Manuals+ — User Manuals Simplified.

# iOptron ST-80 Digital Microscope User Guide

Contents

iOptron®

iOptron ST-80 Digital Microscope

The ST-80 Microscope

Thank you for purchasing your student microscope from iOptron®. The ST-80 Microscope is both versatile and easy to use with the ability to magnify objects 4x to 1024x. In addition, it comes with an electronic eyepiece to allow you to directly view and capture images or videos onto your computer. The ST-80 Microscope makes studying plant and insect samples easy and fun.

Parts Diagram
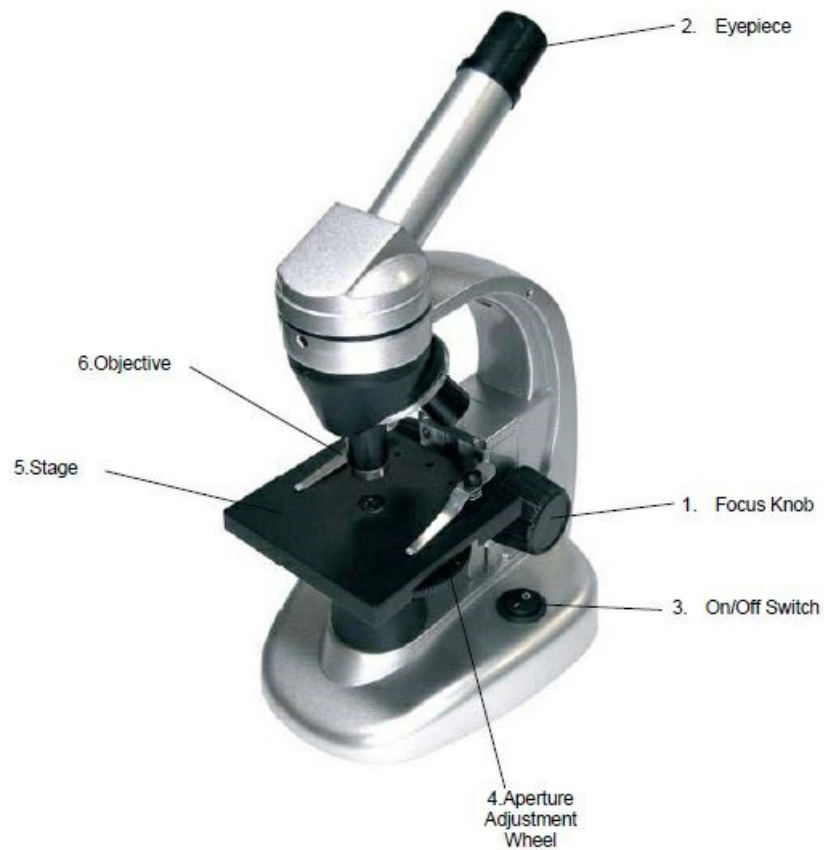
Additional Parts:

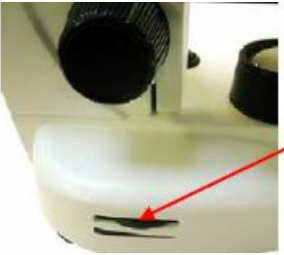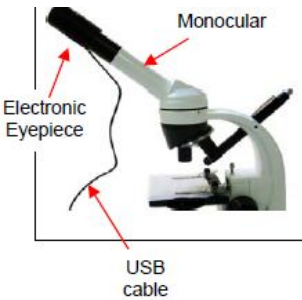- CD with Driver and Software Electronic eyepiece
- 5V Power Adapter Microscope Cover
- Sample Box
- Hard Case
- Light Pen

Caution: This device includes some sharp objects. Adult supervision is required when children are using devices.

Setting Up Your Microscope

	Step 1. Setting the monocular. Loosen the fastening screw (need picture), twist the monocular attachment to the desired position, and retighten the fastening screw.
	Step 2. Setting the objective. Rotate the revolving nosepiece to select the 4x objective. *Do not rotate the nosepiece by the objectives. Instead, use the ring above the objectives*
	Step 3. Setting the mechanical stage. Raise the stage with the focusing knob until it cannot go any further. Focusing knob
	Step 4. Setting the illumination unit. Spin the illumination wheel to the lowest setting.
	Step 5. Connecting the power. Connect the power adapter to the microscope before plugging it into the wall outlet.

Setting Up Your Electronic Eyepiece

	Step 1. Removing the eyepiece. Remove the original eyepiece AND eyepiece attachment tube *(inside) of* the monocular. Insert the electronic eyepiece into the monocular tube *(as shown in the picture here).* **Step 2. Connecting the electronic eyepiece to the computer via the USB cable.**

Transmission Microscopy

Light is transmitted through the sample. (For transparent or translucent samples)

- **Step 1. Turning on the illumination unit.**

  Turn on the illumination unit by pressing the on-off switch.

- **Step 2. Setting the slide.**

  Place the desired sample slide on the stage, and push it under the holding clamps. Alternatively, press down on the back of the holding clamp (see red arrow).

- **Step 3. Centering the slide.**

  Adjust the sample slide, so that the sample is in the light cone from the illumination unit.

- **Step 4. Focusing the image.**

  Look through the eyepiece and focus the image by slowly lowering the stage using the focusing knob.

- **Step 5. Increasing the magnification.**

  Change the objective to 10x or 40x, or change the eyepiece to 16x WF Ocular for a more detailed view. Readjust the focus as necessary.

- **Step 6. Perfecting the image.**

  After having selected the desired magnification, try to increase or decrease the illumination intensity and to rotate the aperture adjustment wheel. Readjust the focus as necessary. A smaller aperture opening increases the contrast but reduces resolution. A larger aperture opening increases the resolution but reduces contrast.

Aperture
diaphragm

Aperture
Adjustment
wheel
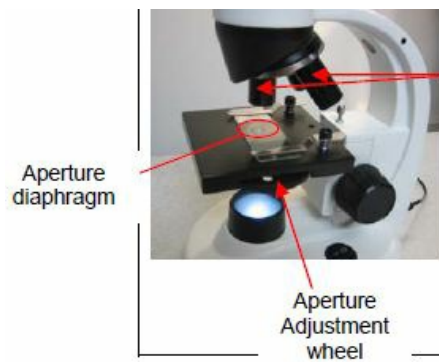
Reflection Microscopy

Light is reflected off the sample. For opaque samples

		Step 1. Setting up a light pen.
		Open the light pen by unscrewing the cap. Insert two (2) AAA batteries in the orientation as indicated in the photo.
		Place the cap back on the light pen.
		Step 2. Attaching the light pen. Insert light pen into the opening for light pen, and turn on the light pen. Adjust the light pen until the beam is over the opening on the stage. Tighten the fastening screw with a 2mm Allen wrench *(not included)* until the light pen is secure.
		Step 3. Getting the image you want. To focus the image — repeat steps 2 through 6 above in *Transmission microscopy*.

User Guide for installing driver and software

Installing the Driver (use a. or b.)

- **For Windows Vista and Windows 7:**
  - Please plug in the electronic eyepiece into the computer via its USB cord.
  - Windows Vista and Windows 7 will automatically detect the camera and search for appropriate driver to download and install.
  - If Windows cannot find the correct drive, follow the procedure for Windows XP users.
- **For Windows XP or earlier versions:** In the CD that came along with the product, please find IC50C-100006.EXE file. Double click on the file, and follow the installation instructions.


Installing the software

- It is unnecessary for you to install the VirtualDub.exe. To run the software, you can simply double click VirtualDub.exe (32 bit users) in VirtualDub-1.9.7 32Bit folder or VirtualDub64.exe in VirtualDub-1.9.7 64Bit folder.
- If you do not wish to keep running the software from the CD, feel free to copy the VirtualDub-1.9.7 32Bit folder or VirtualDub-1.9.7 64Bit folder to a location of your preference on your computer. Run the software in the same way as you would on the CD.
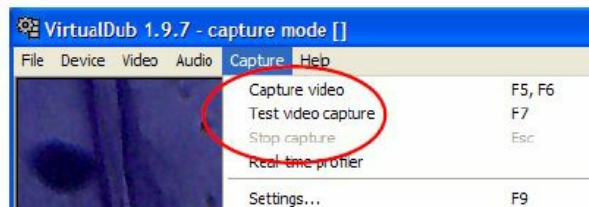
How to record your experiment

- Open VirtualDub software.
- Under File Menu, select Capture AVI… to enter Capture Mode.

- In Capture Mode, under Device Menu, select Basic WebCam.
- In Capture Mode, under File Menu, select Set Capture File… and save the file to an easily found location of your choice. Later, that file will hold the raw record that you will capture.
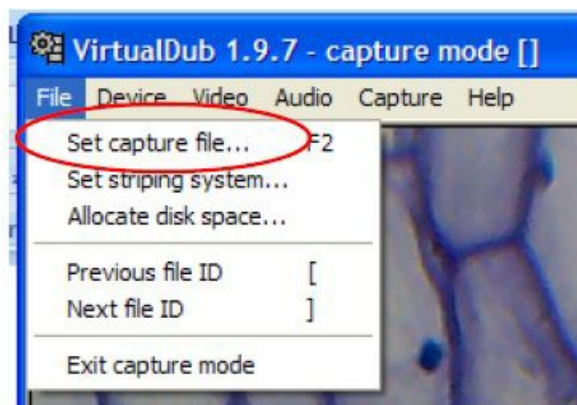
- In Capture Mode, under Capture Menu, select Capture Video to start recording your experiment.

- In Capture Mode, under Capture Menu, select Stop Capture to stop recording your experiment.
- In Capture Mode, under File Menu, select Exit capture mode to return to main window.
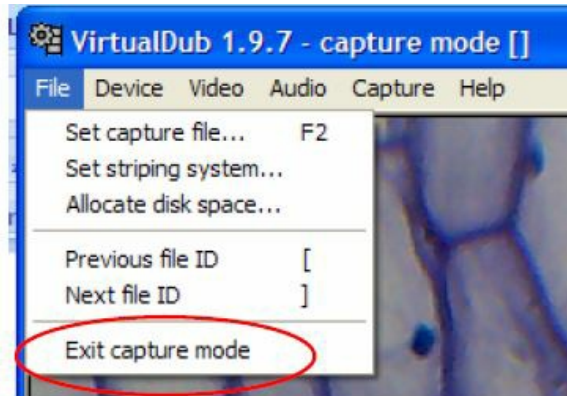
How to create a video or image sequence of your experiment

- In the main window, under File Menu, select Open Video File and open the file that you set earlier.
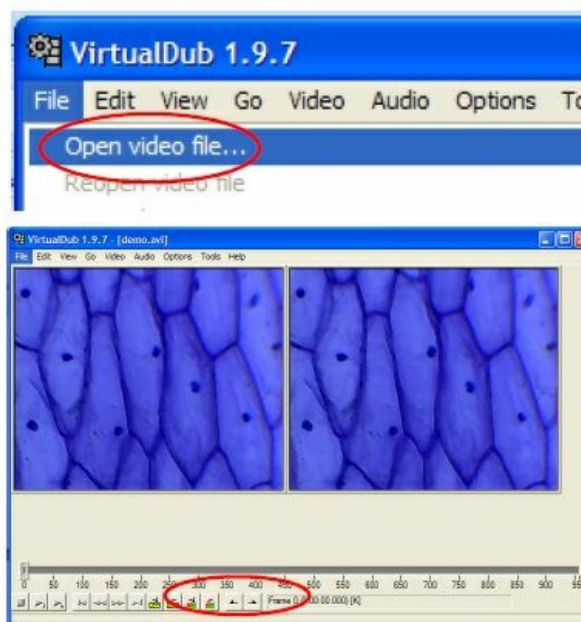
- You can use the buttons on the bottom and arrow keys to play and move through your video. Use the Mark in
   and Mark out buttons to select the most interesting part of your experiment.

Saving and Exporting Files

- Under File Menu, select Save as AVI… to save the selected section of your experiment and make an individual video.
- Under File Menu, in Export, select Image Sequence… to show the selected section of your experiment in a series of image files. Set the desired Filename, Directory, and JPEG output format to select where you want save your images.
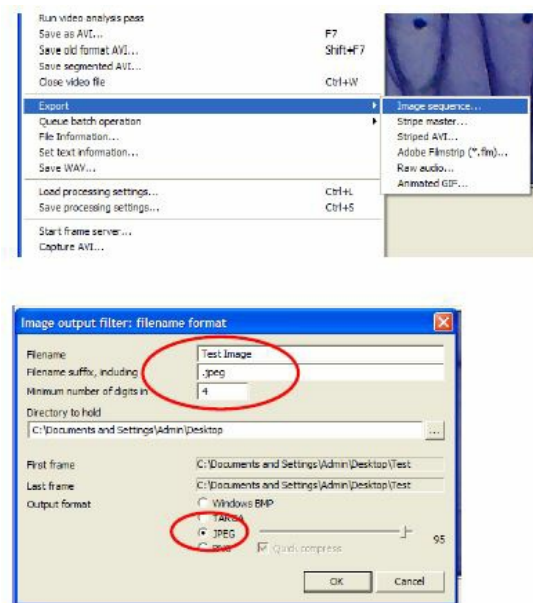
The enclosed CD includes a free video/image software, VirtualDub for demonstration. You can also use other software to do video/image capturing. VirtualDub is a video capture/processing utility for 32-bit and 64-bit Windows platforms, licensed under the GNU General Public License (GPL). Please visit **www.VirtualDub.org** for more information.

IOPTRON ONE YEAR MICROSCOPE AND ACCESSORIES WARRANTY

1. iOptron warrants your microscope and accessories to be free from defects in materials and workmanship for one year. iOptron will repair or replace such product or part which, upon inspection by iOptron, is found to be defective in materials or workmanship. As a condition to the obligation of iOptron to repair or replace such product, the product must be returned to iOptron together with proof-of-purchase satisfactory to iOptron.

2. The Proper Return Authorization Number must be obtained from iOptron in advance of return. Call iOptron at 1.866.399.4587 to receive the number to be displayed on the outside of your shipping container.

- All returns must be accompanied by a written statement stating the name, address, and daytime telephone number of the owner, together with a brief description of any claimed defects. Parts or product for which replacement is made shall become the property of iOptron.

- The customer shall be responsible for all costs of transportation and insurance, both to and from the factory of iOptron, and shall be required to prepay such costs.

- iOptron shall use reasonable efforts to repair or replace any microscope and/or accessories covered by this warranty within thirty days of receipt. In the event repair or replacement shall require more than thirty days, iOptron shall notify the customer accordingly. iOptron reserves the right to replace any product which has been discontinued from its product line with a new product of comparable value and function.

- This warranty shall be void and of no force of effect in the event a covered product has been modified in design or function, or subjected to abuse, misuse, mishandling or unauthorized repair. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

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- Some states do not allow the exclusion or limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you.
- This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.
- iOptron reserves the right to modify or discontinue, without prior notice to you, any model or style microscope.

If warranty problems arise, or if you need assistance in using your microscope and/or accessories, contact:

iOptron Corporation Customer Service Department 6E Gill Street Woburn, MA 01801

- [**www.ioptron.com**](http://www.ioptron.com)
- **Tel.** (866) 399-4597 (toll free in US)
- **Tel.** (781) 569-0200
- **Fax.** (781) 935-2860
- Monday-Friday 9AM-5PM EST

NOTE: This warranty is valid to U.S.A. and Canadian customers who have purchased this product from an authorized iOptron dealer in the U.S.A. or Canada or directly from iOptron. Warranty outside the U.S.A. and Canada is valid only to customers who purchased from an iOptron Distributor or Authorized iOptron Dealer in the specific country. Please contact them for any warranty service.

FREQUENTLY ASKED QUESTIONS

What is the iOptron ST-80 Digital Microscope?

The iOptron ST-80 Digital Microscope is a digital microscope designed for scientific observation and exploration. It features a built-in digital camera for capturing images and videos of microscopic specimens.

What is the magnification range of the ST-80 Digital Microscope?

The iOptron ST-80 Digital Microscope typically offers a variable magnification range, allowing users to zoom in and observe specimens at different levels of detail. Check the product specifications for detailed information on magnification.

What is the resolution of the built-in digital camera?

The resolution of the built-in digital camera in the iOptron ST-80 Digital Microscope can vary. It is designed to capture high-quality images and videos of microscopic subjects. Refer to the product specifications for detailed camera resolution information.

Is the ST-80 microscope suitable for educational purposes?

Yes, the iOptron ST-80 Digital Microscope is suitable for educational purposes, providing students and enthusiasts with a tool for studying microscopic specimens in detail.

What type of lighting does the ST-80 microscope use?

The iOptron ST-80 Digital Microscope typically uses LED lighting for illumination. LED lighting provides bright and even illumination for the observation of specimens.

Can the ST-80 Digital Microscope be connected to a computer?

Yes, the iOptron ST-80 Digital Microscope is often designed to be connectable to a computer. This allows users to view and capture images and videos directly on a computer screen using the included software.

What is the field of view of the ST-80 microscope?

The field of view of the iOptron ST-80 Digital Microscope can vary depending on the magnification level. It is the area visible through the microscope eyepiece or camera at a specific magnification setting.

Is the ST-80 microscope suitable for hobbyists and amateur scientists?

Yes, the iOptron ST-80 Digital Microscope is suitable for hobbyists and amateur scientists who are interested in exploring the microscopic world. It provides a user-friendly platform for observing and documenting various specimens.

What is the power source for the ST-80 Digital Microscope?

The power source for the iOptron ST-80 Digital Microscope can vary. It may be powered by batteries or through a power adapter. Check the product specifications for information on the power source.

Does the ST-80 microscope come with image capture software?

Yes, the iOptron ST-80 Digital Microscope typically comes with image capture and viewing software. This software allows users to capture, save, and analyze images and videos obtained through the microscope's digital camera.

What is the construction material of the ST-80 microscope?

The iOptron ST-80 Digital Microscope is often constructed with durable materials such as metal and plastic. The choice of materials ensures stability and longevity for the microscope.

Can the ST-80 microscope be used for live specimen observation?

Yes, the iOptron ST-80 Digital Microscope can be used for live specimen observation. The real-time imaging capabilities of the digital camera allow users to observe specimens directly on a computer screen during live viewing sessions.

Is the ST-80 Digital Microscope compatible with both Windows and macOS?

The iOptron ST-80 Digital Microscope is typically designed to be compatible with both Windows and macOS operating systems. Users should check the product documentation for specific system requirements and compatibility.

What accessories are included with the ST-80 microscope?

The accessories included with the iOptron ST-80 Digital Microscope may vary. Common accessories include microscope slides, coverslips, a power adapter, USB cable, and image capture software. Refer to the product package or documentation for a list of included accessories.

What is the weight and dimensions of the ST-80 Digital Microscope?

The weight and dimensions of the iOptron ST-80 Digital Microscope may vary. Check the product specifications for detailed information on the physical characteristics of the microscope.

Can the ST-80 microscope be used for scientific research?

While the iOptron ST-80 Digital Microscope is suitable for educational and hobbyist use, its application for scientific research may depend on the specific research requirements. Researchers should assess whether the microscope meets their needs and specifications.

DOWNLOAD THE PDF LINK: [iOptron ST-80 Digital Microscope User Guide](#)

References

- **[User Manual](#)**