



CELESTRON[®] LABS DIGITAL

ADVANCED

2MP Wi-Fi MICROSCOPE IMAGER INSTRUCTION MANUAL

MODEL #44429



MICROSCOPE AND TABLET SOLD SEPARATELY



INTRODUCTION

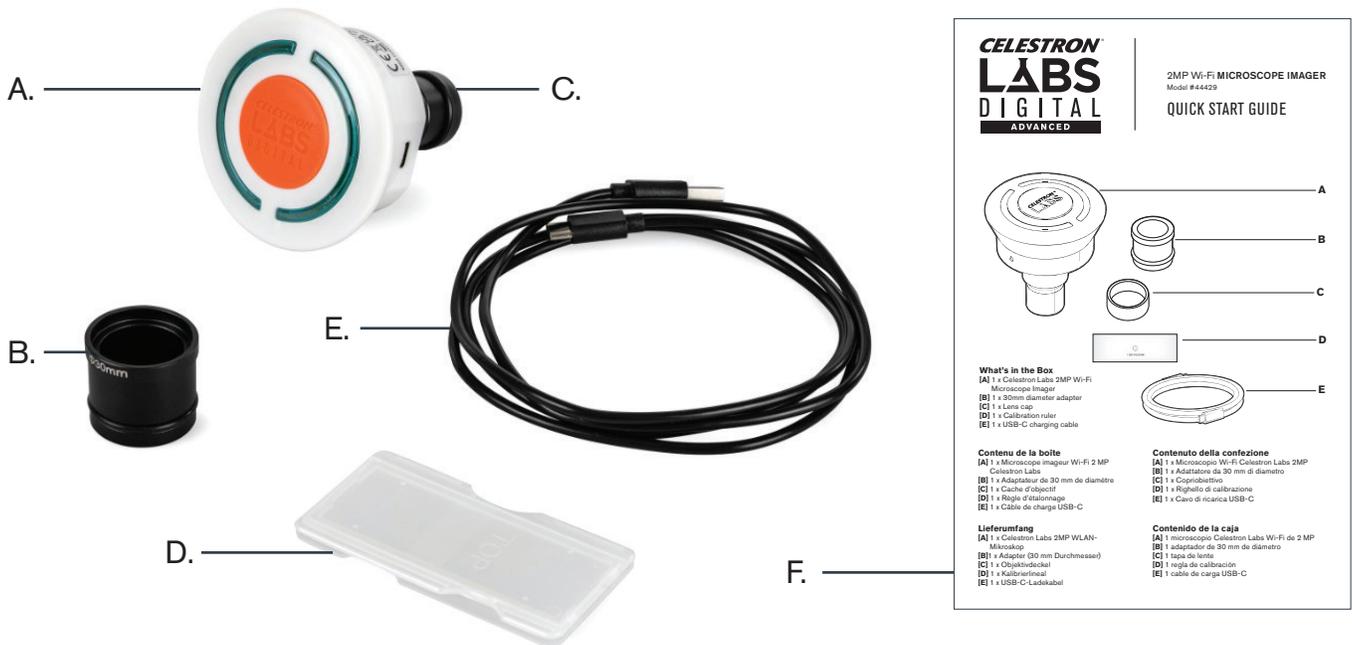
Thank you for purchasing the Celestron Labs Digital Wi-Fi Microscope Imager. This device replaces your microscope's eyepiece and streams a live image directly to your smartphone or tablet via its dedicated Wi-Fi signal. No internet connection is required. Capture still images, record video, and share your discoveries without crowding around an eyepiece.

The imager fits most microscopes with a 23mm eyepiece tube and includes a 30mm adapter for larger stereo microscopes. Simply insert the imager in place of the eyepiece, connect your smart device to the Celestron Labs Wi-Fi network, and open the Celestron Labs Wi-Fi App to begin viewing.

The free Celestron Labs Digital Wi-Fi App works with iOS and Android devices. With it, you can adjust resolution, capture photos and video, enable measurement tools, and save files directly to your device for easy sharing.

Before getting started, read through the setup instructions and review the diagrams in this manual. A few minutes of preparation will ensure smooth setup and the best possible performance.

WHAT'S IN THE BOX



Carefully unpack your Wi-Fi Imager and verify that all items listed below are present:

- [A] Celestron Labs 2MP Wi-Fi Microscope Imager
- [B] 30mm diameter adapter
- [C] Lens cap
- [D] Calibration ruler
- [E] USB-C charging cable
- [F] Quick Setup Guide

SPECIFICATIONS

Type of Microscope:	Wi-Fi enabled Microscope Camera
Sensor:	2MP CMOS
Sensor Size:	1/4" SONY
Sensor Magnification:	30X (Final determined by device screen size. Spec based on 5" smartphone screen size)
Pixel Size:	2.9 μm x 2.9 μm
Memory Type:	No memory- uses smart device memory to save images and video
Still image capture resolution:	1920x1080/1280x720/640x480
Video resolution:	1920x1080/1280x720/640x480
Video Format - Recording:	MJPEG: 30 fps @ 1024x768/ 12fps @ 2592x1944
Shutter trigger position:	In APP
Software:	Celestron Labs Digital Wi-Fi APP
Software Compatibility:	▪ iOS ▪ Android
Power Source:	Rechargeable lithium ion battery (1100 mAh)
Battery life on full charge:	3 hours
Port(s) In:	USB-C Port for charging
Port(s) Out:	NA
Cable	USB-C Cable for charging battery (compatible with most 5V-1A to 1.8A AC Adapters)
Dimensions:	75mm x 75mm x 81.3mm (2.95" x 2.95" x 3.20")
Weight:	3.4 oz (97 g)
Included Items:	<ul style="list-style-type: none">▪ (1) Aluminum collar adapter for 30mm stereo scope eyepiece tube▪ (1) Rubber Lens cover for protection▪ (1) Calibration ruler in plastic case▪ (1) USB-C charging cable

SETUP

STEP 1: CHARGE THE IMAGER

The Wi-Fi Imager includes a built-in rechargeable lithium-ion battery and must be fully charged before first use.



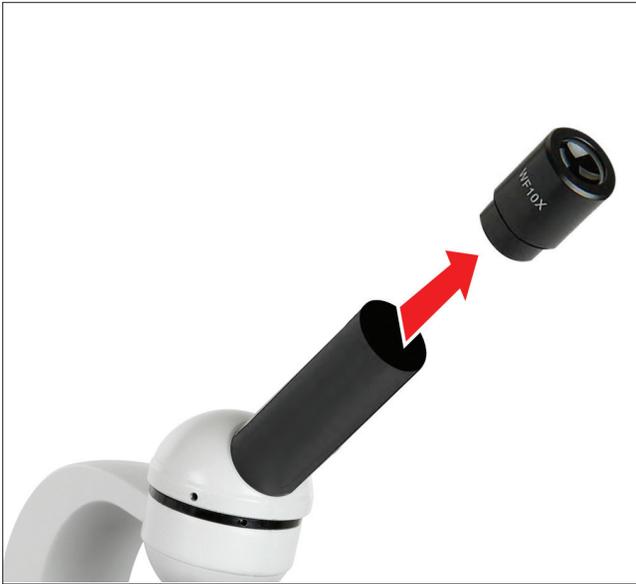
1. Connect the included USB-C cable to the imager.



2. Plug the other end into a standard USB wall charger (such as a typical phone charger) or a portable USB power bank. (Output: 5V, 1A-1.8A)

The red LED will illuminate while charging. When the red LED turns off, the battery is fully charged, and you're ready to move to the next step. A full charge provides approximately 3 hours of operation.

STEP 2: INSTALL THE IMAGER

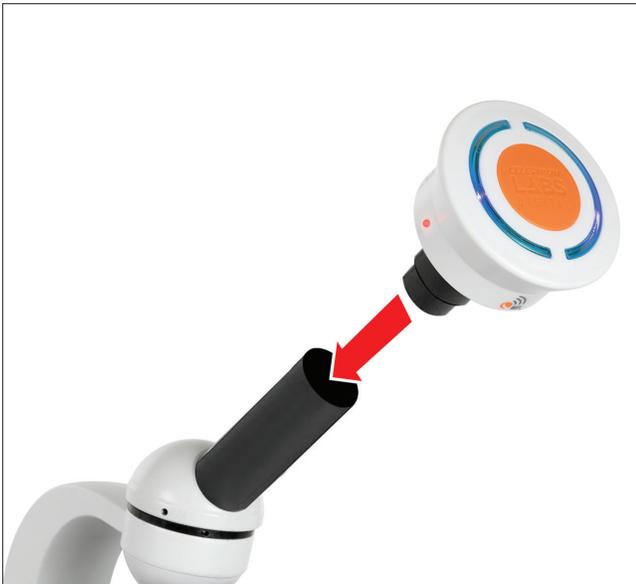


1. Remove the eyepiece from your microscope.

NOTE: If your microscope uses a 30mm eyepiece tube, you'll need to attach the included 30mm adapter. For more information, see the "Using the 30m Adapter".

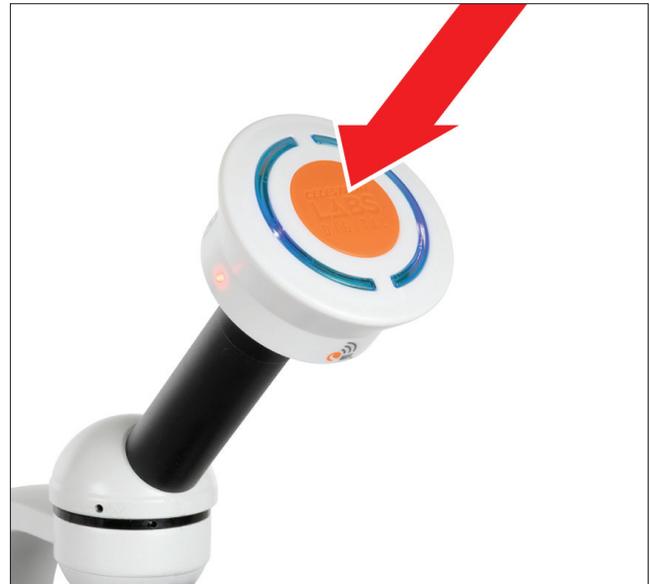


2. Remove the rubber lens cap from the imager.



3. Insert the imager fully into the microscope's eyepiece tube.

The imager should fit securely without force.



STEP 3: POWER ON

Press and hold the orange power button until the blue LED indicators illuminate. The blue LEDs will begin blinking. This indicates the imager is broadcasting its Wi-Fi signal.

If the blue LEDs do not turn on:

- Confirm the battery is charged.
- Press and hold the power button for several seconds.

STEP 4: INSTALL THE APP

Scan the QR code provided or search for Celestron Labs Digital Wi-Fi in the Apple App Store or Google Play Store. Download and install the free app. The app works with iOS and Android devices.



STEP 5: CONNECT TO THE IMAGER'S WI-FI NETWORK

1. Open the Wi-Fi settings on your smartphone or tablet.
2. Look for a network named: Celestron LABS ImagerXXXX (The four X's represent a unique letter/number combination.)
3. Select the network to connect.

Once connected, the blue LED on the imager will stop blinking and remain steady.

Your device may display a message stating that there is no internet connection. This is normal. The imager creates its own direct Wi-Fi connection and does not use your Wi-Fi network.



STEP 6: START VIEWING

Open the Celestron Labs Digital Wi-Fi App.

Live video should begin streaming within about 30 seconds. If the video does not appear:

- Confirm your device is connected to the Celestron LABS ImagerXXX Wi-Fi network.
- Close and reopen the app.



USING THE IMAGER WHILE CHARGING

You may operate the imager while it is connected to external power. When doing so:

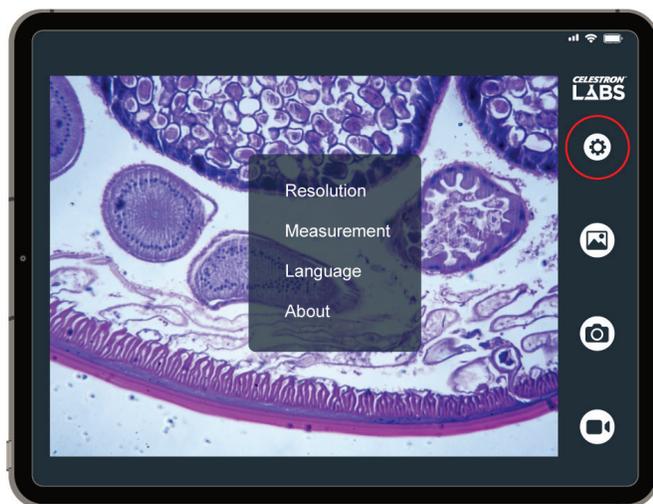
- Do not power the device from a computer USB port. This may interfere with the Wi-Fi signal.
- The blue LED may continue blinking while charging, even when connected to Wi-Fi. This is normal.

USING THE APP

Once connected to the imager's Wi-Fi network, open the Celestron Labs Digital Wi-Fi App. Live video will stream directly to your device.



The main interface is shown below. The labeled callouts identify each feature described in this section.



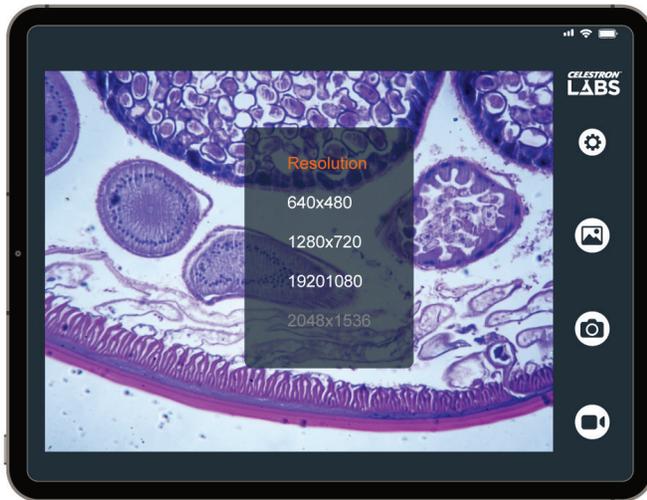
A. SETTINGS

Tap the Settings icon to access the following options:

Resolution

Select the image and video resolution. Higher resolutions provide greater detail but create larger file sizes. Available settings:

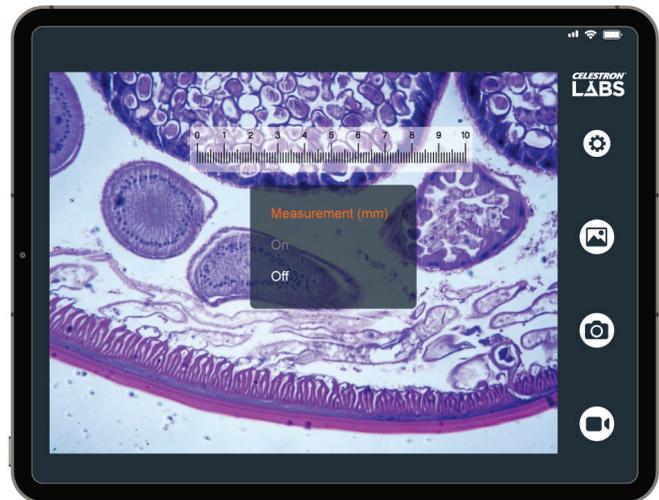
- 640 × 480
- 1280 × 720
- 1920 × 1080
- 2048 × 1536 (maximum resolution)



Measurement

Turn the digital measurement reticle on or off.

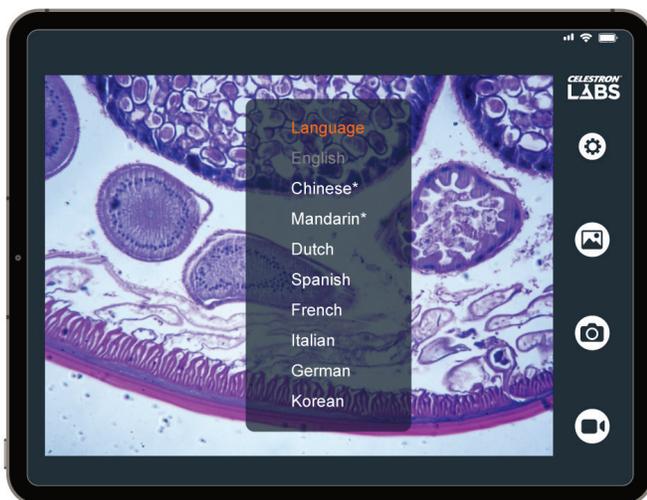
When calibrated, the reticle allows you to estimate specimen dimensions directly on screen.



Language

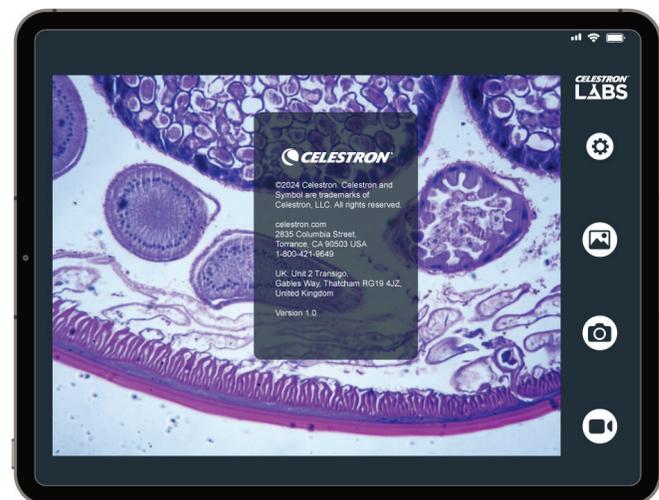
Change the interface language.

Available options include: English (default), Chinese (Simplified), Chinese (Traditional), Dutch, Spanish, French, Italian, German, and Korean.



About

Displays the app version number, legal information, and Celestron contact details.

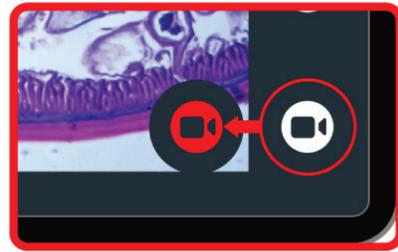
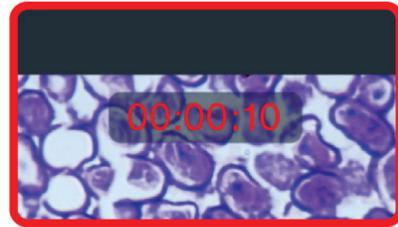
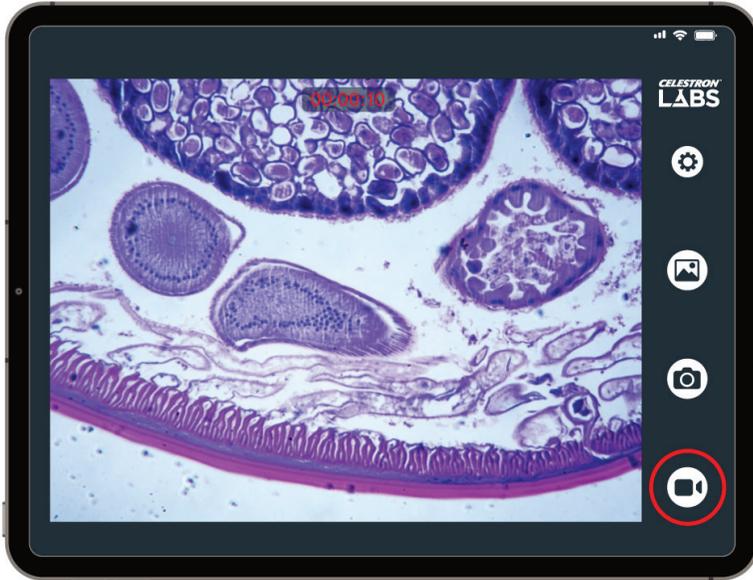


B. VIDEO RECORDING

Tap the Video icon to begin recording. A timer will appear at the top of the screen while recording is in progress.

Tap the icon again to stop recording.

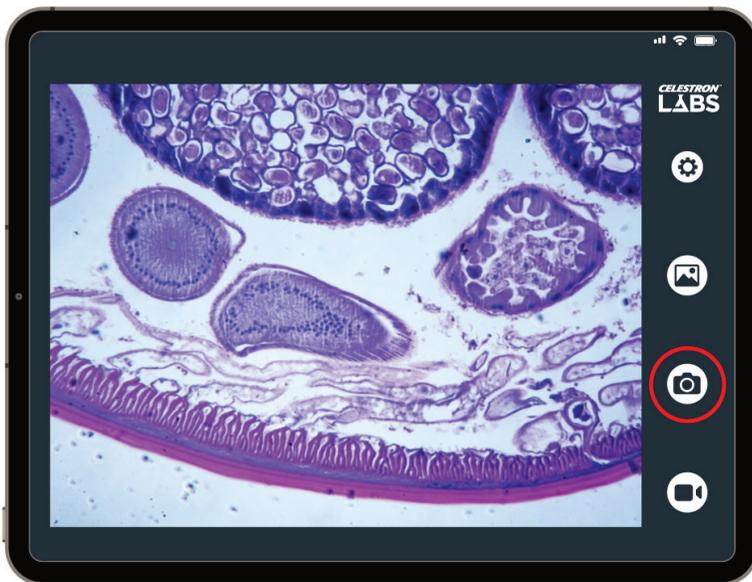
Videos are saved directly to your device.



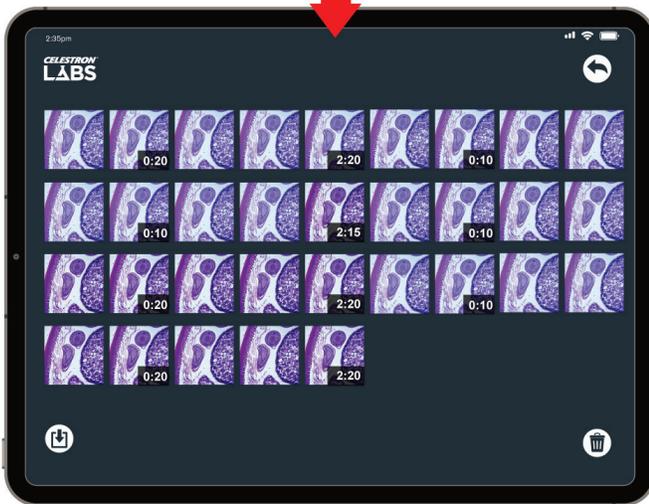
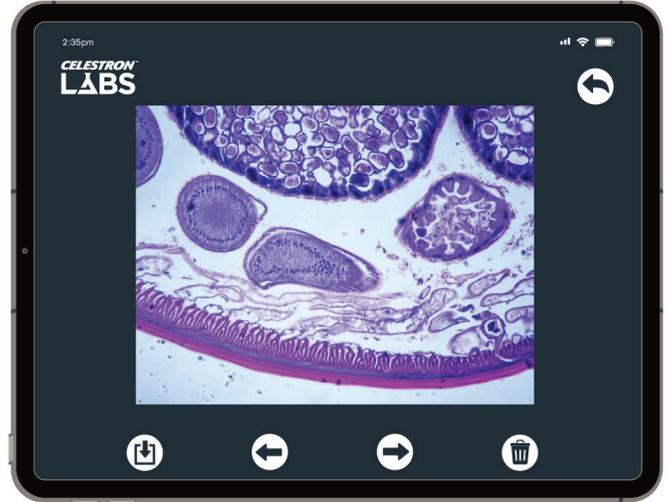
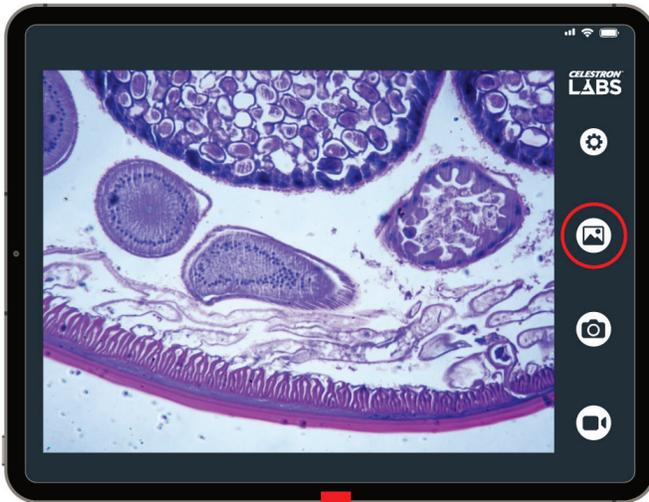
C. TAKING PHOTOS

Tap the Photo icon to capture a still image.

Images are saved directly to your device.



D. GALLERY



Tap the Gallery icon to view saved images and videos.

- Tap a thumbnail to view full screen.
- Swipe left or right to scroll through saved files.
- To play a video, tap the screen and select Play.

IMPORTANT PERMISSION NOTICE

Depending on your device settings, you may be prompted to allow the app access to your photos and files. Full access is required to save images and videos.

USING THE 30MM ADAPTER

The Wi-Fi Imager is designed to fit standard 23mm eyepiece tubes. If your microscope has a 30mm eyepiece tube, attach the included 30mm adapter to the base of the imager before inserting it into the microscope.

The adapter slides securely over the imager barrel, increasing its diameter from 23mm to 30mm. Once attached, insert the imager into the eyepiece tube as you would a standard eyepiece.

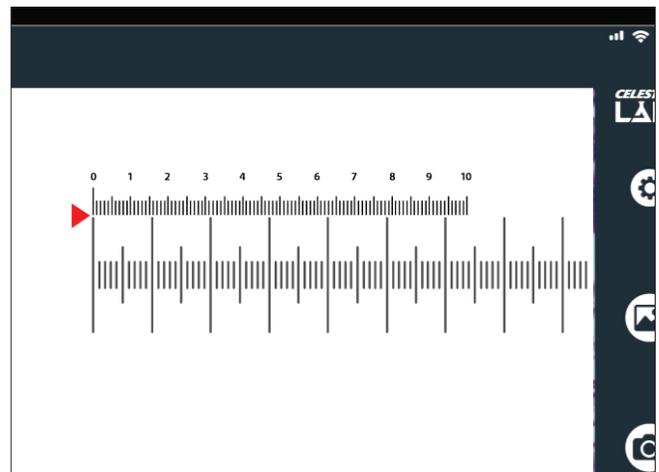
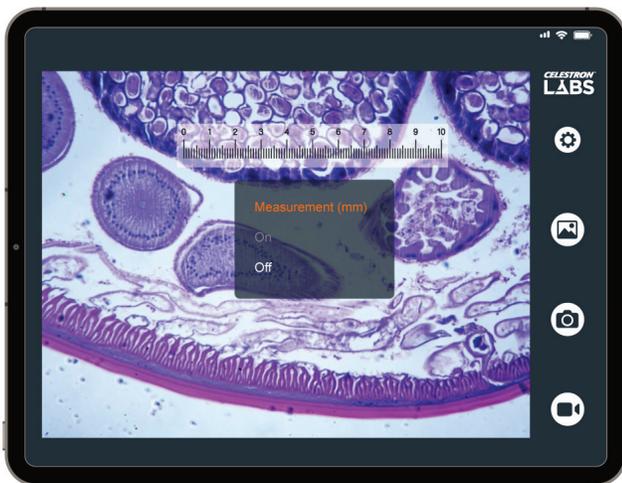


USING THE CALIBRATION SLIDE

The measurement reticle in the app displays evenly spaced lines on the screen. However, the app does not automatically know how much real-world distance those lines represent at your current magnification. The included calibration slide, also called a stage micrometer, solves this.

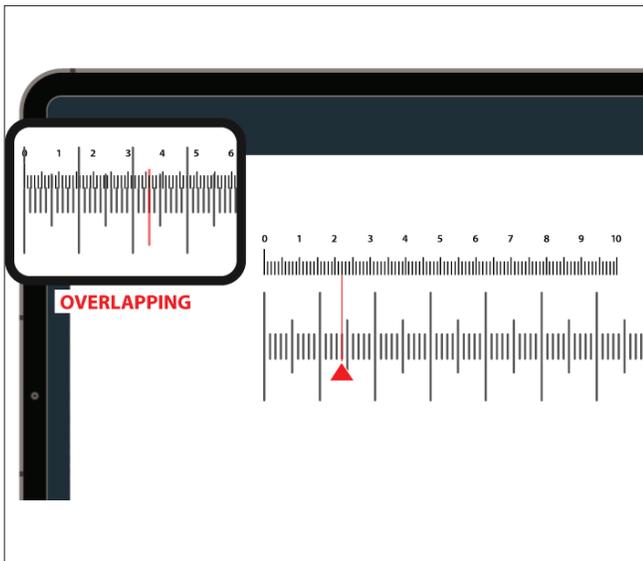
The slide contains a precisely etched ruler. Each small division on the slide equals 0.01mm (10 micrometers). By comparing the known distances on the calibration slide to the onscreen reticle, you can calculate the actual distance represented by each reticle division.

Calibration is specific to the objective lens you are using. If you change magnification, you must recalibrate before taking new measurements.

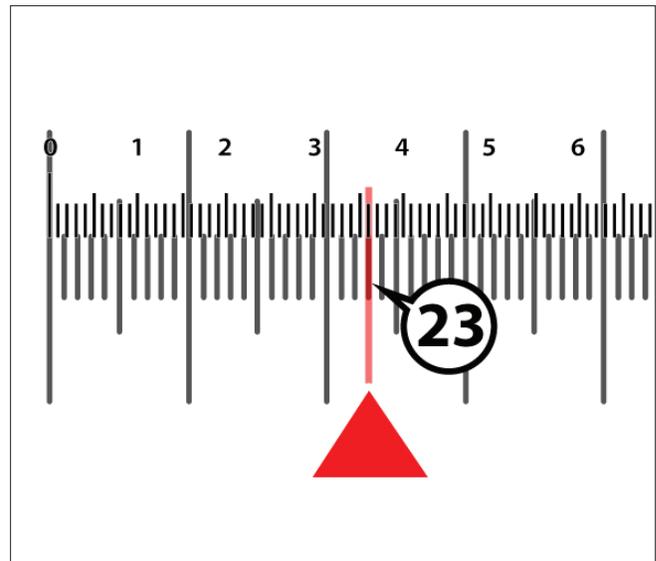


To Calibrate:

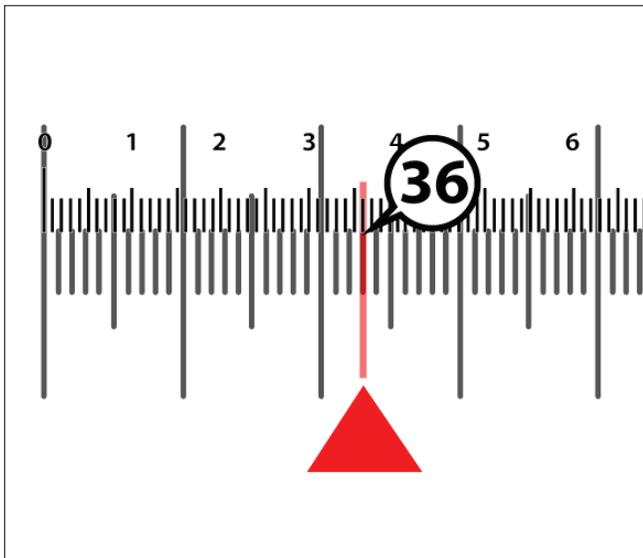
1. Place the calibration slide on the microscope stage.
2. In the app, turn the Measurement reticle ON.
3. Adjust the stage so the calibration slide ruler is visible and focus the microscope until it appears sharp on screen.
4. Align the "0" mark on the digital measurement reticle with the "0" mark on the calibration slide.



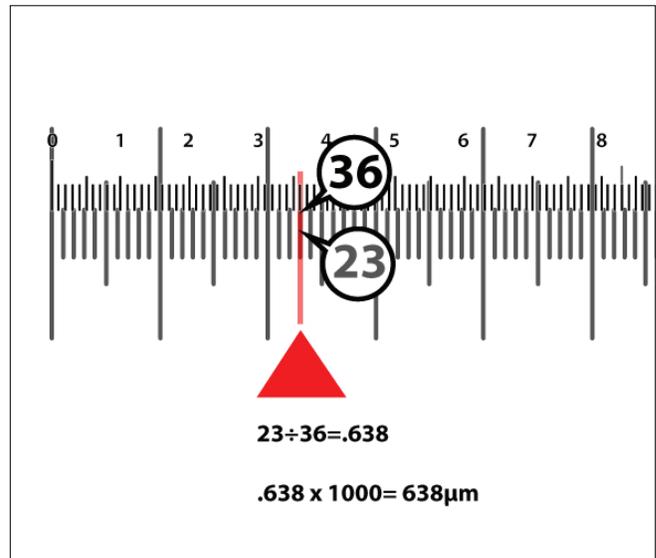
5. Without moving the slide, move across the scale and locate the next point where a line on the digital reticle aligns exactly with a line on the calibration slide.



6. Count the number of divisions that are in the actual distance measured on the calibration slide, to the point where the lines of both are superimposed on each other.



7. Count the number of divisions on the digital reticle between those same two aligned points. In this example, it's 36 divisions.



8. Calculate the size represented by one reticle division.

First, divide the calibration slide divisions by the reticle divisions: $23 \div 36 = 0.638$

Then, multiply this result by 1000 to convert to micrometers: $0.638 \times 1000 = 638 \mu\text{m}$

In this example, each division on the digital reticle equals $638 \mu\text{m}$.

9. You can now use the calibrated reticle to estimate specimen dimensions.

Important

If you change objective lenses or magnification, you must recalibrate before taking new measurements.

9. CARE AND MAINTENANCE

Your Celestron Labs Digital Wi-Fi Imager is a precision optical device. Proper care will ensure reliable performance for years to come.

- + Store the imager in a clean, dry environment when not in use.
- + Do not use the imager in environments where electronic devices are prohibited. Improper use could result in serious accident.
- + Operate the imager only within a temperature range of 23° to 120°F (-5° to 50°C). Avoid sudden temperature changes, as condensation may form inside the housing.
- + Keep the imager away from water and other liquids. Do not use it in rain or damp conditions. Moisture poses a risk of fire and electric shock.
- + Do not attempt to open or modify the device. Internal components should only be serviced by authorized technicians.
- + To clean the exterior, wipe gently with a soft, dry cloth.



celestron.com/pages/warranty

FCC Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- + Reorient or relocate the receiving antenna.
- + Increase the separation between the equipment and receiver.
- + Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- + Consult the dealer or an experienced radio/TV technician for help.



Celestron hereby declares that the radio equipment type 44429 WiFi Micro Imager 2MP complies with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address www.celestron.com/productcompliance.

NEED ASSISTANCE? Contact Celestron Technical Support
celestron.com/pages/technical-support

Product design and specifications are subject to change without prior notification.
This product is designed and intended for use by those 14 years of age and older.

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Separate waste collection. Check your local municipal guidelines.
Raccolta differenziata. Verifica le disposizioni del tuo Comune.