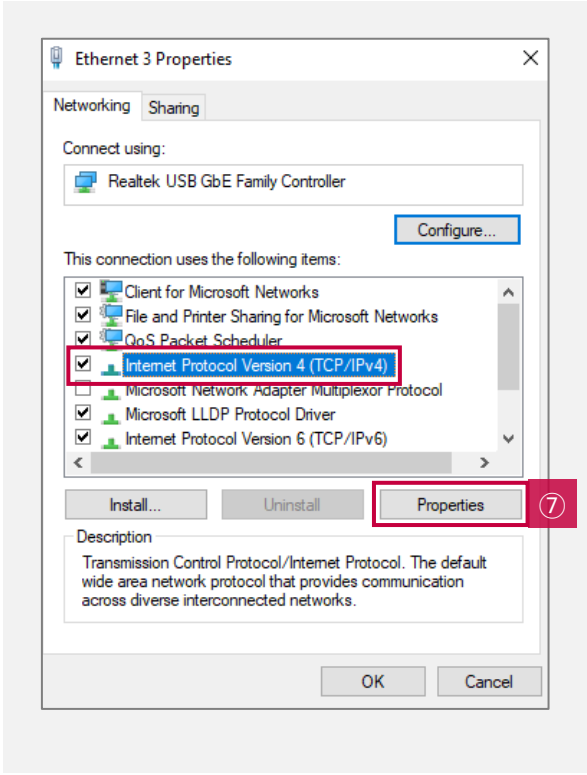
Step 4. Click **Ethernet**.
Step 5. Click **Change adapter options**.

V. Appendix

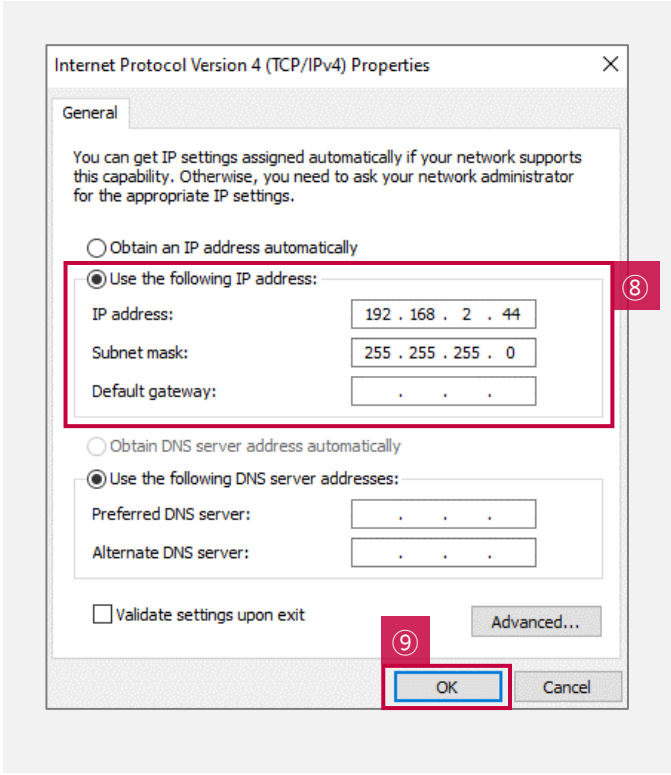
IP Setting **Window 10**



Step 6. Right-click **Ethernet** and click **Properties** in the window that appears.



Step 7. Select **Internet Protocol Version 4(TCP/IPv4)** and click **Properties**.

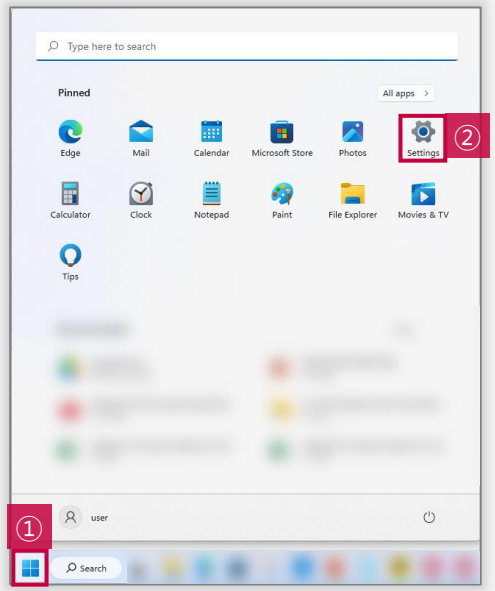


Step 8. Select **Use the following IP address** and enter the **IP address (192.168.2.XX)** and **Subnet mask (255.255.255.0)** in the blank fields.
***Note.** Fill 2 ~ 254 except 10 in XX fields.

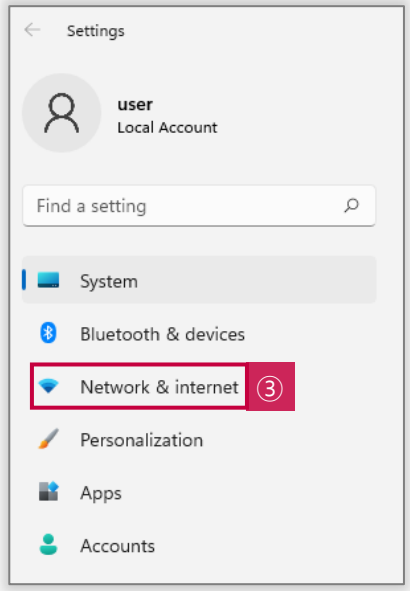
Step 9. Click **OK**.

V. Appendix

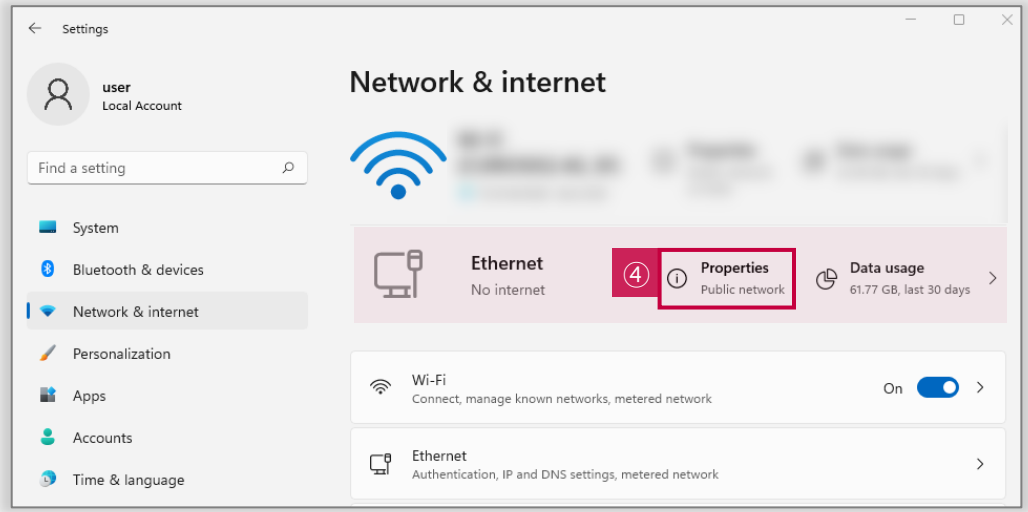
IP Setting **Window 11**



Step 1. Click the **Window** icon.
Step 2. Click the **Setting** icon.



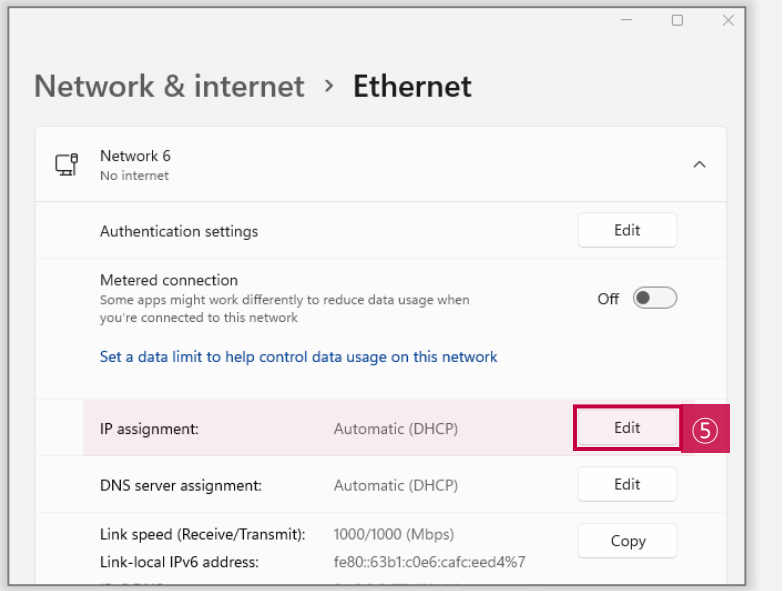
Step 3. Click **Network and Internet**.



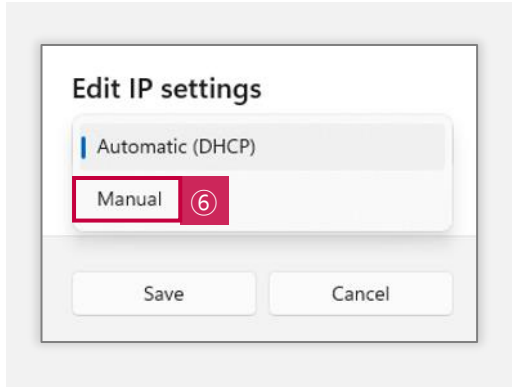
Step 4. Next to **Ethernet**, click **Properties**.

V. Appendix

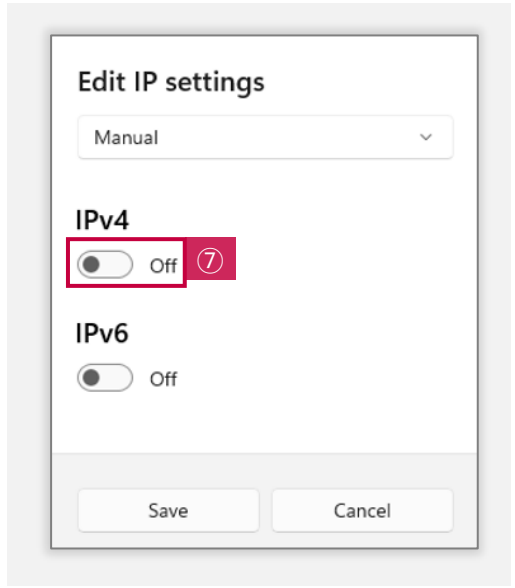
IP Setting **Window 11**



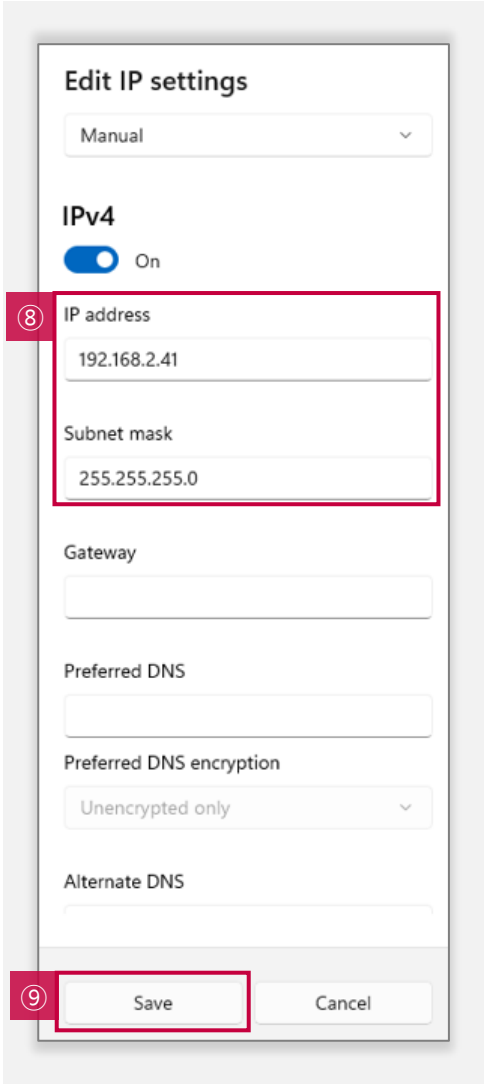
Step 5. Next to **IP assignment**, click **Edit** to change the IP address.



Step 6. Select **Manual**.



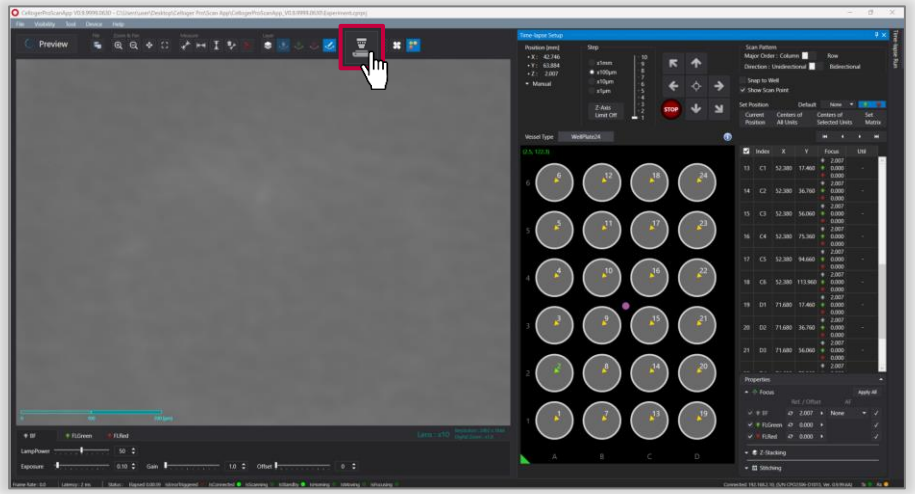
Step 7. Change **IPv4** to **On**.



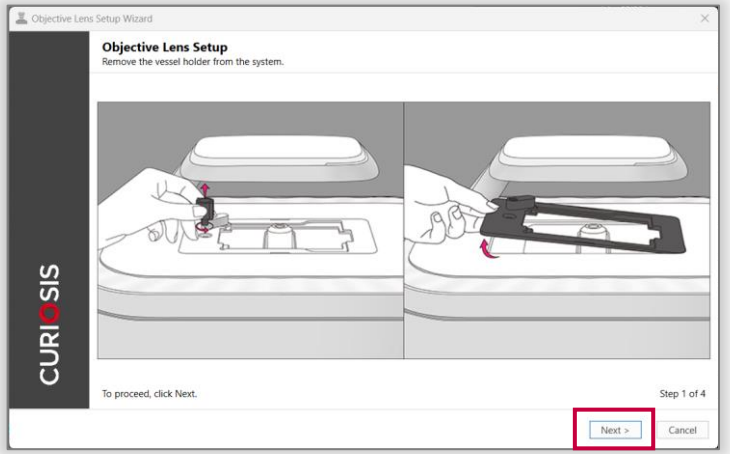
Step 8. Enter the **IP address(192.168.2.XX)** and **Subnet mask(255.255.255.0)** in the blank fields.
***Note.** Fill in any numbers from 2~254 except 10 in fields.

Step 9. Click **Save**, then the network configuration is completed.

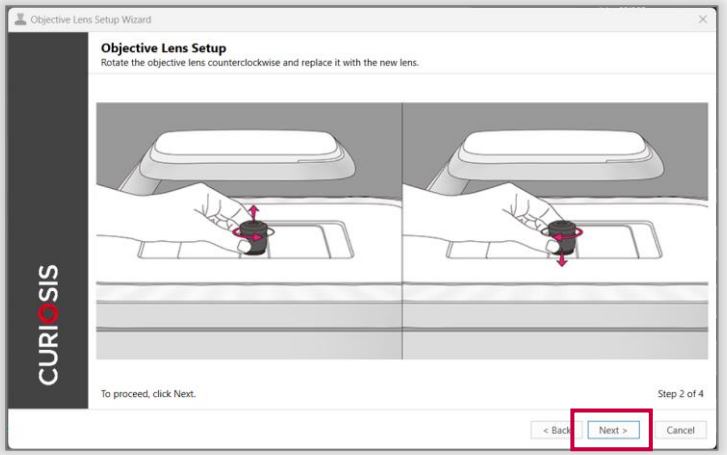
V. Appendix – Lens Change in Scan App

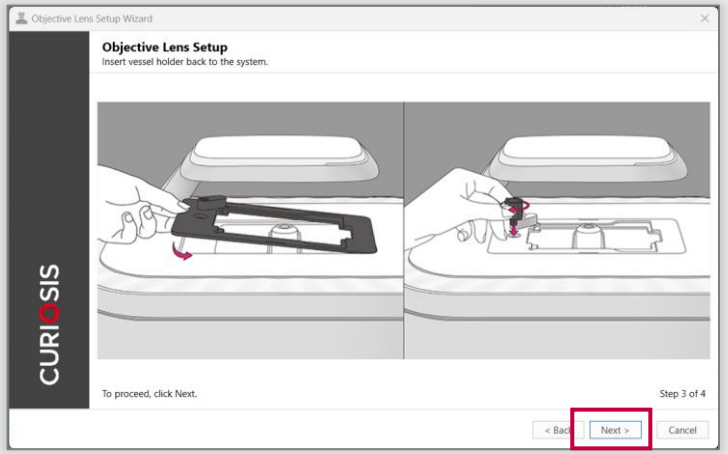


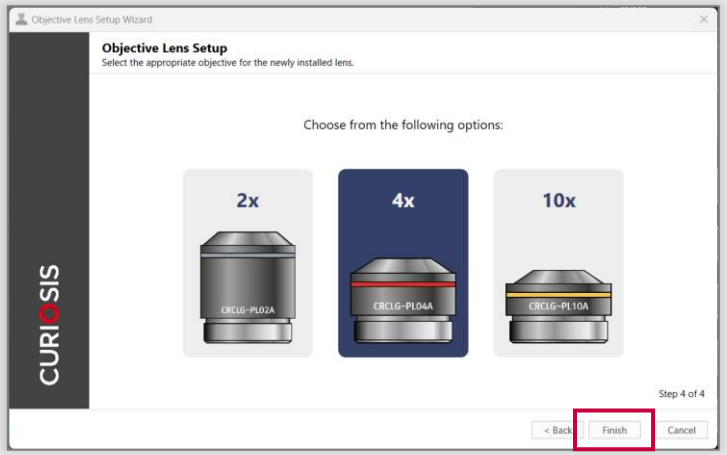
Step 1. Click the button ( ) to change the lens.



Step 2. **Remove the vessel holder** from the device and click **Next**.







Step 3. **Remove** the objective lens by rotating it counterclockwise and **replace** it with the new lens.
Step 4. Click **Next**.

Step 5. **Insert the vessel holder** back into the device and click **Next**.

Step 6. **Select the appropriate objective** for the newly installed lens and click **Finish**.

Thank you

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Curiosis Inc.

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