

Working with the ZEISS Labscope App for iPad

Product and Application Support

September 2014



With Labscope, you can transform your ZEISS microscope and camera into a WiFi-enabled imaging system. Be it in the laboratory, university, school or even for your hobby – Labscope snaps images and records videos of your microscopic samples, easier than ever. You can create annotations and reports, do image processing and save the files to your Windows network, or simply share them with anyone, anywhere. Benefit from more than 160 years of experience in microscopy and explore the freedom of mobile digital imaging. Easy. Precise. Efficient.

Version used for this manual: 1.0.4 (released July 10, 2014)

Compatibility – requires iOS 6.0 or later. This app will only run on an Apple iPad.

Languages available – English, Czech, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish

Labscope is for Research Use Only – not for use in Diagnostic procedures. (A Research application is not intended for in vitro diagnostic or in clinical use, but is intended solely for use in the research or educational setting, for example university or pharmaceutical development. These applications are described as Research Applications or Research Use Only.)

Visit www.zeiss.com/labscope to learn more.

Visit the Labscope Support Forum at:

<http://forums.zeiss.com/microscopy/community/forumdisplay.php?f=34>

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To get started, the Labscope app must first be installed on the iPad. This can be done over a wireless connection through the App Store directly from the iPad, or it can be done by connecting the iPad to iTunes and downloading/installing the app that way. In either case, you will need to create an Apple ID (free registration) in order to download, install, or update the application. Please visit <https://appleid.apple.com/account> for more details.

After you turn on the iPad, check that the device is properly connected to your wireless router. If you're using an AirPort wireless router from Apple, you can use the AirPort app to check this connection. Alternatively, from the home page of the iPad, go to Settings > Wi-Fi and click on your network to join it. The network you join must be the one to which the Axiocam ERc 5s or Primostar HD head is tethered.

Once your WiFi connection is established, look for the Labscope app on your home screen. Tap on it once to open.



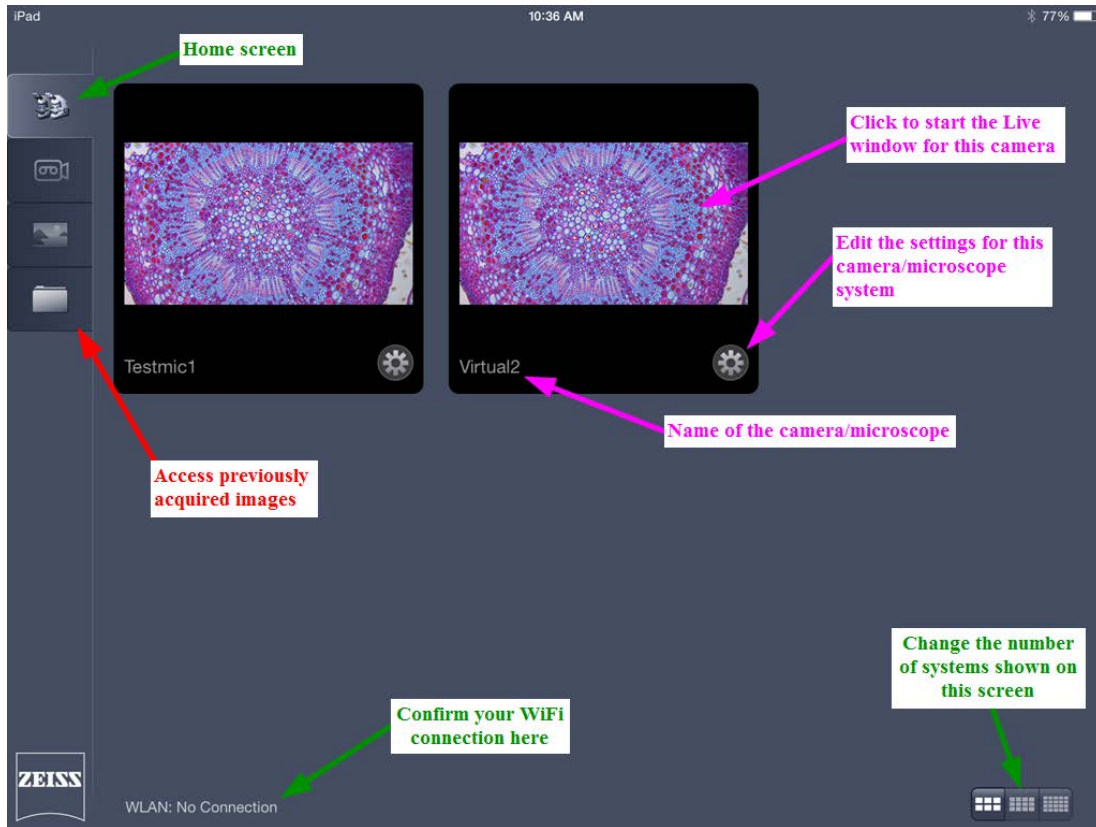
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On the home screen of Labscope, you will see the following features.



Labscope will always start with two Virtual Microscopes so you can test out the features of the software. You can configure Virtual Microscopes to simulate real microscopes. To configure a camera or microscope (real or virtual), click the gear beneath the system you wish to edit. To confirm that you are configuring the correct camera/microscope, the initial name field will contain the hardware address (second part of the MAC address) of the microscope or camera head.

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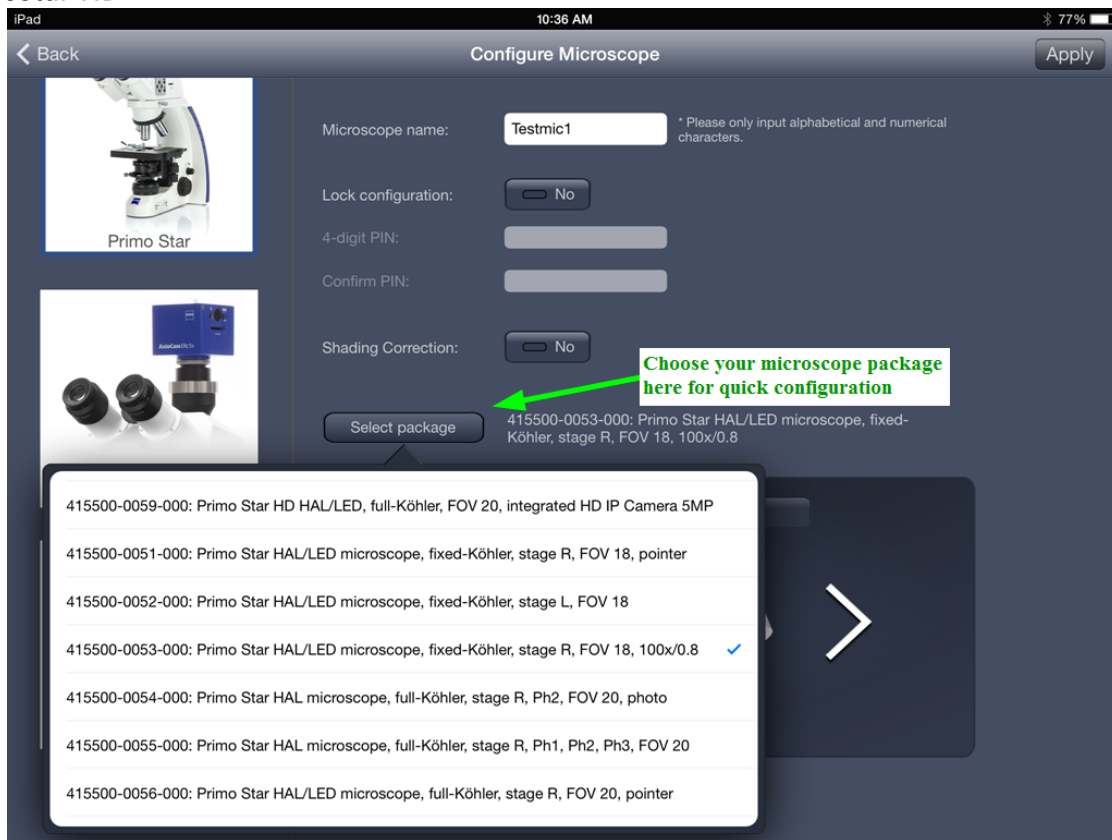
On the configuration screen (gear icon beneath each system), you are presented with a couple of items. First, select from the left side the system you are setting up. There are three options:

Primo Star: This is Primostar HD, with a 5MP integrated camera in the binocular tube

Axiocam ERc 5s (Rev.2) Compound/Stereo microscope: Choose from these options based on your type of microscope stand when utilizing the standalone ERc 5s camera

Options are slightly different among the system you configure. All three are shown below.

Primostar HD



(continued on the next page)

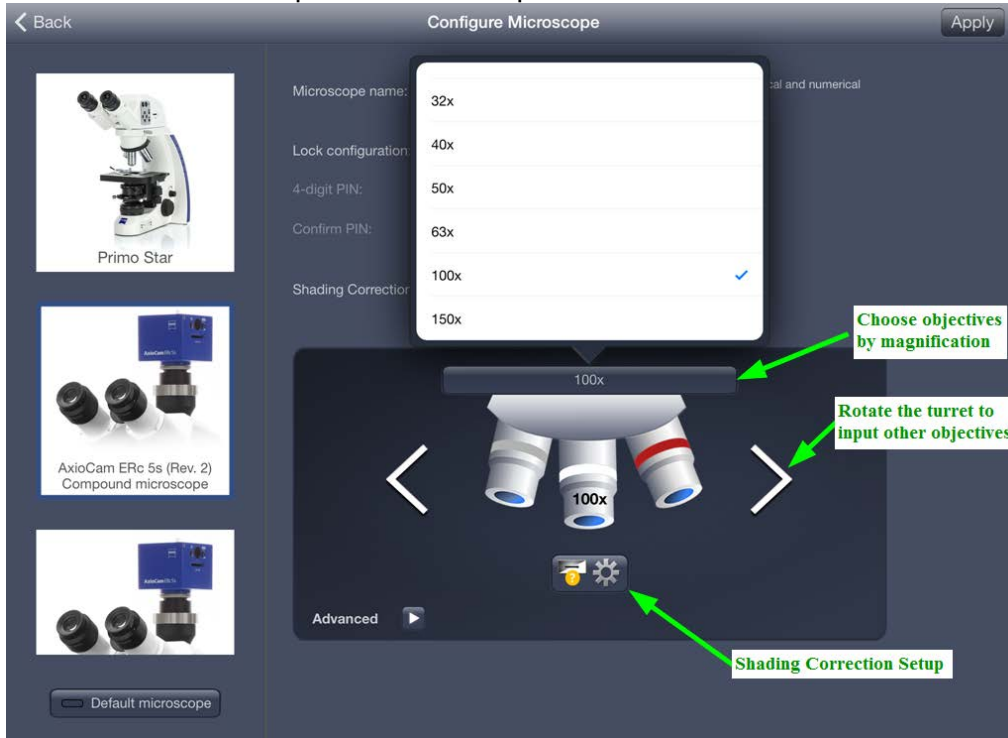
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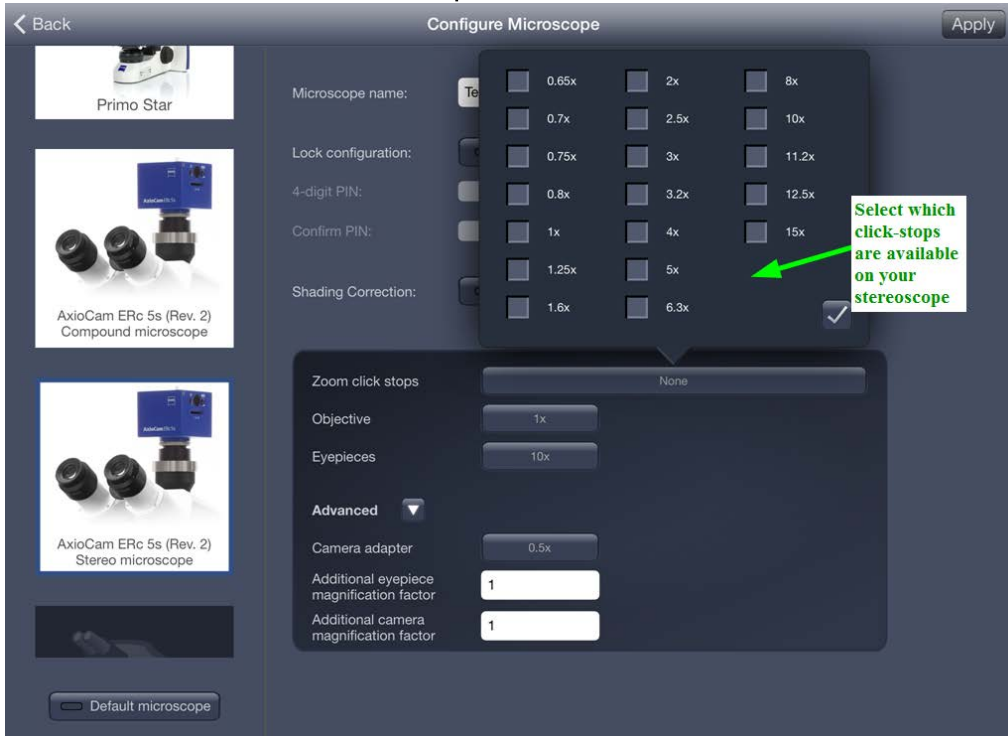
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Axiocam ERc 5s (Rev. 2), compound microscope



Axiocam ERc 5s (Rev. 2), stereo microscope



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For all systems, you can configure the following options:

Microscope name: Give this system a unique identifying name (max. 12 characters, no spaces)

Lock configuration: Add a security code so that no one can alter this configuration without a passcode

Shading correction: Enable or disable the shading correction that you create for this system. Click the gear underneath the rotating nosepiece to enter the shading correction setup.



Magnification: It is possible to add the objective lens to the configuration so that you can properly scale the images. It is recommended that you add objectives for the purpose of tracking your imaging data. Scalings allow for accurate measurements in microns.

When you are all set, click Apply (top right). Repeat this process for any additional systems.

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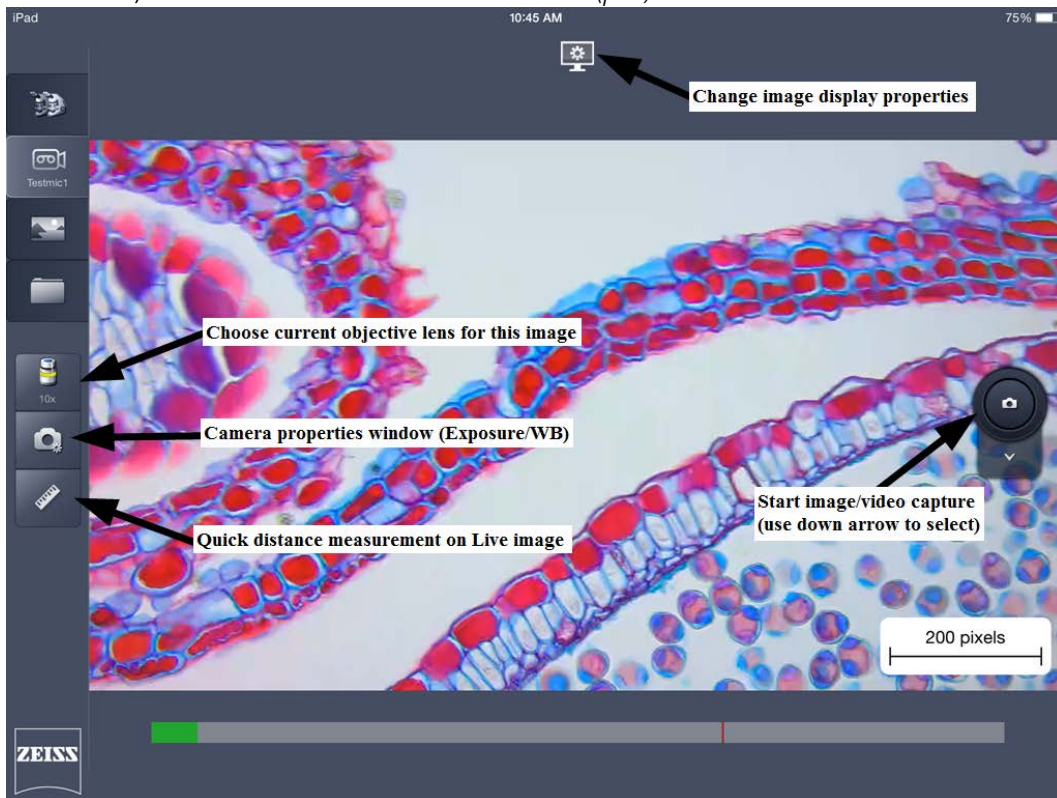
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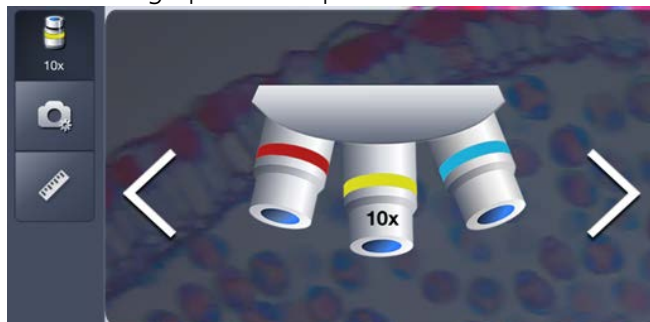


Imaging

From the home screen, click on the live window for the system you wish to view. *NOTE: With a camera attached, the scale bar will read in microns (μm).*



Choose objective: Select the objective that is currently in place on the microscope so proper scalings are connected to the image prior to capture



Set the exposure and white balance: Choose from automatic or manual camera controls



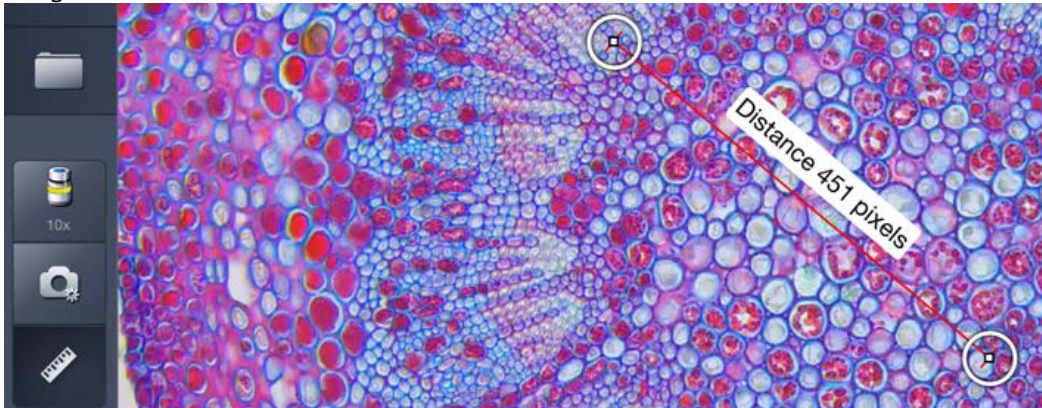
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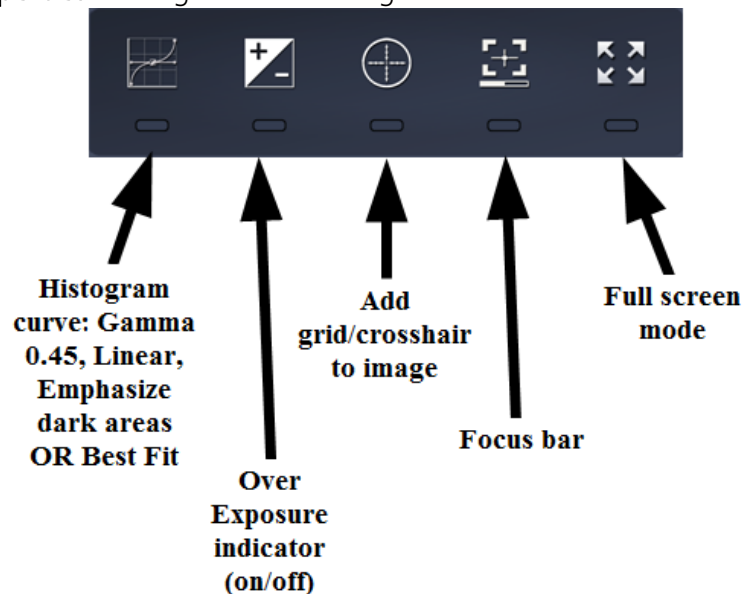
Live measurements: Enable a length tool on the Live image. Grab the handles to change the size and angle of the line



Snap: Choose to capture single images or begin a video recording (via the drop-down menu)



Image display properties: Change how the image looks on the screen



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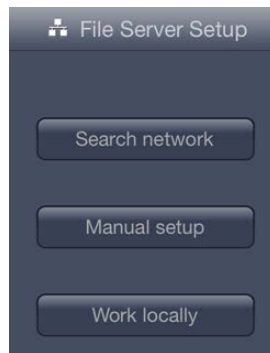
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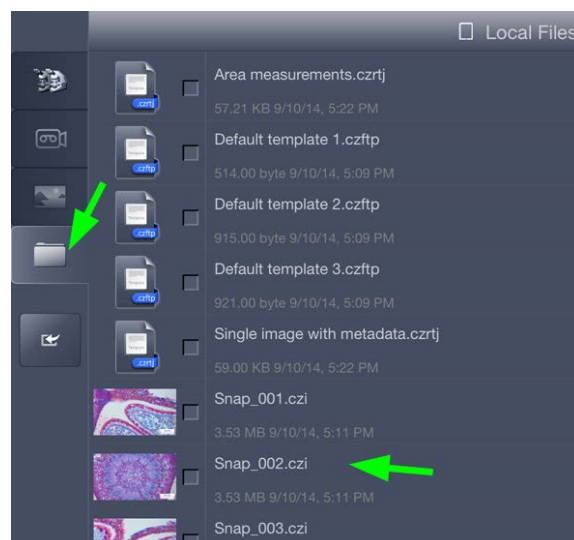
Reviewing, Processing and Exporting Images

When you have snapped an image/video, or when you would like to review images you've taken or shared, switch to the folder screen. Initially, you will see files taken locally on this iPad. To change views, click the tree icon (top right, below the iPad battery indicator).



In this window, you can search your network for a file server (top), manually locate and connect to a file server on a domain (middle), or work with images on your iPad (bottom).

Labscope contains some basic image processing features so you can work on your images directly from the app. To view images you've already captured or ones you've imported to Labscope, click on the folder icon. You will now see a list of images you have access to view. To view an individual image up close, click on that image.



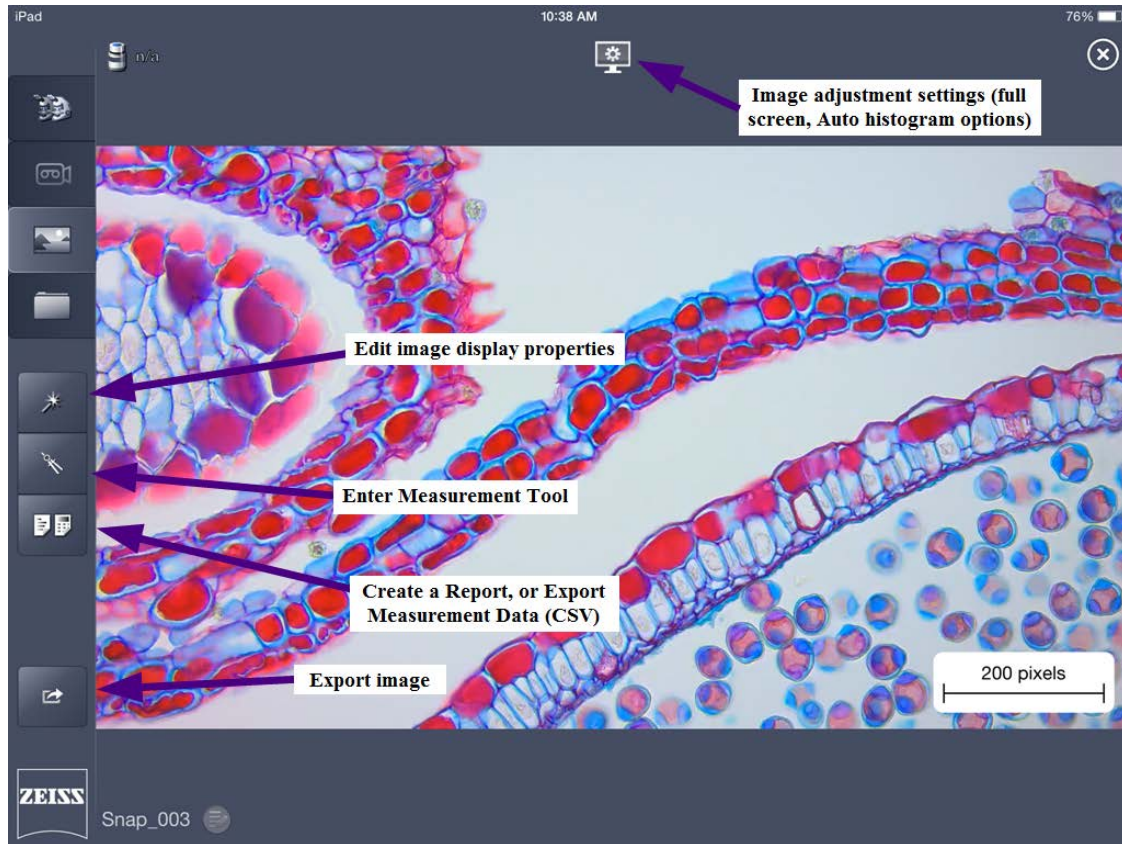
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Upon opening an image, you will be presented with the following tools:



Edit image display properties: Change brightness, gamma, contrast, color intensity (saturation) and sharpness of detail; rotate the image; flip the image horizontally, vertically, or both; cut a Region of Interest (ROI) from the image



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ROI screen detail – Choose a shape for the ROI (rectangle/square, circle, triangle) and use the handles at the corners and the rotation handle to specify the ROI to cut out.



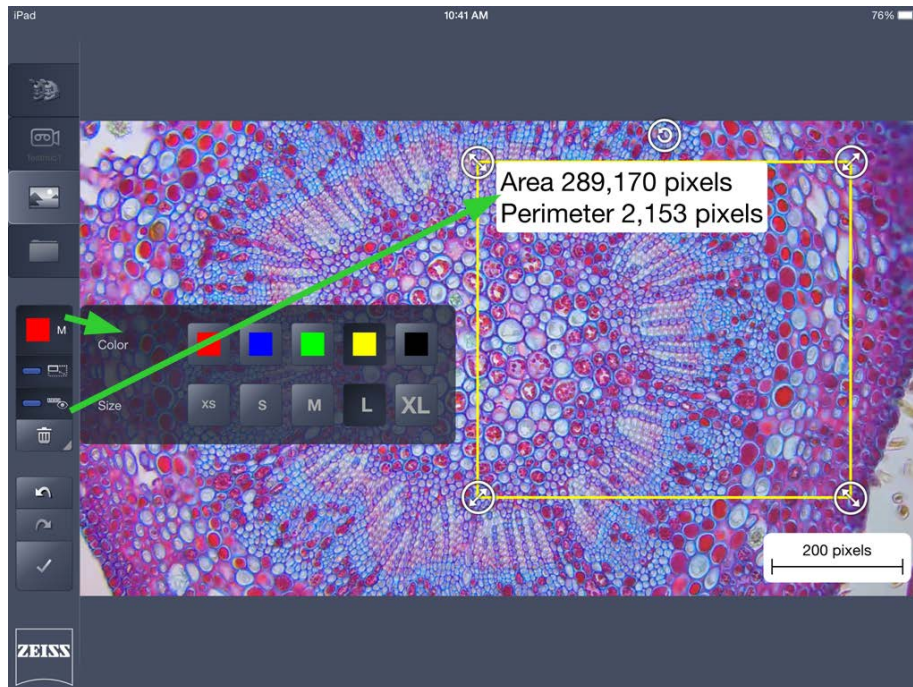
For any changes you make, use the checkmark (lower left) to accept them and the “X” to reject them and return to the previous screen.

Measurement Tool: Choose a tool to place on the image from the top of the window. If necessary, click on the image to add relevant points (such as where to place the vertices of a parallelogram). Use the grab handles at the corner to reshape the tool. Click the color block (left side) to open the tool options (change the color of the outline, size of the text and border). Activate the feature right below the color block to lock the tool to expand or contract proportionally. Activate the third tool, with a scale bar and an eye, to display the area and perimeter of the tool on the image. (*see image on next page*)

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Additionally, click on the Scale Bar in the image to drag it around the image or position it in another corner of the image.

For any changes you make, use the Checkmark (lower left) to accept them and the "X" to reject them and return to the previous screen.

Create a report, or export measurement data: Once you have performed all of your measurements, you can format that data into a preloaded Report template in Labscope.



Alternatively, choose to export the data to a CSV file, which you can then mail to yourself (see the next section) or copy to shared network for further processing in Excel. ZEN 2012 will also open the CSV file for access to ZEN's data processing features.

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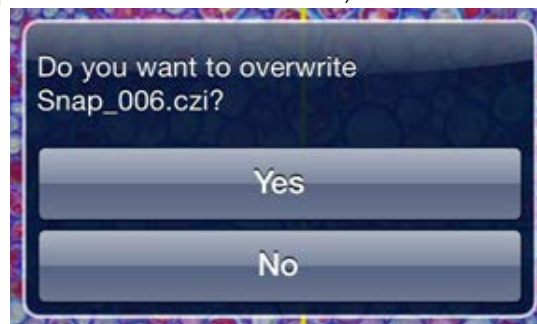
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< Back		Snap_006(02)			
Name::Name	Time::Time!!I	Area::Area!!R	Center X::CenterX!!R	Center Y::CenterY!!R	Perimeter::Perimeter!!R
		pixels			pixels
Rectangle	1	289170	885	317	2153

If you have added any tools; manipulated the image display; or created a report and you wish to save the result, press the Save button (floppy disk, lower left). You will be prompted to overwrite the existing image file. If you say YES, the original image will be overwritten. If you say NO, a second image with the adjustments will be saved in addition to the original image; the updated image will now be called "original_file_name(01, 02,03, etc).czi" (czi or jpg, depending on your Save options – more on that later).



When you are all done with your images and would like to move them off the iPad, you can:

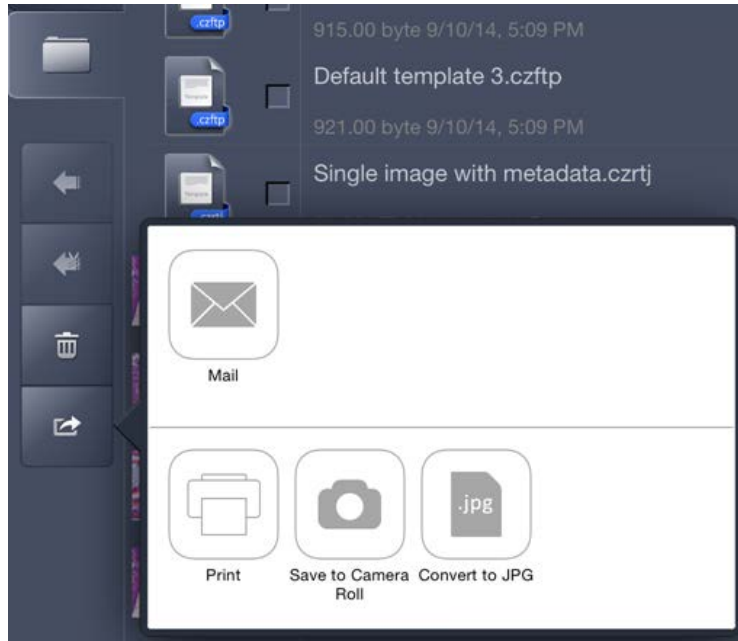
- 1) Connect to a server and offload the images directly to a shared folder (through the Folder icon, using the branch menu to access the drive).
- 2) Connect the iPad to iTunes and offload the images from Labscope (switch to the iPad in iTunes, click the Apps tab, and scroll down to File Sharing). Now you can offload CZI files and preserve image scalings and annotations.
- 3) Save the images to the iPad's Camera Roll, connect the iPad to a computer and offload the images (automatically converted to JPG format – scalings and annotations are lost).
- 4) Print the images (physical copies) or mail the images to yourself (through the iPad's mail client – you must set up your email to do this).

To perform options 3 and 4, switch to the Folder icon and place a checkmark next to the items you wish to move elsewhere. Click the share button (rectangle with an arrow going up and to the right).

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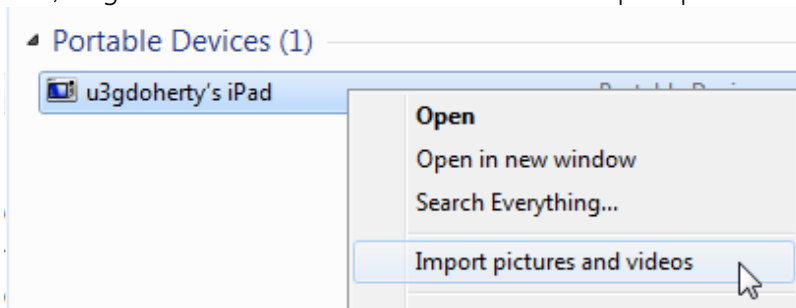
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NOTE: The "Convert to JPG" option will only appear if no JPG files are highlighted.

If you choose to save to camera roll, select the files you want and then choose this option. Then, connect the iPad to a computer. Once the iPad is recognized, locate the iPad in My Computer (Windows). Right-click on the iPad and choose to "Import pictures and videos."



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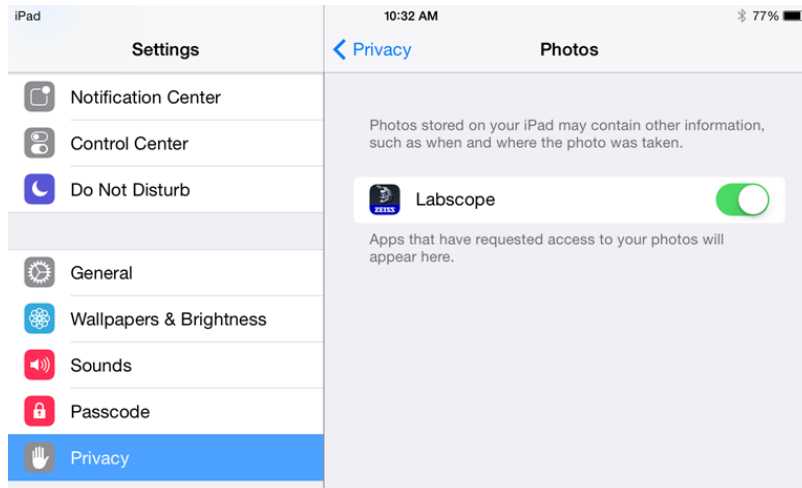
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Troubleshooting

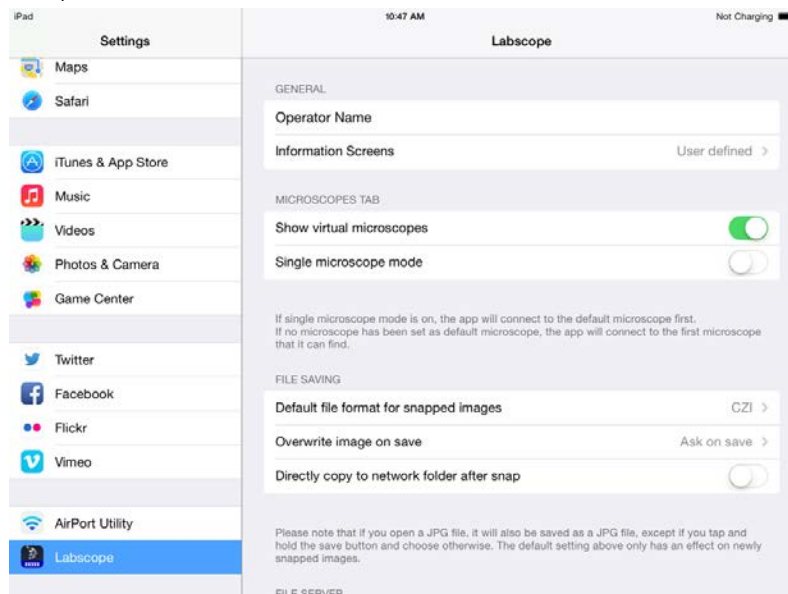
- 1) I do not have the option to "Save to Camera Roll."

Solution: Open the iPad Settings and click "Privacy." Click on Photos and ensure that the Labscope app is allowed access to Photos.



- 2) My images are saving only as JPGs/only as CZIs, and I would prefer the other format/both formats at once.

Solution: Open the iPad Settings and scroll down to the Labscope entry. Here, you can choose the default image format; decide if Labscope will automatically overwrite files on saving; and select if images should be automatically saved and uploaded to a network folder after capture.



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- 3) I offloaded my CZI files to my computer but no program will open them. How can I open them?

Solution: You must install a program that will read CZI files. The best software for this is ZEN, from Zeiss. You can download ZEN lite from the following link:

http://www.zeiss.com/microscopy/en_us/products/microscope-software/zen-lite.html#downloads

ZEN allows for manipulation of the image; the addition, modification or removal of measurement tools; and it gives you the ability to export your image to other file formats for presentations, emails, etc.