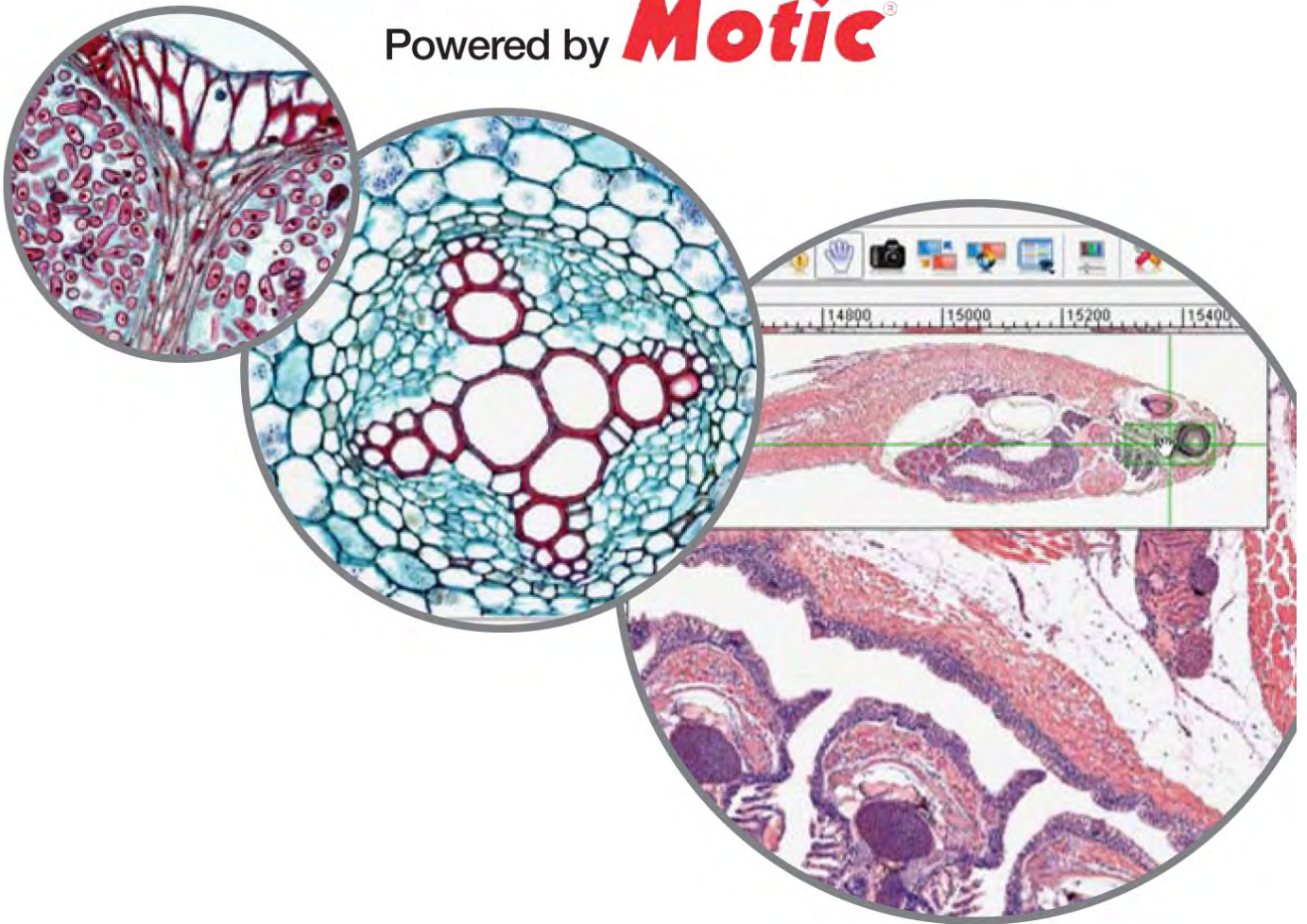


WARD'S Digital Slides

Powered by **Motic**[®]



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Recommended System Requirements

Currently, Ward's Digital Slides are not compatible with Mac operating systems.

The following are recommended system requirements for viewing these slides, located on a remote server.

- Internet access is required for all viewing stations.
- Intel processor with 1 GHz or better processing speed.
- Windows XP or above
- 2 GB RAM or better
- 250 MB available hard disk space

Additional Assistance

For additional assistance, not found in the Help menu or in this file, you can contact us by the following methods:

E-mail: (Please include "Digital Slides" in the subject line)

For specific requests regarding Ward's Digital Slides: wards.slides@motic.com

For General Help with Ward's Products: ScienceHelp@vwreducation.com

For Customer Service: customer_service@wardsci.com

Phone:

Ward's Customer Service: 1-800-962-2660

Fax:

Ward's Customer Service: 1-800-635-8439

On the Web:

View the help videos at: www.wardsci.com/Digitalslides

Mail:

Ward's Natural Science Est.

P.O. Box 92912

Rochester, NY 14692-9012

Quick Start Guide

Installation Instructions

(You may require administrator authority to install these files. If so, please contact your school's IT department or system administrator.)

- Insert the CD into your CD or DVD ROM drive.
(If the program does not auto run, please open the drive and run the file called "Setup.exe")
- Follow the prompts to install the program.
- A new icon (shown below) will be added to your desktop.



- Open the Ward's Digital Slides program by double clicking the icon.

You can also access the program through your programs menu from the Motic folder.
- You will be prompted to enter your User ID and Password (located on the cover of the CD you received). Only one user at a time will be allowed to access the images with each specific User ID and password.
- You may prefer to utilize the "Remember" option so you do not have to log-in every time you wish to open DSV (Digital Slide Viewer).
- If you have purchased multiple sets, you can change your log-in on the library screen as well, to allow access to those images. (See the instructions on page 14.)

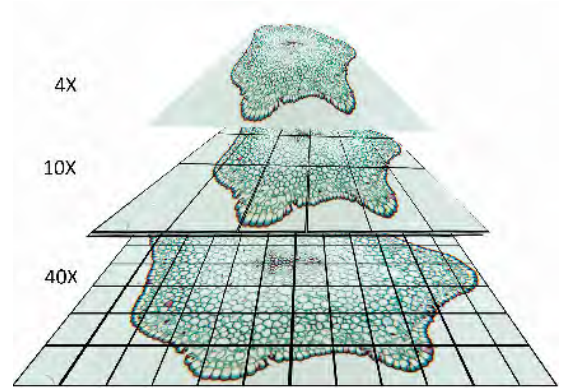
How It Works

Ward's Digital Slides Powered by Motic® is an extension of technology that has been used for over a decade in university education and research.

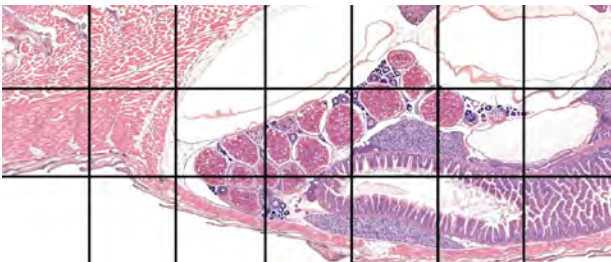
A Ward's microscope slide is the start of the process. We have selected some of our best slides for teaching, doing our best to use only the finest slides available. These aren't just regular high quality Ward's slides, these are the best of the best.

Motic®, a leader in the microscope industry, then applied their experience in digital pathology equipment and software. This experience has given the best quality scans possible.

The slide is placed on a scanning device, and every field of view is photographed using a high resolution camera. Once the entire slide is photographed, these individual images are combined to form a single, very large, composite image. This process is repeated using different objectives, creating a group of images photographed at different magnifications.

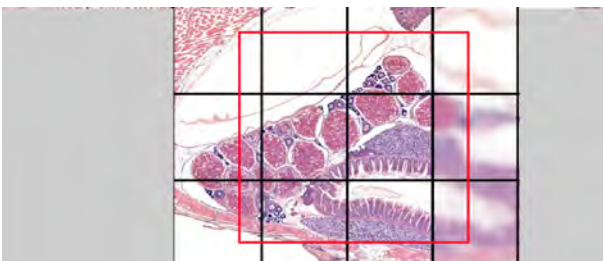
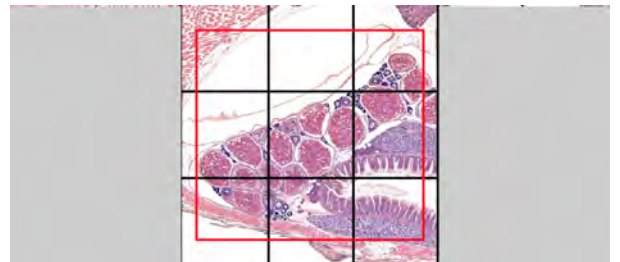


In order to view these very large images more easily and quickly, the viewer accesses only the images from the region and magnification selected. As you move on the slide, you may see areas that appear out of focus. These are new areas being downloaded.



This image represents the whole composite image, with each individual capture represented by the black lines.

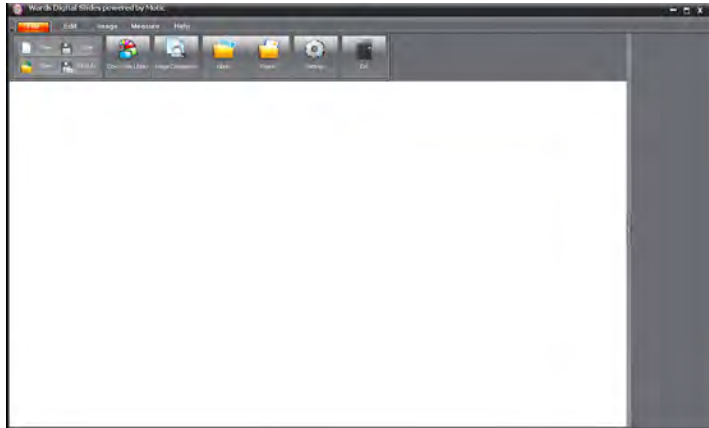
When you are viewing the area represented by the red box, only the individual captures you can see are downloaded.



As you move around the screen, new areas come into better resolution.

Your First View

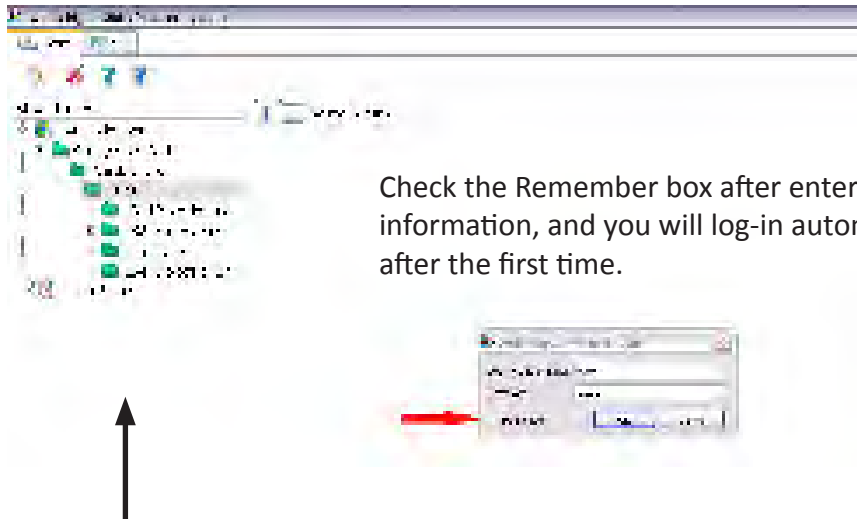
When you first open the program, you will see the Ward's Digital Slides Editor interface.



To view your digital slide library, click on the "Open Slides Library" icon at the top of the screen.



This will open the Digital Slide Viewer and ask for your user name and password. (Located on your CD)



Check the Remember box after entering your information, and you will log-in automatically after the first time.

If you do not see a link to the server in the slide library tree:

Right-click in the slide library. A menu will open and allow you to add a server.

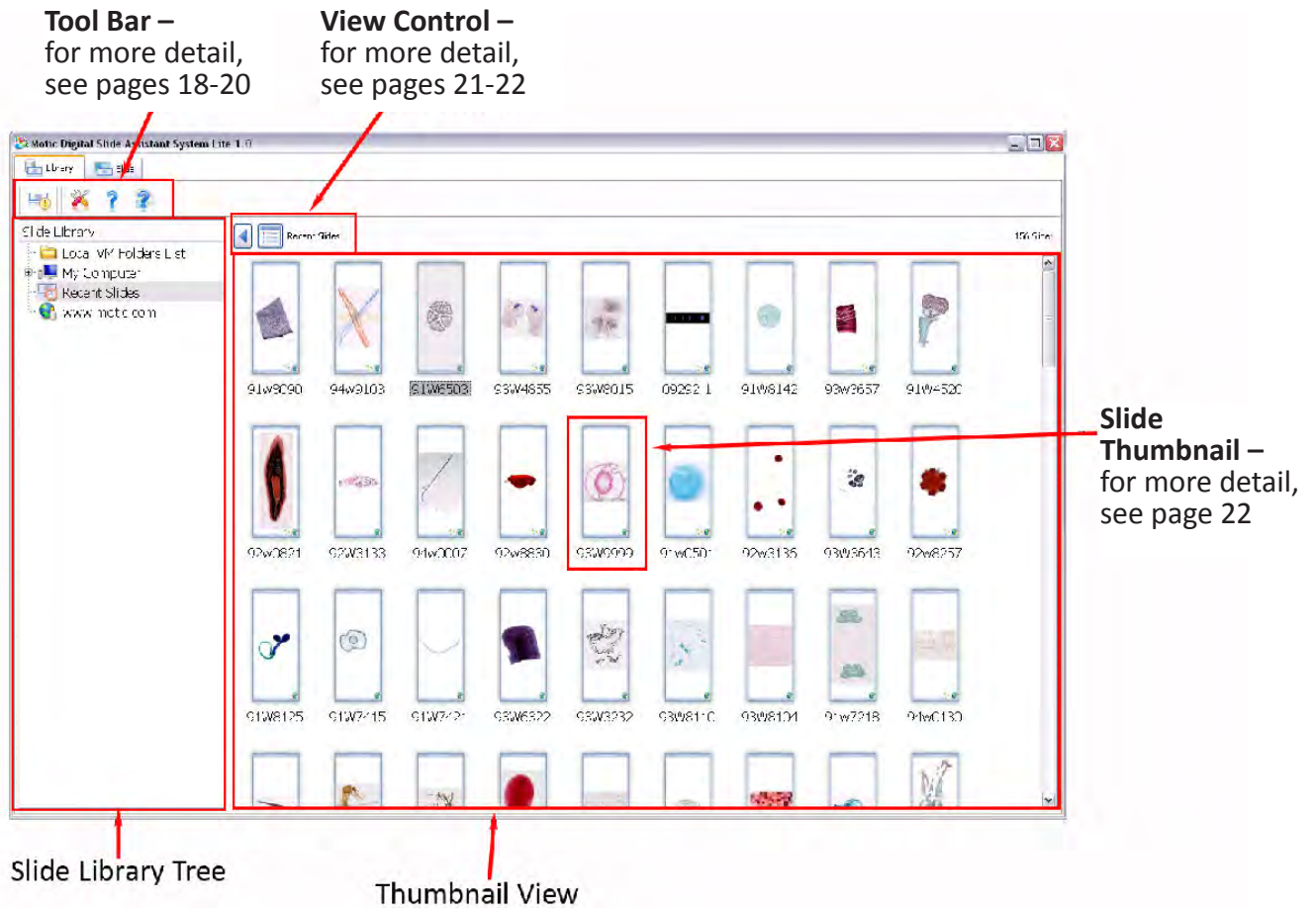
Enter the server as `vwr.motic.com`

Click on the server to open the log-in window.

Expand the server and open your digital slide set by clicking on the folder with the set name.

Navigating the Library

When you first open the Digital Slides Viewer, your window should be similar to the image below. (Note: The first time you open a page of slides it may take a few minutes to load the thumbnails.)

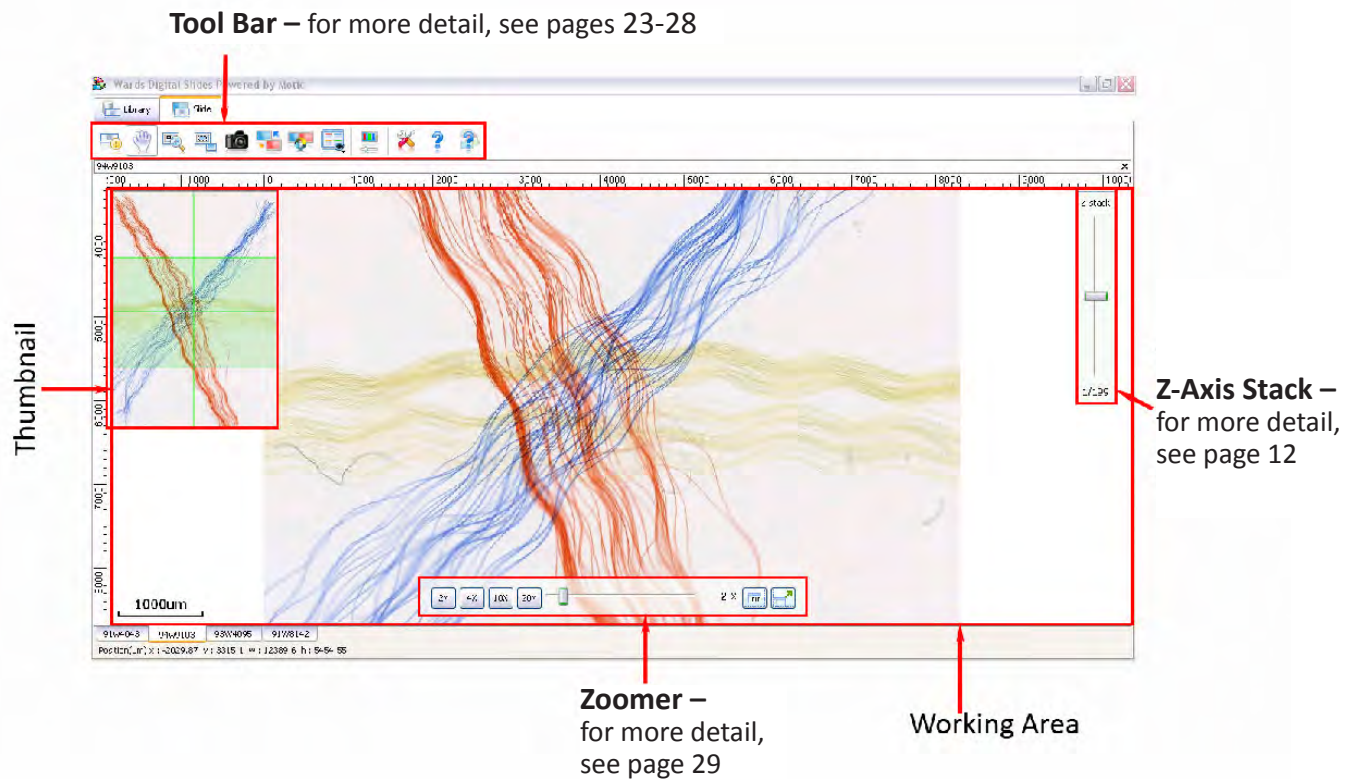


If you cannot see your slide thumbnails when the Digital Slide Viewer opens:

- Open your Slide Library.
- Click on the link vwr.motic.com in the tree view of your Slide Library.
- To view the contents of a folder in this view, click on the folder name.

The Slide Viewing Tab

After double clicking on a slide, you will automatically be taken to the Slide tab as the image is opened. There are many options available on this tab.



The default slide view has five basic parts.

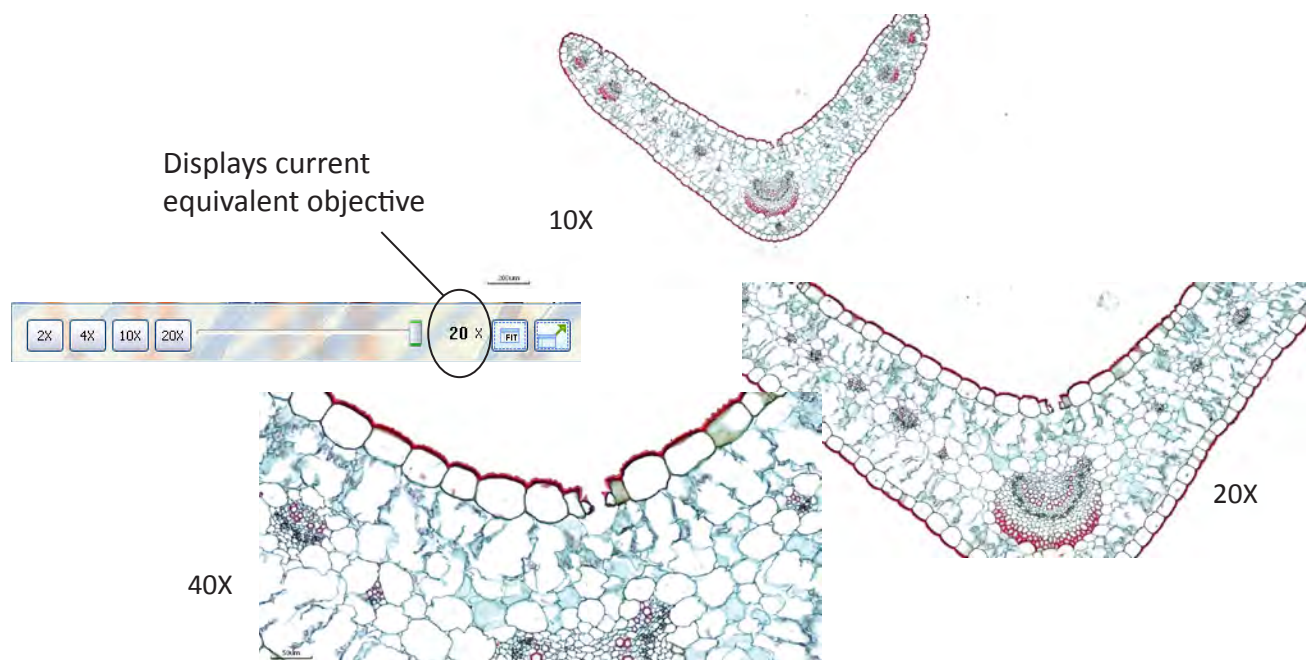
1. The basic tool bar allows for image capture, advanced display options, and image adjustment.
2. The working area is where the slide is displayed.
3. The thumbnail shows the full slide image and highlights the displayed area.
4. The zoomer controls the magnification of the display.
5. The Z-Axis Stack controls the depth of field being viewed. (Only used on select slides.)

Zooming In

When you first open a slide in the working area, the image will automatically adjust so that the entire image will fit into the working area.

If you wish to zoom in (increase the magnification), you can do so in one of three ways. One of these methods uses an icon in the tool bar. The other two methods use the zoomer bar located at the bottom center of the working area. Please be aware that, when using the zoomer bar, the values referred to as objectives are the objectives that were used to scan the slide; this is not the total magnification. The camera acts as an ocular of approximately 10X. If you wish to make comparisons to a traditional microscope, you should multiply the current objective by 10.

The first method of zooming in uses the objective boxes on the left hand side of the zoomer. Clicking on these is similar to changing the objective on a traditional microscope.



The second method uses the slider bar located in the center of the zoomer. If you grab the slider and move it to the right, the current objective is increased. Dragging the slider to the left decreases the magnification. Using the slider allows you to adjust your zoom to intermediate values not available on a traditional microscope. (Hint: If you are using a mouse with a scrolling wheel, the wheel also acts like the slider.)

The last method utilizes an icon in the tool bar. Click on the icon shown at the right, then make a box around the area you wish to display by holding a left click in one corner and pulling the second corner away from the first. The area contained in the box will adjust magnification and center to fit the working area.

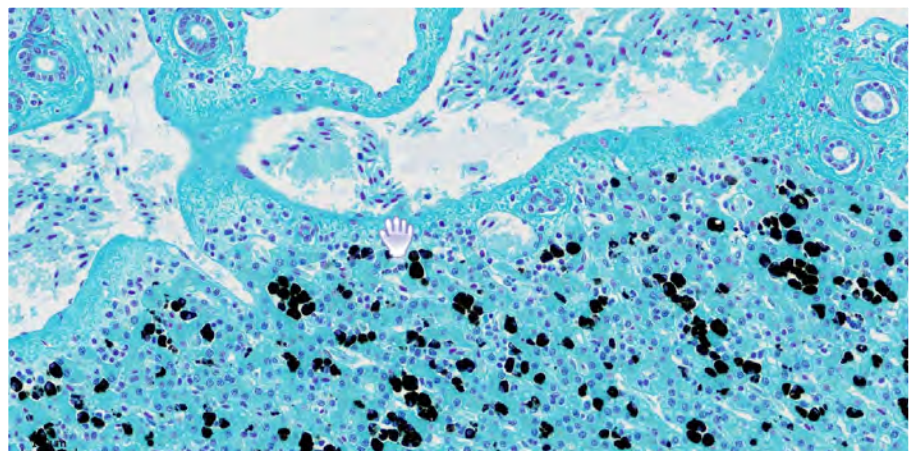
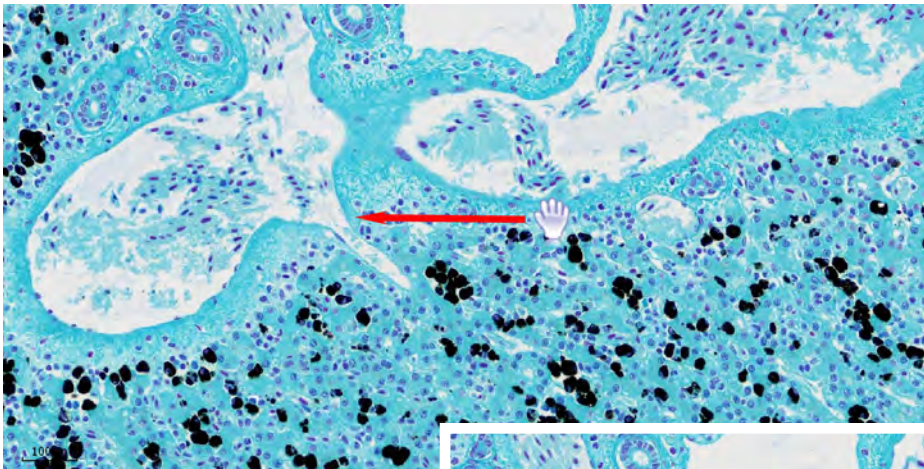


Pan and Scan

In order to view the entire slide, you will want to scan around the image.

The first method of moving around the slide is to move into an area of the slide in the working area, grabbing the slide and pulling it in the desired direction.

In order to accomplish this, make sure that you have selected the move tool, located in the tool bar above the working area. When your mouse is in the working area, an icon that looks like an open hand will appear. (See image at right.) Holding a left click in any area “grabs” the screen and the open hand becomes closed. When you have “grabbed” the slide, the slide moves in whatever direction you pull it.



If you wish to use the keyboard, you can move around using the arrow keys. A single click moves the slide so you are viewing the next row of images in the direction of the arrow key you used. An up arrow click moves the slide one row of images down and a down arrow click moves the image upward. If you repeatedly tap or hold an arrow key, the slide will continue to move after the key is released.

Capturing an Image

Ward's Digital Slides can have images captured from them using two methods. These captured images are stills captured from the current working area or from a selected region within the working area. Depending on how you will be using the image may determine how you wish to capture it.

If you wish to have an image that you can paste directly into a document or presentation, you will probably use the "Copy to Clipboard" icon (shown below) located in the tool bar above the working area.



After clicking this icon, draw a box around the region you wish to capture by clicking and holding in a corner and drawing a box outward. When you release, the area bounded by the box is copied onto your clipboard and can be pasted directly into other documents, using a paste command.



You can also capture images to a file using the camera icon. When Ward's Digital Slides Editor is open (Default), the image is captured into the preview window where it can be edited or saved. In this form, the default file type is .SFC which allows you to retain measurement data and some annotations.

If Ward's Digital Slides Editor is not open, a dialog box will open asking where you want to save the file, and what file type you wish to save as.

When using either method to capture an image, some features are not transferred with the image. The zoomer, thumbnail, and Z-axis stack control will not be captured. Measurement tools like the grid and size bar will transfer with the image.

Z-Axis Stack

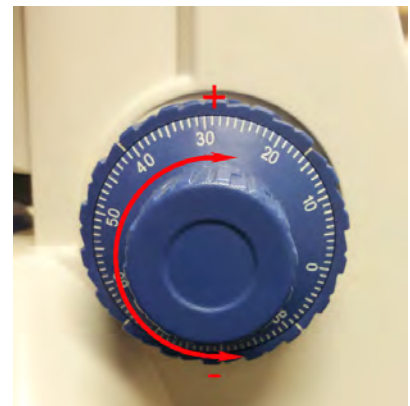
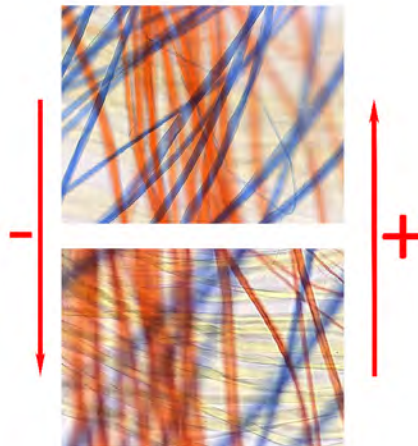
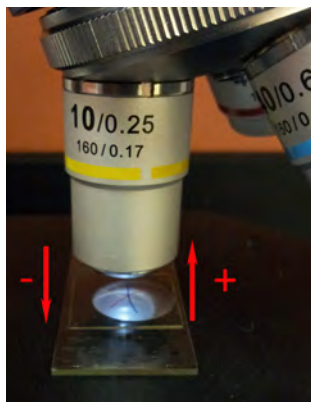


The Z-axis stack control allows you to “focus through” specimens. It indicates that the specimen was thick enough to require more than one layer of scanning in order to make the slide. Using the Z-axis stack is similar to changing the fine focus on a traditional microscope.

Not all slides utilize the Z-axis. Because of the very large files the Z-axis creates, we have only used this feature on slides where the material is not fully viewable within a single depth of field.

When it is present, the Z-axis control slider begins at 0, or the central depth of field layer.

- If the slider is moved up in the positive direction, the slide moves to another scanned depth of field below the previous layer. Functionally this is similar to focusing through material on a traditional microscope, moving toward the slide and away from the cover glass. (The stage on a traditional microscope would move up towards the objective.)
- Movement in the negative direction is away from the slide and towards the cover glass. (The stage on a traditional microscope would move down, or away from the objective.)
- At the bottom of the slider is a figure that allows you to see where you are viewing within the stack.



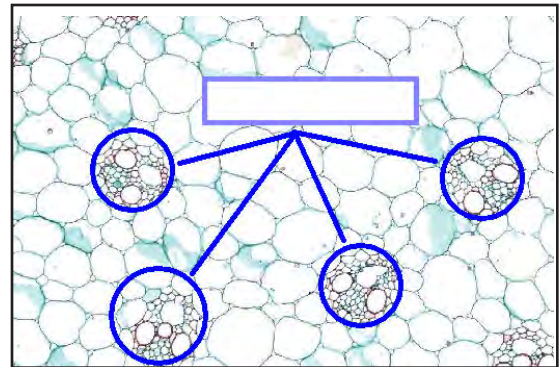
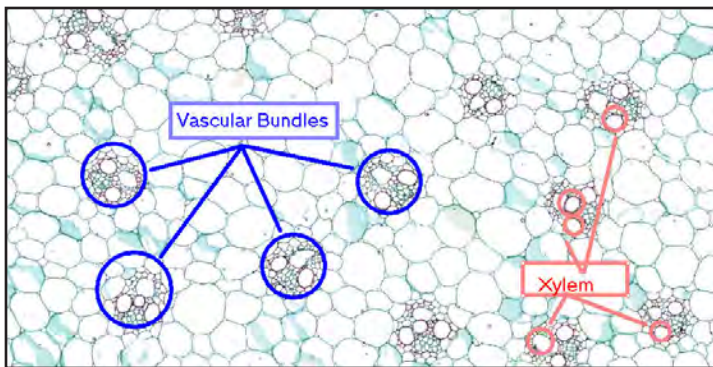
Examples of Z-Axis movement using a traditional Microscope.

Annotation Using the Digital Slides Editor

There are many ways that you or your students can annotate slides in the Digital Slides Editor. Here are two simple methods.

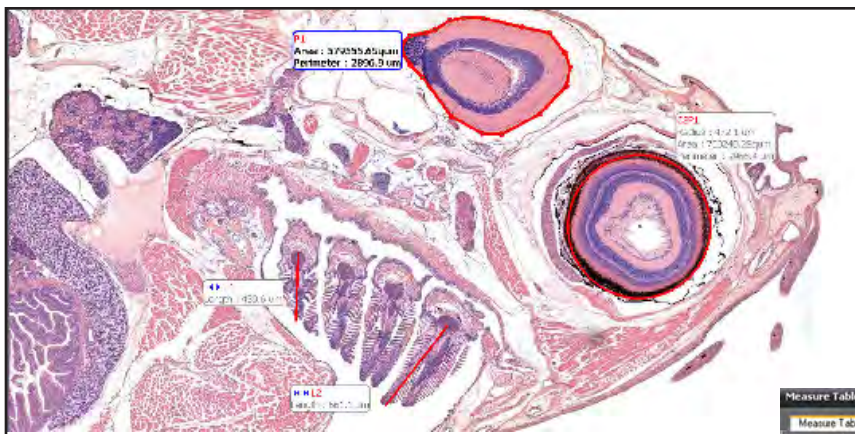
Paint and Text Annotations

Use the Paint and Text control bars to create the annotations on the slide. Right click on a shape and it can be pulled forward. The photos below show how you can create a quiz question from the same image used in a lecture.



Measurement Annotations

Using the Measure tool bar, structures can be measured directly within the Image Editor. This information can be transferred if the file is kept in the .SFC format for the students to perform measurements on another computer as homework or to utilize the measurement bar and perform measurements by hand.



Measure Table		Options								
	Length	Width	Height	Area	Perimeter	Radius	Major half axis	Minor half axis	Angle	Arc
L1	439.6 µm									
L2	561.1 µm									
CSP1				700240.25µm²	2966.4 µm	472.1 µm				
P1				57955.65µm²	2896.9 µm					

After you have made measurements using the measurement tools, you can export the measurements to Excel for analysis. Click on the Measure Table button in the control panel and click "export" to create an Excel file.

Logging in to View Additional Slide Sets

If you wish to view more than one set of slides on a single computer, you will need to change your log-in information to view each set. You can make this change on the library tab in the tree view panel, as described in the instructions below.

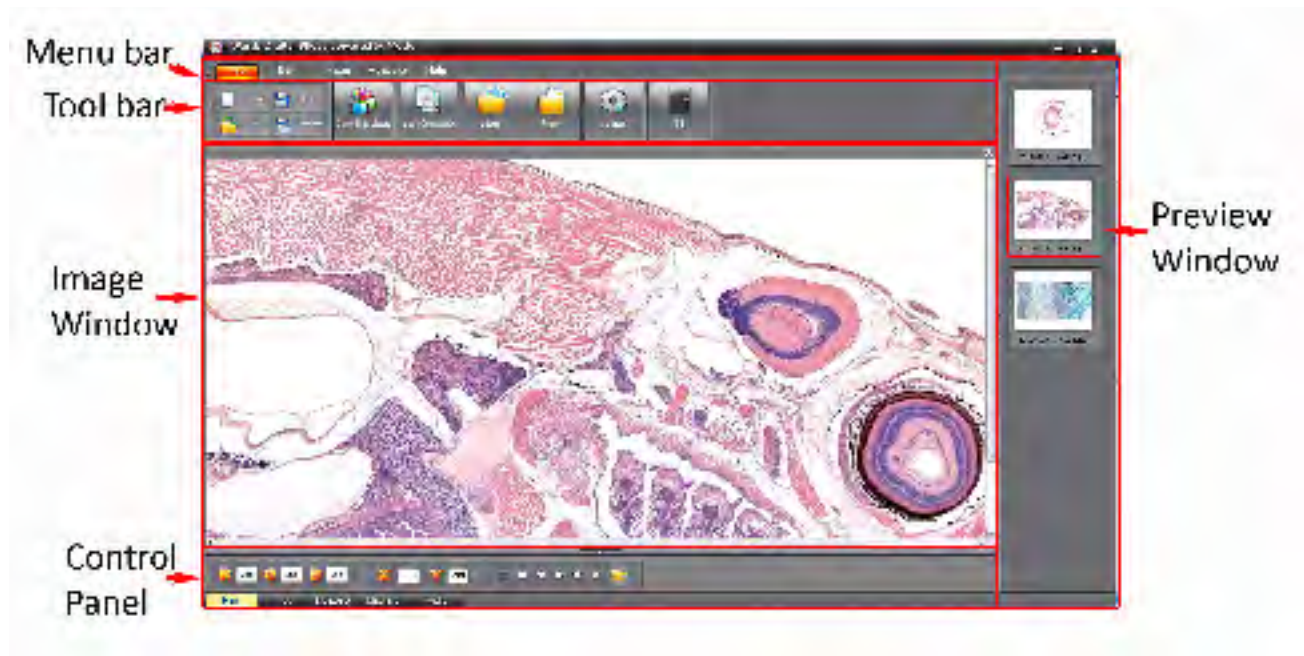
- In the tree view panel, right click on the server name (vwr.motic.com).
- A window will open. Left click "Login With Another Account".
- Enter the log in name and password associated with the set you wish to view. (The log in name and password are located on the CD cover.)
- Click "OK".
- Open the server by clicking on the name. Your second set is now available.

You can record your log-in information for additional kits in the table below. Please remember that only one individual is allowed to be logged in at a given time. If you forget your log-in, please contact us and we can assist you in recovering your information.

Name of Slide Set	User Name	Password

Ward's Digital Slides Editor

If you are already using Motic Images 2.0, the editing interface in the Ward's Digital Slides Editor operates in the same manner. Images captured from the Ward's Digital Slide Viewer can also be used with Motic Images 2.0.



The main window in the digital slides editor has five basic parts:

1. The Menu bar allows you to change between specific tool bars and is located at the top. See the following page for more detail.
2. The Tool bar is dependent on the menu selected. The contents of each tool bar are given in more detail starting with page 30. You can hide the tool bar by clicking the up arrow next to the "File" tab.
3. The Preview Window shows thumbnails and file names of open images. Click on a preview image to open it in the Image Window. The preview window can be hidden using the arrow button located at the border of the preview window and the image window.
4. The Image Window shows the image currently being viewed.
5. The Control Panel shows specific tools and controls for actions that can be performed in the image window. The contents of the control panel are described on the following pages. The control panel can be hidden by clicking the arrow located at the border of the control panel and the image window.

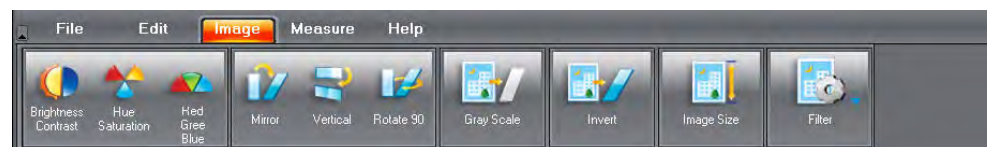
Using Ward's Digital Slides Editor – Menus and Tool Bars



The File menu contains the tools you will use to create, open, save, acquire, and compare slide images. Using this menu, you will also be able to adjust your basic settings and create reports. For more detail, see pages 30-31.



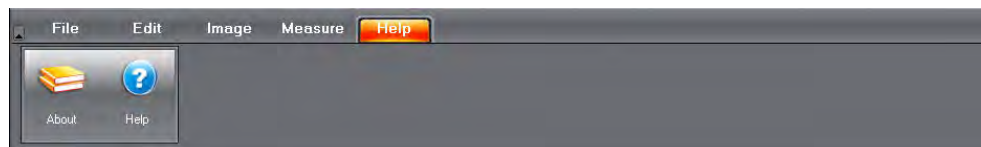
The Edit menu contains tools to select and manipulate parts of an image, as well as the undo and redo commands. For more detail, see pages 32-33.



The Image menu allows you to adjust your image. For more detail, see pages 34-35.



The Measure menu contains tools that allow you to measure the structures within the image. For more detail, see pages 36-38.



The Help menu gives you information about the program. You may be asked for this information if you call for assistance. For more detail, see page 39.

Using Ward's Digital Slides Editor – Control Panels



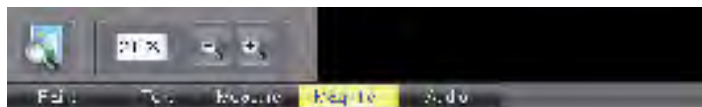
The Paint control bar gives information about the color values (Red, Green, Blue), the position (X, Y) of the cursor on the image, and controls to create shapes on the image. When a shape is selected, a dialog box opens, allowing color and line thickness options to be set.



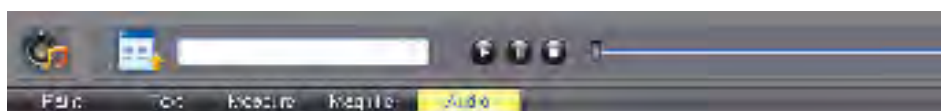
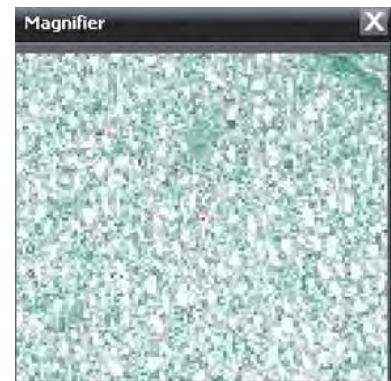
The Text control bar allows you to change the color, font, and justification of text, as well as placing text onto the image for annotation. Click on the “T” and then click on the location in the image where you wish to type.



The Measure control bar allows you to change the unit of measure and accuracy of a measurement. You can also change the color of the measurement or, by clicking on the “Measure Table” button, add or adjust the style of the measurements.



The Magnifier control bar opens a magnifier. To undock the magnifier, click on the first icon to move the magnifier into the image window. The area magnified is the area around the cursor, not the area under the magnifier window. In this control bar, you can also adjust the additional magnification applied by the tool.



The Audio control bar allows you to add audio files to an image. The audio file must be stored in a location the displaying computer can reference (e.g., a public server, or locally), and be saved as a .SFC file. To add files, right click on the play list icon and select “add”. This will open a window for you to locate the file you desire. To play the audio file, use the play, pause and stop buttons located next to the file name.



DSV Library Tool Bar Icons



Slide Properties

The first icon on the library tab is the Slide Properties icon which will show you basic information about the slide. Clicking on this icon opens a window that shows the following information. This information is not changeable by the end user. This information is also displayed if you hover over the thumbnail of a slide.

Name

- This is the slide name that is displayed on the screen.

Physical Number

- This is the number of a physical slide that matches the digital slide.

Scan Objective

- This is the largest magnification objective used to scan the slide.

Mount Type

- This describes the way the slide was prepared.

Stain

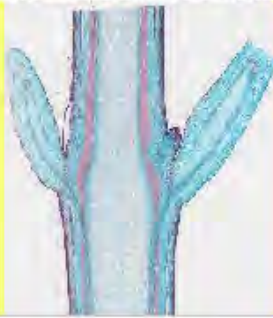
- Describes the stain(s) used to create the slide.

Organism

- Where appropriate, lists the organism from which the slide was created.

Thumbnail

- Shows the thumbnail image of the slide.

Property	Value
Name	EW7501
Physical Number	EW7983
Scan Objective	40
Mount Type	Longitudinal Section
Stain	Jan Green
Organism	Resolus sp
URL	http://www.motic.com/dsstore/26146/slidesreader.aspx?SlideID=505
Thumbnail	
Main Image	
Label Image	

DSV Library Tool Bar Icons

(continued)



Settings

Clicking on the Settings icon will open a window for general settings.

Slide View

Animation:

- When animation is checked and you click on an area in the thumbnail while viewing a slide, you will see the image as the viewing area moves to your designated area.
- When animation is unchecked, the navigation within the thumbnail “jumps” to the designated location and does not show the intervening space/image.

Movement Speed

This determines the speed of animation. For slower computers, turn the speed down or turn off animation to improve performance.

Grid Color

Select the color of the grid. The default color is black, although you may wish to change the color for improved visibility on a specific slide.

Scalebar Color

Select the color of the scale bar shown with the slides. The default color is black, although you may wish to change the color for improved visibility on a specific slide.

Magnifier Scale

Select an additional magnification value for the magnifier when it is used in the slide view.

Soft Zoom

When selected, this option will allow you to exceed the maximum objective magnification. The enhancement is digital, so image quality may be decreased.

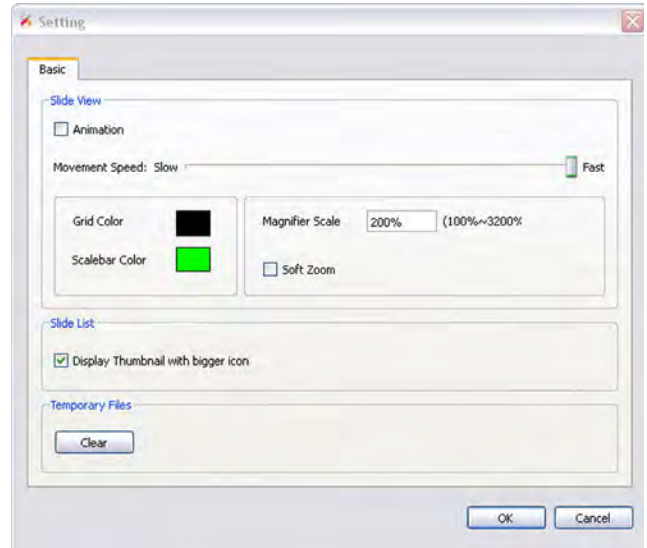
Slide List

Display Thumbnail with bigger icon:

Increases the size of the thumbnails in the slide library when viewed in thumbnail mode.

Temporary Files

Clears temporary files created by DSV and frees up storage space. This includes your stored thumbnails.



(NOTE: In order for any changes made to settings to take effect, close this dialog box using the “OK” button)

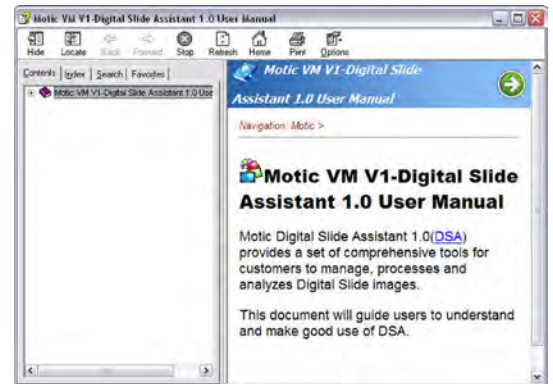
DSV Library Tool Bar Icons

(continued)



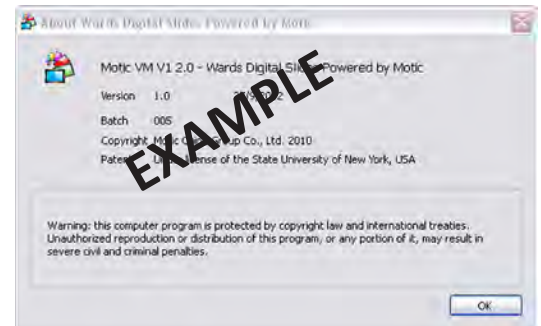
Help

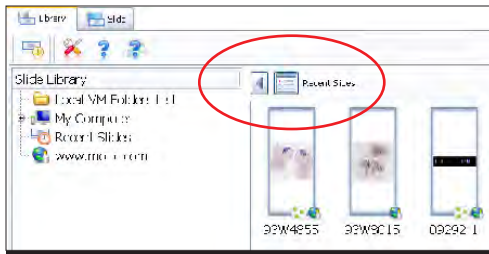
Clicking on the Help icon opens a window for the user manual for the program.



About

Clicking the About icon opens a window that displays information about the program. You may be asked for this information if you call for support.







DSV Library View Control Icons

The view control tool bar contains two icons (circled in the diagram above).

The first icon hides  or shows  the Slide Library tree menu window.

The second icon switches the view between List View  and Thumbnail View .

- Click the icon to change view types.
- In either view, a maximum of 30 slides will be available.
- To open a slide, double click the slide thumbnail or name.



The list view displays more information about each slide than the thumbnail view and can be sorted by name. Click on the “Name” header of the first column and the list will sort by slide name.

Name	Physical Number	Scan Objective	Mount Type	Stain	Organism	Image Size	File Size
Zebra Fish	92 W 3133	40x	Longitudinal Section	Hematoxylin and Eosin	Danio sp.	78215X23837	200.173MB
Zea Stem	91 W 7450	40x	Longitudinal Section	Quad Stain	Zea mays	33035X37987	123.263MB
Zea Stem	91 W 7448	40x	Cross Section	Quad Stain	Zea mays	7363X7100	8.294MB
Zea Mature R...	91 W 7444	40x	Cross Section	Quad Stain	Zea mays	4838X5221	5.298MB
Zea Leaf	91 W 7454	40x	Cross Section	Quad Stain	Zea mays	34100X9230	25.671MB
Zea Kernel & ...	91 W 7456	40x	Longitudinal Section	Quad Stain	Zea mays	20401X40982	151.738MB
Yucca Stem	91 W 7418	40x	Cross Section	Quad Stain	Yucca sp.	16106X14317	45.575MB
Yucca Seed	91 W 7424	40x	Section	Quad Stain	Yucca sp.	16303X22101	58.062MB
Yucca Root	91 W 7415	40x	Cross Section	Quad Stain	Yucca sp.	5745X6033	11.703MB
Yucca Leaf	91 W 7421	40x	Cross Section	Quad Stain	Yucca sp.	50344X26746	1882.514MB
Wood Fibers	93 W 1214	20x	Whole Mount	Quad Stain	Cannabis sp.	7621X7355	695.069MB
Volvox-Sexual...	91 W 0501	20x	Whole Mount	Fuchsin and Fast Green	Volvox sp.	12709X12762	231.836MB

DSV Library View Control Icons

(continued)



The thumbnail view displays larger thumbnails of each image.

If you hover over a slide thumbnail, a popup window will open showing the information about the slide. You can also select the slide and then click on the slide properties icon.



Taenia pisiformis-Gra...

Thumbnail Icons

In the thumbnail view, the slide image will contain icons in the lower right corner of each thumbnail. These icons are a visual source of information about the slide. A brief review of the icons and their meanings is below.



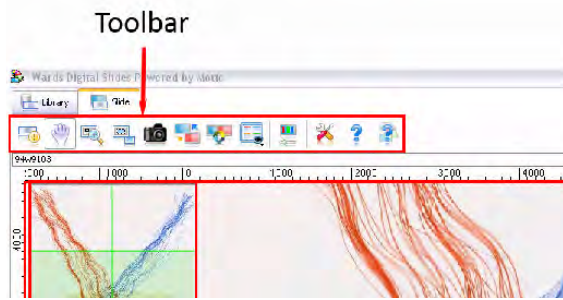
This icon represents a slide that is stored on a remote server. All of the slides in your sets will show this icon.



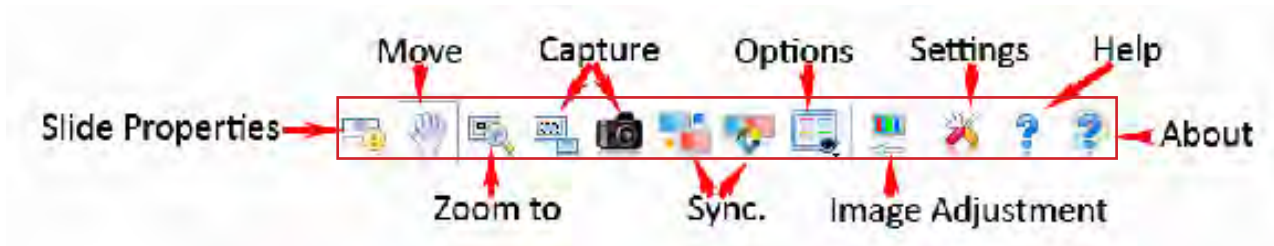
This icon identifies a slide that contains a Region of Interest (ROI) scan. All of the slides in your set have been scanned to remove the need for a ROI, but this icon identifies slides that have had areas enhanced to allow for better clarity. You will see this icon paired with the 3D icon.



The 3D icon identifies slides that have been scanned in a way that allows the user to “focus through” a slide on a Z-axis.



DSV The Slide Viewing Tab (Tool Bar)



Slide Properties

The slide properties icon displays the same slide information as it does on the Library tool bar. See page 18.



Move / Grab

The Move / Grab tool is the default tool when a slide is first opened. It is used to navigate on the slide, and to make changes to the zoomer and Z-axis stack tools. Use this tool to “pan” on the slide by “grabbing” a region with a click and hold, and dragging the slide in the direction you wish to move it. Click on this icon to turn off other icons while working.



Zoom To

This tool allows you to select a region and automatically center the view, and increase the magnification to fit that region in the working area. If you select a region that would exceed the maximum magnification, the region will center and the slide will display at the maximum magnification.

DSV The Slide Viewing Tab (Tool Bar) *continued*

Capture

The following icons are used to capture images from Ward's Digital Slides for use in your classroom.

"Capture to Clipboard" allows you to quickly get an image and import it into a document or presentation.

"Capture to File" allows you to save an image from the Digital Slide to your chosen location.



Capture (to Clipboard)

After clicking this icon, draw a box around the region you wish to capture by clicking and holding in a corner and drawing a box outward. When you release the box, the area bounded by the box is copied onto your clipboard and can be pasted directly into other documents by using a paste command.



Capture (to File)

Clicking on this icon captures all of the image displayed in the working area except the thumbnail, zoomer, and Z-axis stack.

- If Ward's Digital Slides Editor is open, the captured image is imported into Ward's Digital Slides Editor, and the image can be measured and manipulated as desired using the tools in Ward's Digital Slides Editor.
- If Ward's Digital Slides Editor is not open, a save file dialog box will open for you to save the file to your preferred location. The image can be saved as either a .JPG, or a .BMP file. If you save this way and open the file into Ward's Digital Slides Editor, you will need to calibrate the measurement tools in Ward's Digital Slides Editor.
- The saved file can then be imported into any compatible program.

DSV The Slide Viewing Tab (Tool Bar) *continued*

Synchronize

Synchronize allows you to affect two or more slides at the same time. If only a single slide is open, the icons will be inactive. If multiple slides are open, all open slides will be synchronized. Click on an icon once to synchronize, and again to stop synchronization.



Fast Synchronize

Fast synchronize will make all movement and zoomer actions on one slide also occur on all other open slides. Z-axis adjustments do not synchronize. Use this option if you want to compare slides of differing scale or structures in specific locations. Movement and magnification are synchronized in a non-absolute manner. Two slides can be displayed at differing magnifications or at different positions on the slide.



Fully Synchronize

Full synchronization aligns the slides on an absolute scale. Clicking within an image will fully align the position and magnification of all open slides to that of the slide currently being viewed. The full (absolute) synchronization uses the scale bars on the side for absolute position determination. Z-axis stack is not synchronized. Use this option if you wish to compare random fields from different slides of the same type, like blood or bacterial smears.

DSV The Slide Viewing Tab (Tool Bar) *continued*



Options

Clicking on the Options icon opens a drop down menu with the following options.

Full Screen

- Changes the active view to Full Screen mode.
- Click “ESC” to return to normal view.

Tab All

- Presents all open slides as tabs on the bottom of the screen.

Split Horizontally

- Makes all open slides viewable on the screen.
- Automatically sizes the width of windows to fit all slides on the screen from left to right.

Split Vertically

- Makes all open slides viewable on the screen.
- Automatically sizes the height of windows to fit all slides on the screen from top to bottom.

Normal Display

- The default view for a slide.

Rotate 90 Degree

- Rotates view 90 degrees in an anti-clockwise (i.e., counter-clockwise) direction from normal.
- This is not cumulative rotation.

Rotate 180 Degree

- Rotates view 180 degrees from normal.
- This is not cumulative rotation.

Rotate 270 Degree










- Rotates view 270 degrees from normal in an anti-clockwise direction.
- This is not cumulative rotation.

Rotate Anti-clockwise

- 90 degree increments in an anti-clockwise direction.
- This rotation is cumulative.

Rotate Clockwise

- 90 degree increments in a clockwise direction.
- This rotation is cumulative.

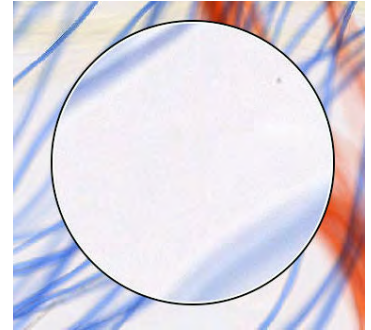
 Full Screen	F
 Tab All	Ctrl+1
 Split Horizontally	Ctrl+2
 Split Vertically	Ctrl+3
<hr/>	
<input type="checkbox"/> Normal Display	Ctrl+7
 Rotate 90 Degree	Ctrl+8
 Rotate 180 Degree	Ctrl+9
 Rotate 270 Degree	Ctrl+0
 Rotate Anticlockwise	PgUp
 Rotate Clockwise	PgDown
<hr/>	
Magnifier	Ctrl+G
<input checked="" type="checkbox"/> Zoomer	Ctrl+R
<input checked="" type="checkbox"/> Thumbnail	Ctrl+T
Scalebar	
Grid	
Mask	

DSV The Slide Viewing Tab (Tool Bar) *continued*

Options (*continued*)

Magnifier

- Turns the on screen magnifier on or off.
- Additional magnification is adjusted in “Settings”.
- Grasp the magnifier to move it on the screen.
- The area around the cursor is magnified, not the area under the magnifier.
- **This allows for additional magnification beyond that of scanning.**



Zoomer

- Turns the zoomer on and off.
- Default = on.

Thumbnail

- Turns the thumbnail in the view field on or off.
- Default = on.

Label Image

- Shows the slide label for the slide. (This option is not yet active.)

Scalebar

- Turns the scale bar on or off.
- Default = on.

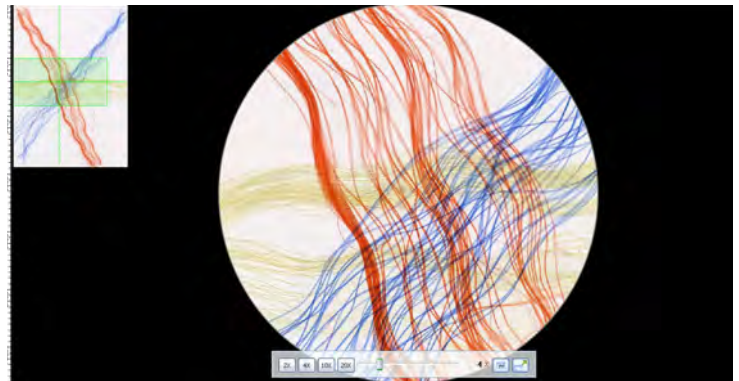
Grid

- Turns the grid function on and off
- Default = off.
- As the magnification of the image is increased, the grid scale automatically adjusts to match the scale bar.

Mask

- Turns the circular mask on or off.
- Default = off.

Slide with circular
mask on.



DSV The Slide Viewing Tab (Tool Bar) *continued*



Image Adjustment

Clicking on this icon opens a drop down menu with the following adjustments.

Gamma

- Adjusts the luminosity of the image.
- A higher factor number results in a darker image with deeper shadows.
- You may wish to increase the Gamma for use on a whiteboard with the room lights on.
- Lower factors result in an image with low color density and few to no shadows.
- A factor below 0.5 is not recommended since many details will be lost.

Contrast

- Adjusts the contrast of the image. You may use this to adjust the image for best display on a monitor, or projected image.
- The scales range from 0 (brightest) to 255 (darkest).
- The Min Input controls the brightness of highlights.
- The Max Input controls the brightness of shadows.
- The closer the values of Min Input and Max Input, the greater the contrast.

Color

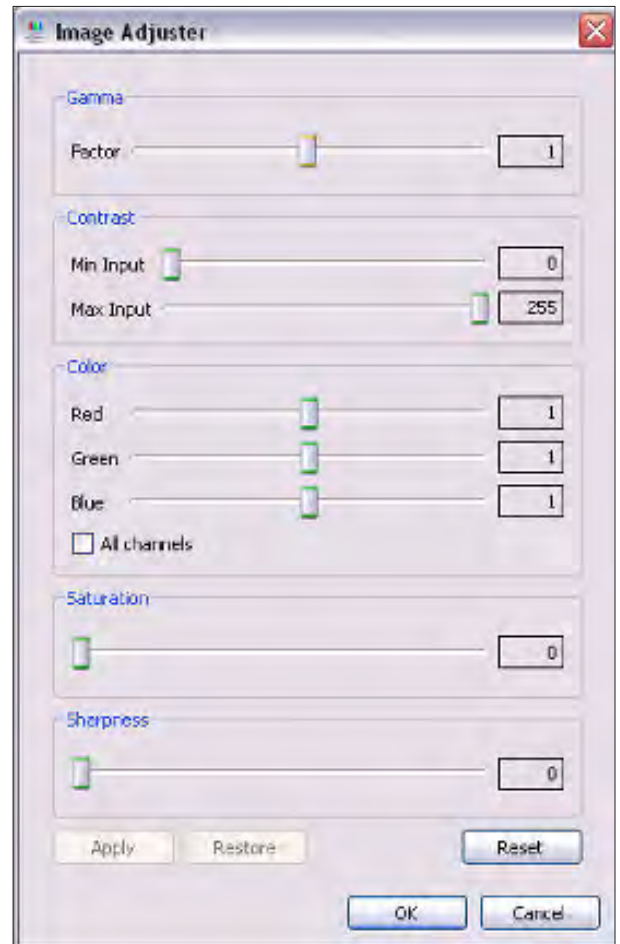
- Adjusts the levels of the red, green, and blues displayed.
- You may wish to use these to highlight specific structures.

Saturation

- Adjusts the intensity of the colors.

Sharpness

- Can clarify some images by enhancing focus.
- High levels can appear pixilated at maximum magnification.



Settings

Functions the same as on the library tab. See page 19.



Help

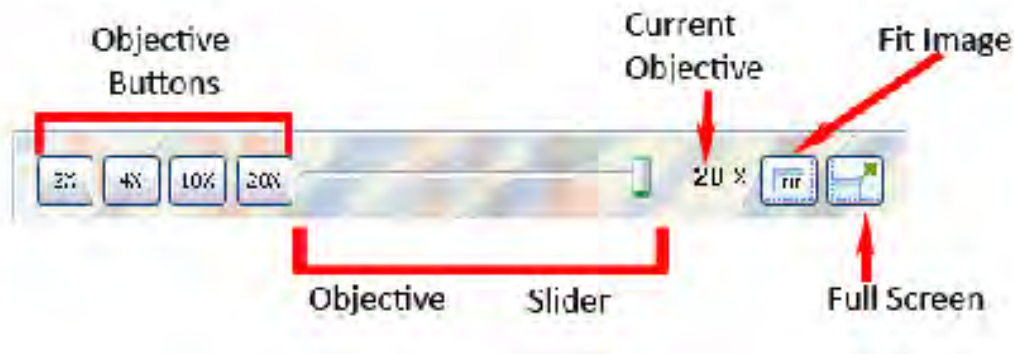
Opens the program user guide.



About

When opened, gives basic information regarding the program. You may be asked for this information if you call for support.

DSV The Slide Viewing Tab (Zoomer)



The zoomer tool, located at the bottom of the work area, contains a number of buttons and a slider.

Objective Buttons

- The objective buttons allow you to rapidly switch between magnifications. When changing magnifications, the image remains centered on your current field of view.
- Use the objective buttons to “simulate” the progression of objectives on a microscope.
- The current objective is displayed between the slider and the fit image button.

Objective Slider

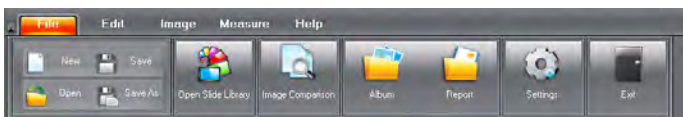
- The objective slider allows you to move gradually through all of the available magnifications.
- Use this slider to display structures that are not fully visible at standard objective magnifications.

Fit Image Button

- Clicking on this button returns the magnification objective to the greatest value that will fit the entire image on the screen.
- This is the default magnification when opening a slide for viewing.

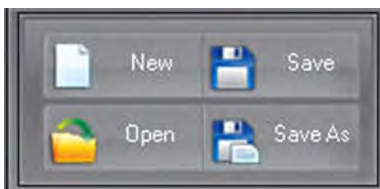
Full Screen Button

- Displays the image on the full screen.
- The thumbnail, zoomer and Z-axis Stack remain, but all tool bars are hidden.
- Press ESC to return from full screen view.



Digital Slides Editor

File Menu Icons



New

Clicking on the New icon allows you to create a new file in the image window.

Open

Clicking on the Open icon opens a file. When used, you will be asked to locate the file you wish to open.

Save

Clicking on the Save icon saves the current open file. If the file has not already been saved, it will be saved to the default photo album, using the date and time as a file name.

Save As

Clicking on the Save As icon saves the file, allowing you to rename the file and place it into a folder other than the default.



Open Slide Library

Clicking on this icon opens the Ward's Digital Slide Viewer to access your available slide library.



Image Comparison

Clicking on this icon opens a split screen window that allows you to view two images side by side. Drag an image from the preview window into one side of the split screen to view. Drag a second preview image into the other side of the split screen to compare images. Use the sliders at the sides and bottom of each window to move the images into the desired position.



Album

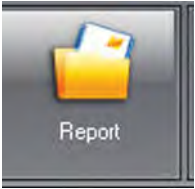
Clicking on this icon opens a window displaying the contents of the default photo album. Files can be opened by double clicking on the thumbnail.

(continued on the next page)

Digital Slides Editor

File Menu Icons

(continued)



Report

Clicking on this icon allows the user to create a report using images from the preview window. Students can add text, print and edit easily for their lab reports.



Settings

Clicking on this icon allows the user to change the default settings of the Digital Slides Editor.



Exit

Clicking on this icon exits the program. Any images that were not saved will be saved to the default capture folder.



Digital Slides Editor

Edit Menu Icons

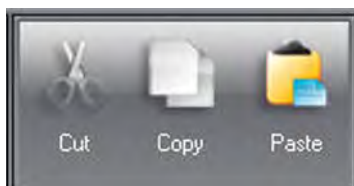


Undo

Removes the last action. Clicking Undo multiple times removes multiple actions.

Redo

Restores the most recent action undone. Use this to restore an action that was accidentally removed using undo.



Cut

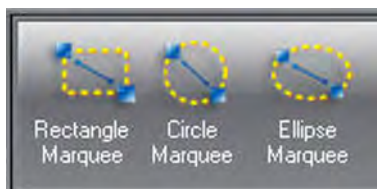
Removes the area bounded by the selection marquee and places it onto the clipboard.

Copy

Copies the area bounded by the selection marquee and places a copy onto the clipboard.

Paste

Inserts the last material stored in the clipboard into the current image.



Rectangle Marquee

Creates a rectangular selection area. Click and hold to anchor a corner, drag to create the shape, and release to set the far corner. After the shape is drawn, the marquee can be adjusted by “grabbing” anchor points on the shape.

Circle Marquee

Creates a circular marquee. Click and hold to anchor the center. Drag to create the circle with a radius.

Ellipse Marquee

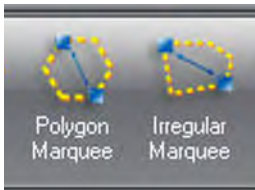
Creates an elliptical marquee. Click and hold to anchor the center. Drag to create a circle; then adjust the circle to be an ellipse by grabbing an anchor point.

(continued on next page)

Digital Slides Editor

Edit Menu Icons

(continued)



Polygon Marquee

Creates a marquee of multiple straight sides. Click to anchor the first side, drag to create the first side, and click to finish the line. Move the mouse to another location and click to create the next side. Continue until the shape is enclosed. The shape will be complete when the last point is joined with an existing point on the shape.

Irregular Marquee

Creates a freehand marquee. Click and hold to anchor the marquee. Drag around the shape you wish to enclose, and release. If you release before the shape is complete, the marquee will draw a straight side to the starting point from the place the click was released.

Select All

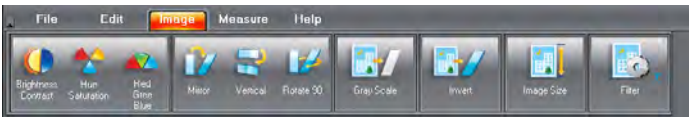


Creates a marquee that encloses the entire image.

Deselect region

Use to remove a marquee created accidentally.

Digital Slides Editor Image Menu Icons



Brightness / Contrast

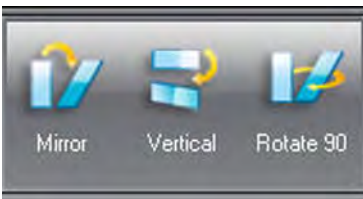
Allows you to adjust the brightness and contrast of the image.

Hue / Saturation

Adjusts the hue and saturation of the image.

Red / Green / Blue

Adjusts the levels of red, green, and blue in the image.



Mirror

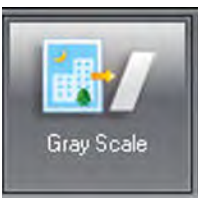
Reverses the image from left to right. The flip occurs along the vertical center of the image.

Vertical

Flips the image from top to bottom. The flip occurs along the horizontal center of the image.

Rotate 90

Rotates the image 90 degrees in a clockwise direction around the center point of the image.



Gray Scale

Removes color information and makes the image a gray scale image.



Invert

Reverses color information, forming a negative image.

(continued on next page)

Digital Slides Editor

Image Menu Icons

(continued)



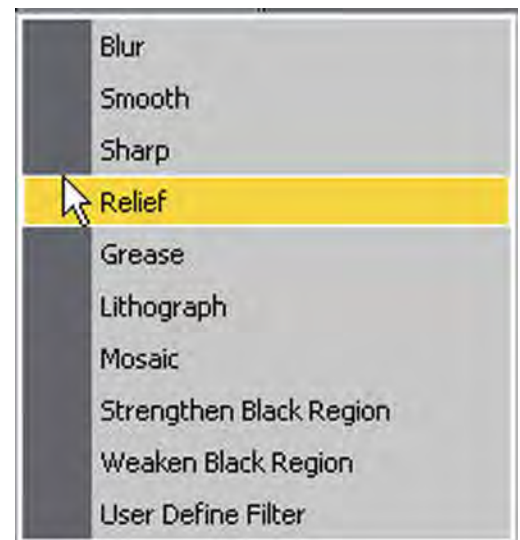
Image Size

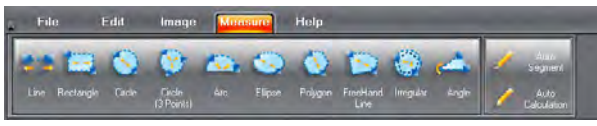
Allows you to adjust the size of the image.



Filter

Opens a selection of image filters (shown at right) that can be applied to a selected area. If an area is not selected, the entire image will be affected by the filter.





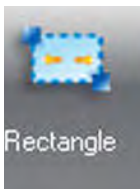
Digital Slides Editor

Measure Menu Icons



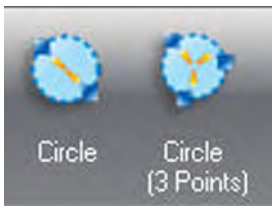
Line Measurement

Draws a line and returns a length measurement for the line. Left click and hold to start the line, drag and release to complete the line.



Rectangle Measurement

Draws a rectangle and returns width, height, contained area, and perimeter measurements. Left click and hold to anchor the shape. Move to create the shape, and release to set the opposite corner.



Circular Measurements

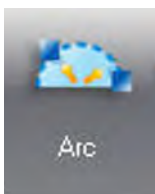
Returns radius, contained area, and perimeter. There are two methods for creating a circle measurement: Circle, and Circle (3 point).

Circle

Click and hold at the center of the circle you wish to define. Move the mouse to create a radius and release when the desired size is reached.

Circle (3 point)

Click on 3 points that would be located on the perimeter of the desired circle.



Arc

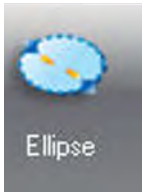
Draws an arc for measurement. Returns the angle, radius, arc length, and perimeter of the form. Click at the starting point, maximum height, and endpoint to create the arc.

(continued on next page)

Digital Slides Editor

Measure Menu Icons

(continued)



Ellipse

Draws an ellipse for measurement. Returns measurement for major and minor half axis, contained area, and perimeter. Follow the same steps as for drawing a circle. When the circle is complete, grab the anchor point on the perimeter and move to create the ellipse.



Irregular Shapes for measurement

Returns contained area and perimeter or length.

Polygon

Creates a multisided, closed shape made of straight lines. Click to start a line, draw the line, and click to anchor the line. The most recent click serves as the start point of a new side. The shape will be complete when joined with an existing point on the shape.

Freehand Line

Creates an open irregular shape. Click and hold to start the line, move the mouse to create the line, and release to end the line. As this is not necessarily a closed shape, only the length of the line is returned.

Irregular shape

The irregular shape functions like the freehand line. Click to begin the shape, draw the line, and release at the end of the line. The tool will automatically join the endpoints with a straight line to close the shape.



Angle

Draws an angle from three points. Returns the measurement of the angle in degrees. Click to create the endpoint of one line segment to the vertex. Click the vertex and draw the line to the endpoint of the second segment.

(continued on next page)

Digital Slides Editor

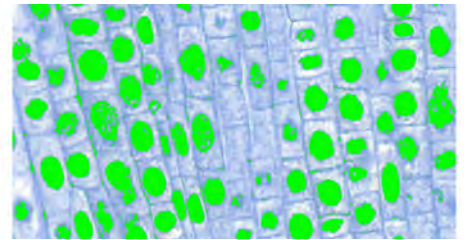
Measure Menu Icons

(continued)



Auto Segment

Uses color tolerances to identify unique structures within an image. These structures are then defined as areas with continuous borders and are highlighted green. Use auto calculate to return the measurement.



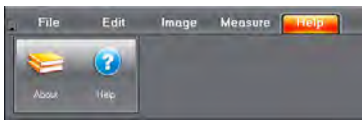
Auto Calculate

Used after auto segment; returns information about the segmented areas including:

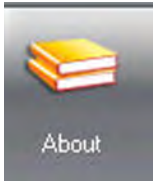
- Number of Objects
- Minimum, Maximum, Average, and Total Area
- Minimum, Maximum, and Average Perimeter

No.	Area	Perimeter
1	6.5	15.0
2	0.7	4.1
3	0.4	4.7
4	0.0	0.7
5	1.9	6.8
6	0.0	1.0
7	0.0	0.4
8	n/a	n/a

The number of Objects : 727
1254.45um
Percentage of total area in th : 22.47604 %
Minimum object area : 0.00um
Maximum object area : 27.35um
Average object area : 1.70um
Minimum object perimeter : 0.4um
Maximum object perimeter : 49.0um
Average object perimeter : 3.4um

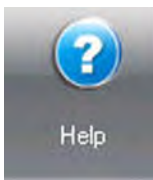


Digital Slides Editor Help Menu Icons



About

When clicked, gives basic information about the program. You may be asked for this information if you call for support.



Help

Opens an embedded user manual for the program.

