

Micron (EVOS)

Digital Imaging Software

User Guide



ADVANCED MICROSCOPY GROUP

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MICRON (EVOS) FEATURES

Micron™ is the Westover Scientific imaging software that lets you make the best use of a camera attached to a microscope. Among Micron's features are:

- Simple and quick installation
- Easy and intuitive user interface
- Hi-resolution 2048 x 1536 (EVOS)
- Frame rate of 48 MHz for Intel®-based chips (24 MHz for all others)
- Can freeze images
- Saves images to disk files on the PC
- Recalls previously saved images for later review
- Prints images
- Annotates images

System Requirements (*Minimum*)

- ▶ PC with Pentium® III 1.0 GHz CPU or higher
- ▶ Windows® 2000 (SP4) or XP Operating System
- ▶ 30 MB of hard drive space for application software
- ▶ One open USB 2.0 port
- ▶ 256 MB RAM

UNINSTALLING PREVIOUS VERSION

Before installing the Micron(EVOS) imaging software, remove any previously installed versions of Micron:

1. Click the **Start** menu button.
2. Select **Programs > Westover Scientific > Uninstall Micron.**

The uninstall program will run and remove the previously installed version.

Another method for removing Micron uses the Control Panel:

1. Click the **Start** menu button.
2. Click **Settings > Control Panel.**
3. Click **Add or Remove Programs.**
4. Scroll through the list of installed programs and select Micron.
5. Click **Remove.**

INSTALLING SOFTWARE

To install Micron(EVOS), exit all Windows programs you have running and place the installation disk in your computer's CD-ROM drive. Wait a few seconds for the computer to recognize the new disk. The setup program should start automatically.

If the setup program starts automatically, skip down to **step 5**, below.

If the setup program does not start automatically:

1. Click the **Start** menu button.
2. Click **Run.**
3. In the Run dialog box, type:

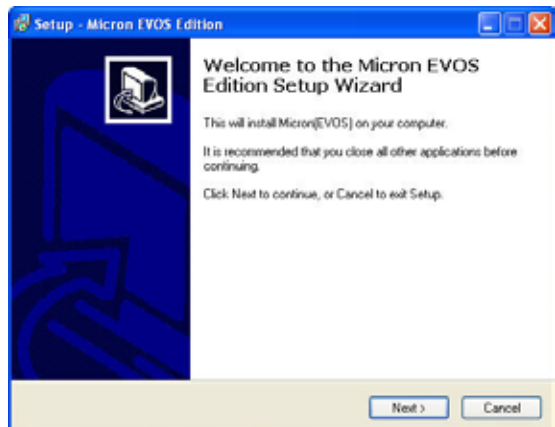
D:\setup

assuming that D is your computer's CD-ROM drive. If D is incorrect, substitute the appropriate drive letter.

SOFTWARE INSTALLATION

Screen 1

Welcome

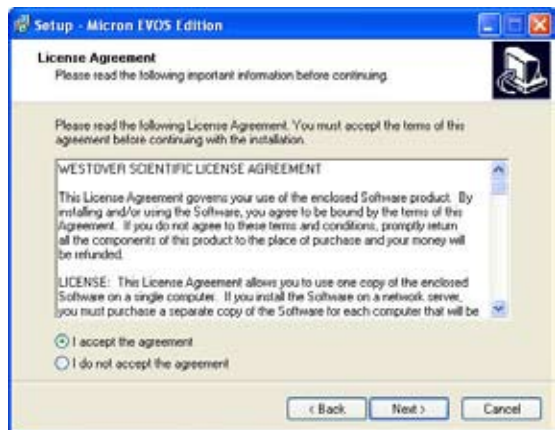


4. Click **OK**. This should start the setup program that installs Micron.

5. At the **Welcome** screen, click **Next** to continue to the **License Agreement** screen.

Screen 2

License Agreement

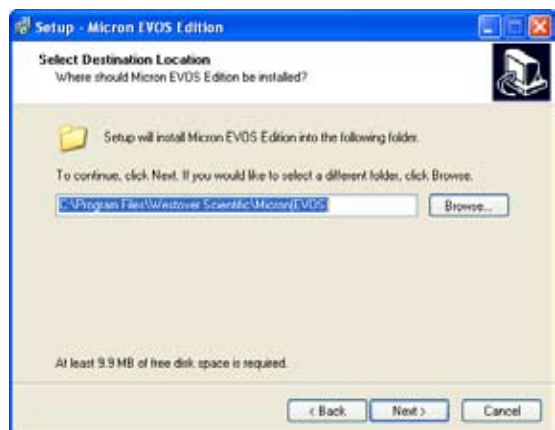


6. To install Micron, you must accept all the terms of the software license agreement. If you agree, click the **"I accept the agreement"** button to continue. If you do not agree, click **"I do not accept the agreement"** to cancel the installation.

7. Click **Next** after you have agreed to continue.

Screen 3

Select Destination Location

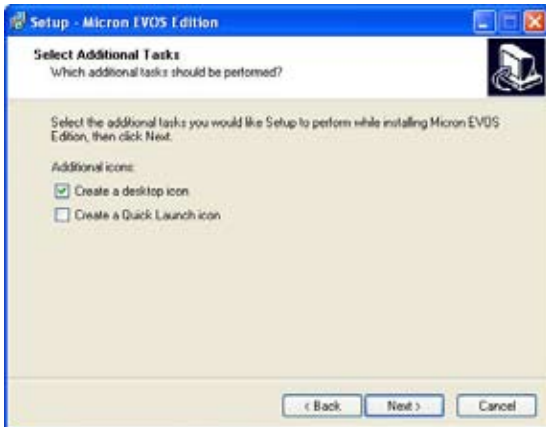


8. At the **Select Destination Location** screen, accept the default location and click **Next**, or select an alternate location where you want Micron to be installed and click **Next**.

SOFTWARE INSTALLATION

Screen 4

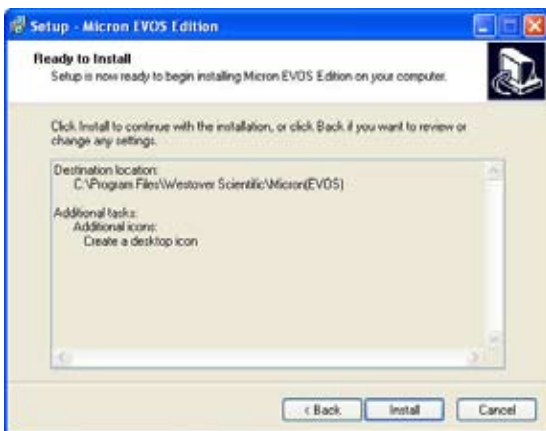
Select Additional Tasks



9. To create a desktop or quick launch icon for Micron, check the boxes and click **Next** to proceed.

Screen 5

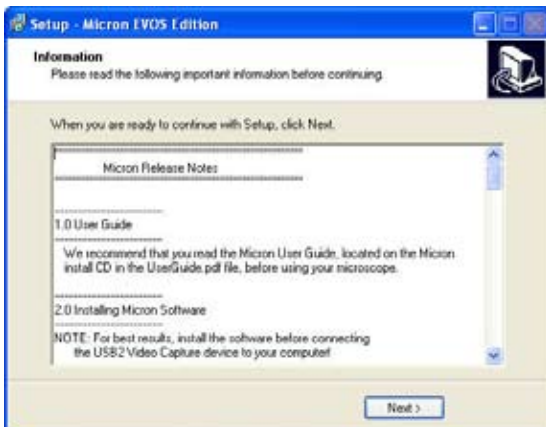
Ready to Install



10. At the **Ready to Install** screen, click **Install** to continue. The Micron files will be copied to your computer.

Screen 6

Information

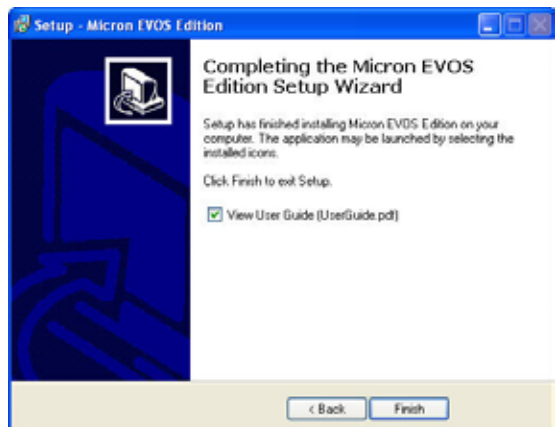


11. At the **Information** screen, take a moment to read the **Release Notes**, then click **Next** to continue.

SOFTWARE INSTALLATION

Screen 7

Completing Setup



12. At the **Completing the Micron EVOS...** screen, click **Finish** to complete software installation. To open the **User Guide** (PDF), you must have a PDF reader application installed.

Note: Download a free copy of Adobe® Reader® from the URL below:

<http://www.adobe.com/products/acrobat/readstep2.html>

FOUND NEW HARDWARE WIZARD

Connect the USB2 cable to EVOS (behind LCD panel) and to an open USB2 port on the PC. Follow the directions below to complete installation of the USB2 device drivers.

USB2 requires device drivers that are not completely installed as part of the Micron software installation. Instead, they are installed by the **Found New Hardware Wizard** when you first plug the USB2 cable into the PC.

Note: Also, if you move the USB2 cable to another USB2 port on your computer, the **Found New Hardware Wizard** will again appear, just as though you had not already installed the drivers.

Once the USB2 cable is connected to the PC, the **Found New Hardware Wizard** automatically starts to guide you through the driver installation process.

Note: Wait for the wizard to start; it may take a few minutes.

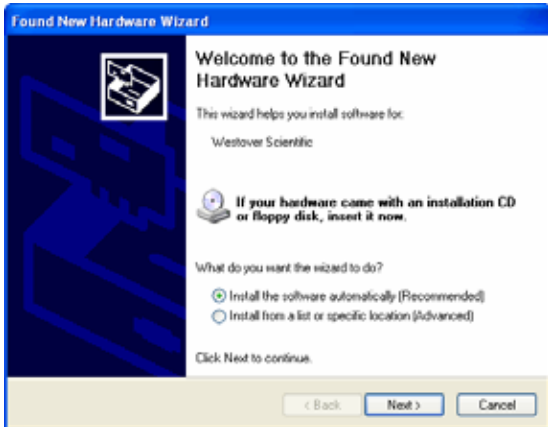
Screen 1 Found New Hardware Wizard



1. At the **Found New Hardware Wizard**, select **No, not this time**, and click **Next** to proceed.
2. **If you have the Micron(EVOS) installation CD, go to step 3a. If you DO NOT have the Micron(EVOS) installation CD, go to step 4a.**

DRIVER INSTALLATION

Screen 3a Install the software automatically



If you have the Micron(EVOS) Installation CD...

- 3a.** Make sure the Micron(EVOS) installation CD is inserted in the CD drive and select **Install the software automatically (Recommended)** button, then click **Next** to continue.

Screen 3b Hardware Installation



- 3b.** At the **Hardware Installation** screen, click **Continue Anyway** to proceed.

Note: Westover Scientific has extensively tested Micron to verify its compatibility with Windows®. Proceed with confidence.

Screen 3c Completing the Found New Hardware Wizard



- 3c.** At the **Completing the Found New Hardware Wizard**, click **Finish** to complete driver installation.

DRIVER INSTALLATION

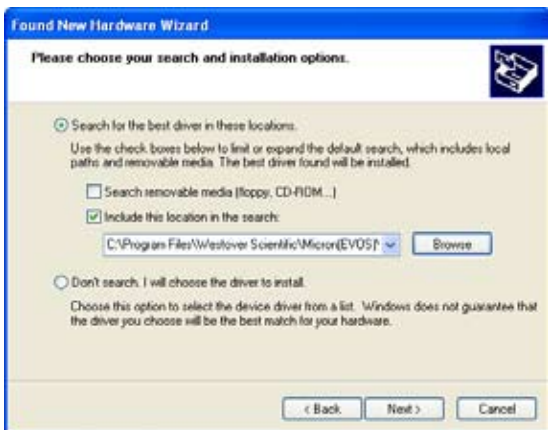
Screen 4a Install the software automatically



If you DO NOT have the Micron(EVOS) Installation CD...

- 4a. At the *Found New Hardware Wizard* screen, select **Install from a list or specific location (Advanced)** button, then click **Next** to continue.

Screen 4b Hardware Installation

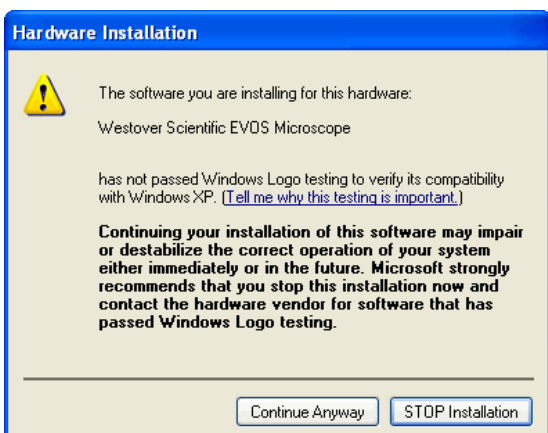


- 4b. When Micron(EVOS) was installed, the drivers were copied to the Micron installation directory, which, by default, is:

C:\Program Files\Westover Scientific\Micron(EVOS)

Select the **Search for the best driver in these locations** button and check the **Include this location in the search** box. Browse to the directory above and click **Next** to continue.

Screen 4c Completing the Found New Hardware Wizard



- 4c. At the *Hardware Installation* screen, click **Continue Anyway** to proceed.

Note: Westover Scientific has extensively tested Micron to verify its compatibility with Windows®. Proceed with confidence.

- 4d. At the *Completing the Found New Hardware Wizard*, click **Finish** to complete driver installation.

GETTING STARTED

Before you get started, make sure...

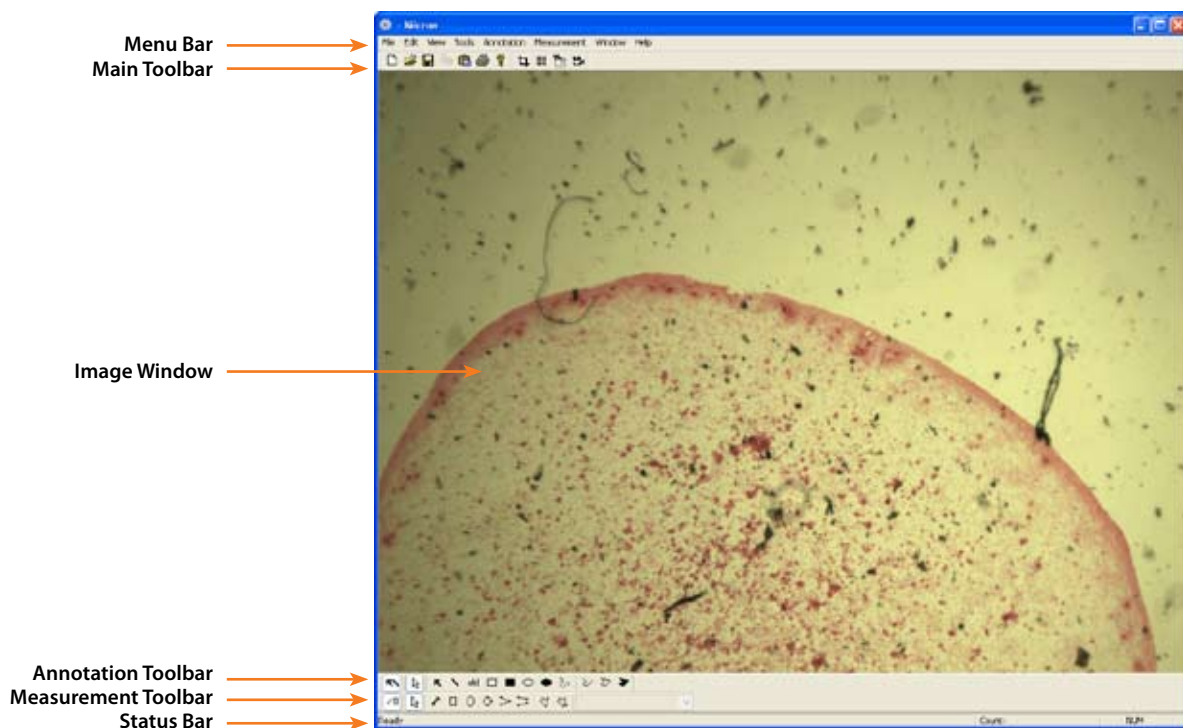
- EVOS is powered on and operating properly;
- the latest version of Micron is installed on your PC;
- the USB2 cable is attached to EVOS and to a USB2 port on your PC.

Note: You cannot tell by looking at a cable if it is USB or USB2, so make sure you have the correct cable by checking any labels.

Place a slide or specimen on the stage. Using the **focus control** knobs, bring the image into focus.

MAIN WINDOW

Launch/open Micron.



Adjust Camera



ADJUSTING THE IMAGE

On the **View** menu, click **Adjust Camera** (you can also click the **Adjust Camera icon** on the **Main** toolbar).

Brightness Slider

Adjusts the average brightness of the image between 0% and 100%.

Contrast Slider

Adjusts the spread of brightness of the image between 0% and 100%.

Saturation Slider

Adjusts the amount of color in the image between 0% (black and white) and 100% (as colorful as possible).

Hue Slider

Adjusts the relative gains of red, green, and blue camera pixels according to the location of the slider on the hue line.

Note: Hue wraps around so that very small values of hue are nearly identical to large values of hue.

Reset Button

Resets all image settings above to default (exact values/levels coming from microscope).

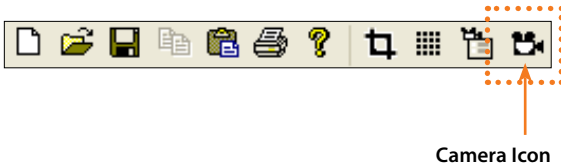
Frame Rate

How quickly an image updates on the screen. For Intel®-based chips, the frame rate will default to 48 MHz, for all others the option for 24 MHz will be available.

Note: If you have an older computer or the user-interface is not responsive, try selecting the lower frame rate (24 MHz). Lower frame rates may also be preferred with low-light images.

OPERATION

Main Toolbar



CAPTURING AN IMAGE

To capture the image on the PC screen, click either:

- The capture button on the camera, if the camera has one, or
- The Camera icon on Micron's Main toolbar:

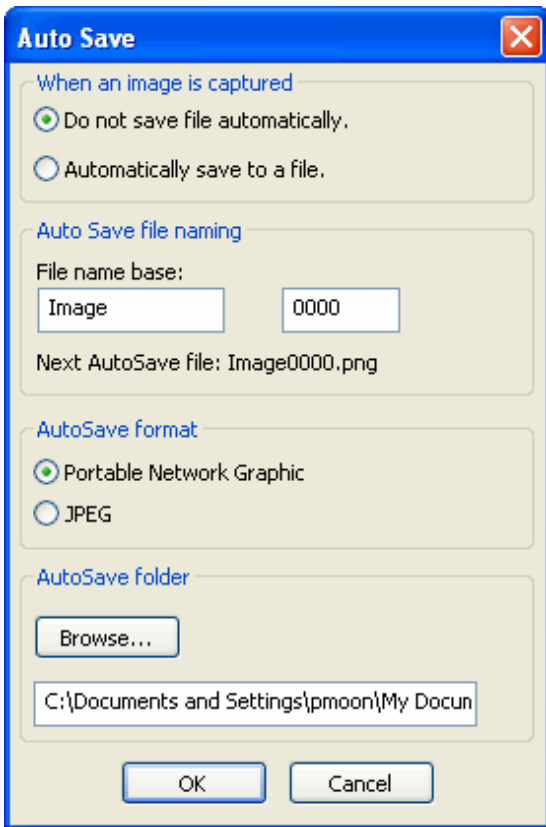
Note: The **Camera icon** has a lighter background when you are viewing live video.

When you press the camera's capture button or click Micron's **Camera icon**, the **Annotation and Measurement** toolbars become active. You can then annotate, print, and save the image you captured.

To return to a live image, either...

- click the **Camera icon** again, or
- click **Live Video** on the **View** menu.

Auto Save



ANNOTATION AND MEASUREMENT

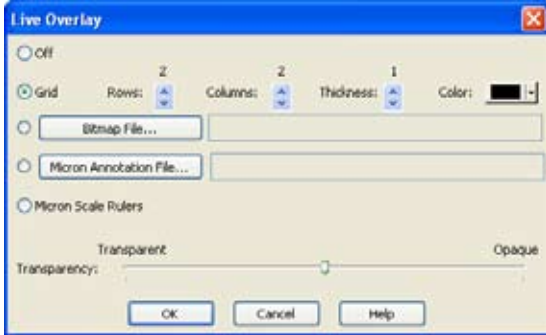
Several items on the **Annotation and Measurement** menus—as well as their identical counterparts on the **Annotation and Measurement** toolbars—let you add lines, arrows, and text to the images you captured. You can also draw geometric shapes to surround areas you want to highlight on the captured image.

Note: You cannot add these features to a live image.

Auto Save

Automatically saves any captured image to file at the instant the image is captured (before any annotations or other changes are added to the image). The **Auto Save** feature is discussed in the **AutoSaving an Image** section (see page 18).

Live Overlay



Live Overlay

This dialog box lets you superimpose a grid on the screen. You can select the number of rows and columns, and the color and thickness of the lines in the grid.

The **Bitmap File** option lets you call up a saved file and overlay it on top of your image. This feature is useful for video comparators.

In this feature:

- The screen overlay must be a Windows® bitmap (.bmp) file, so only bitmaps or other image files—JPGs or PNGs—that can be converted to bitmap format can be loaded (Micron automatically converts a .jpg or .png file loaded in this feature to bitmap).
- If the bitmap file includes a transparency band (alpha band), the transparency information is applied on a per-pixel basis. If the information is not supplied, the dominant color is taken as the transparent background.
- Micron scales the bitmap to match the image size, so for best results set the bitmap to match the Micron 4:3 aspect ratio. For example, if you are creating an overlay file with Microsoft® Paint, select **Image > Attributes** and set the Width to 640 and the Height to 480.

The **Micron Annotation File** option lets you call up a saved annotation file and lays it over the current image. The file must be a .png file, and it must have saved annotations in it.

The Transparency feature governs how transparent or opaque the grid is.

Note: For **Live Overlay** to appear correctly on your screen, you need a high-end graphics or video card. Graphics cards that perform well with **Live Overlay** have the following hardware support built into them:

- Support for YUV and “non-power of 2” Direct3D texture surfaces.
- The ability to StretchBlt from YUV to RGB DirectDraw surfaces.
- At least 16MB of video memory if multiple video streams are to be blended together. The actual amount of memory required is dependent on the image size of the video streams and resolution of the display mode being used.
- Support for an RGB overlay or the ability to blend to a YUV overlay surface.
- Hardware-accelerated video (support for DirectX Video Acceleration) decoding.
- High pixel-fill rates.

Note: **Live Overlay** requires that the system monitor be set for a color depth of at least 16 bits. **Live Overlay** cannot run if the monitor is set for 256 colors.

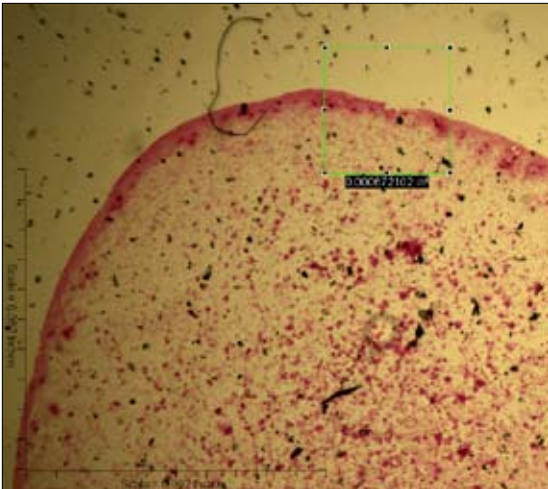
Annotation Menu section, *on page 24*, explains, item by item, how to add or draw these features.

If you choose a **Measurement** menu item or a **Measurement toolbar icon** and add a feature, Micron also calculates and displays the area or dimensions of the feature you have added. Micron does not do this for items on the **Annotation** menu or **Annotation** toolbar.

The purpose of this section is to show you what else you can do with these features after you have added them. We use an ellipse as an example.

Suppose you have gone to the **Measurement** menu or toolbar, chosen **Ellipse Area**, and drawn a square around an object whose image you have captured.

Change Size - Measurement



Change Size

The eight little points on and around the square indicate that the square is the currently selected object. You can change the size of the square—and Micron will change the measurement accordingly—by putting your cursor over one of those eight squares. When your cursor changes to a line with two arrows, press your left mouse button and hold the button down as you ‘drag’ the square inward or outward to change its size.

Submenu

Zoom In	Ctrl +
Zoom Out	Ctrl -
Reset Zoom	Ctrl Enter
Cut	
Copy	
Clear	
Measure	▶
Lock Aspect Ratio	
Color...	
Width...	

Submenu Options

Place your cursor within the area bordered by the eight little squares. Note that the cursor shape changes to a diamond. When you click the right mouse button, this submenu appears:

Zoom In, Zoom Out

Use your left mouse button to click on **Zoom In** and make the image larger. Click on **Zoom Out** to restore the image to its previous size.

For **Zoom In**, you can also hold down the **Ctrl** key while you press the + key. For **Zoom Out**, hold down the **Ctrl** key while you press the – key.

Reset Zoom

If you have zoomed in on an image to two or more levels, clicking on **Reset Zoom** restores the image to its original size in one step.

Cut

Click on **Cut** to remove the square and put a copy of it in Micron's clipboard. The clipboard allows you to use the **Paste Screen Item** on the **Edit** menu and your right mouse button to place your square elsewhere in the main window.

Copy

Click on **Copy** to copy the square. Go to another area of the screen and click the right mouse button. A list of choices appears. Select the **Paste Screen Item** choice to place a copy of the square in that area.

Clear

This feature removes the square from the screen. The square is not placed on the clipboard.

Measure

This feature is available only on submenus for squares/rectangles and ellipses. Use it to tell Micron which measurement of your square you want: area or dimensions.

Lock Aspect Ratio

When you select this item and then 'drag' any of the eight little points to change the size of your square, the width and height of the square remain in the same ratio to each other. If this item is not selected and, for example, you drag the right or left side of your square outward, your square grows in width, but not height, distorting its original shape.

Color

Selecting this feature lets you change the color of your square.

Width

Selecting this feature brings up a dialog box that allows you to specify, in millimeters, the width of the boundary line that outlines your square.

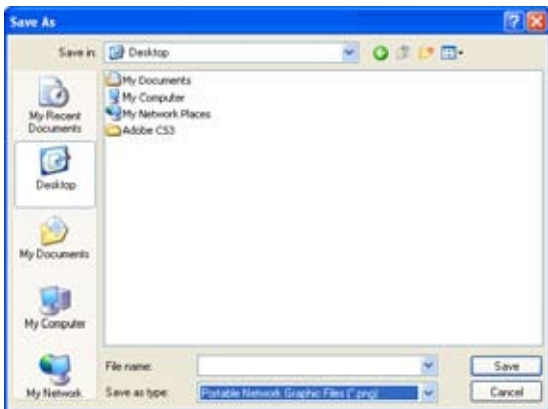
Select All

Micron lets you quickly select all features you have added to an image.

For example, place your cursor in the upper left corner of the screen. Hold down the left mouse button and drag the rectangle that emerges downward and to the right until it covers the screen. When you release the left mouse button, all features you have added are selected. You can then copy or delete them all at the same time, not one by one.

You can also place this rectangular 'rubber band' around only some features. You can drag your cursor in any direction to create a small or large rubber band, but the rubber band is always rectangular. You can copy or delete only those features that are within the rubber band's rectangle.

Save



SAVING AN IMAGE

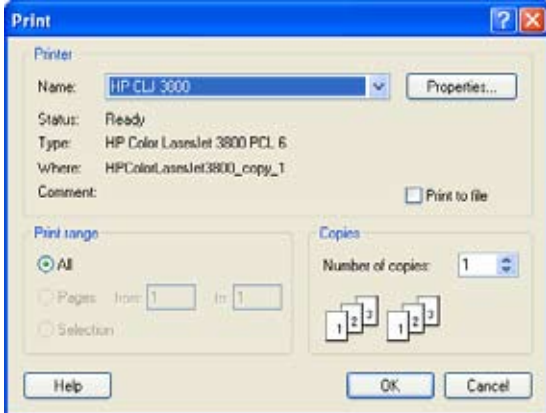
You can save a 'snapshot' of the image in Micron's main window.

1. Click the **Save** or **Save As** command from the **File** menu, or click the **Save icon** on the **Main** toolbar.
2. Enter the file name you want for the image. You can also select the file format the image will be saved in (for example, .png, .bmp, or .jpg).

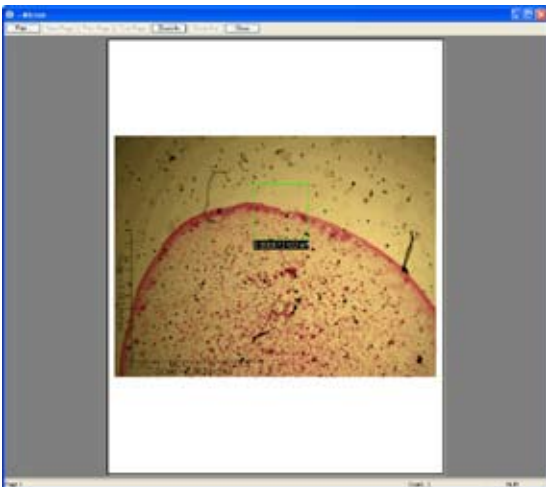
Note: *If you choose the .png format, the system's current calibrations and the image's overlays will also be saved in the file for later recall and subsequent measurements.*

3. Press the **Save** button to save the image.

Print



Print Preview



PRINTING AN IMAGE

1. Click the **Print** command on the **File** menu, or click the **Print icon** on the **Main** toolbar. The **Print window** displays the name of the printer currently selected:
2. Click **OK** to print the image.

Micron uses a *what-you-see-is-what-you-get* structure. If you have drawn annotations or measurements (overlays) on an image and have those displayed when you click on **Print**, those overlays will appear on the printed image.

If you want to print the image without overlays, you can either delete them or temporarily hide them using the **Show/Hide Measurements/Annotations**.

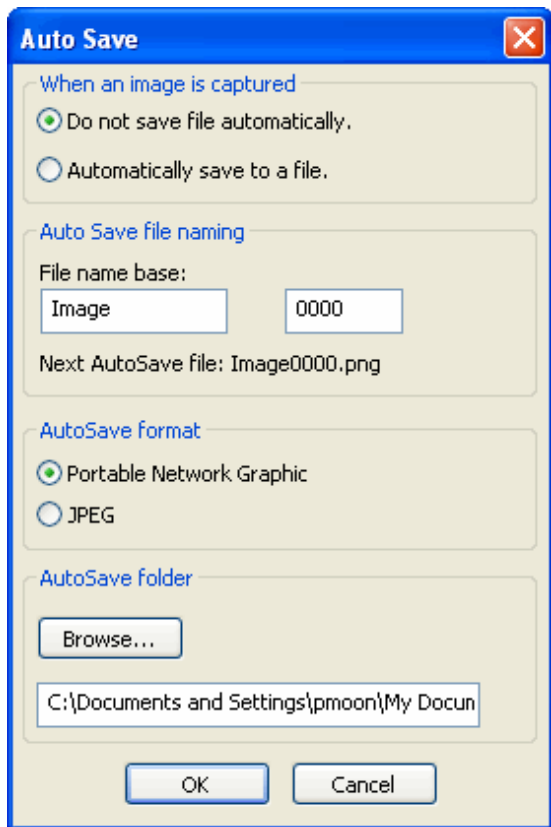
PRINT PREVIEWING AN IMAGE

1. To see what a printed image will look like before you print it, you can select the **Print Preview** command from the **File** menu. The **Print Preview window** displays the captured image.
2. Click **Print** to print the image on the currently selected printer.
3. Press **Close** or the **Esc** key to leave **Print Preview**.

When the **Zoom In** button is active, you can magnify an area of the image by clicking on that area. You can magnify it to two levels. Clicking **Zoom Out** restores a magnified image to its previous size.

Note: The **Zoom** feature does not affect the printing size.

Auto Save



AUTOSAVING AN IMAGE

The **Auto Save** feature automatically saves any captured image to file at the instant the image is captured (before any annotations or other changes are added).

To autosave images, select the **AutoSave** item on the **Tools** menu. **AutoSave** remains turned on until you select it again to turn it off. Whenever this feature is on, a checkmark appears beside it on the Tools menu.

When you turn on **AutoSave**, the **AutoSave** dialog box appears so you can customize the autosave feature.

After capturing an image...

The two choices let you turn **AutoSave** on or off for any images you capture from that point on (you cannot turn on **AutoSave** and save a captured image that is already on your screen).

AutoSave File Naming

Lets you specify the base file name and starting index. Using the default choices, **Image0000.png** would be the first image saved. The next image saved by **AutoSave** would be named **Image0001.png**, and so forth.

AutoSave Format

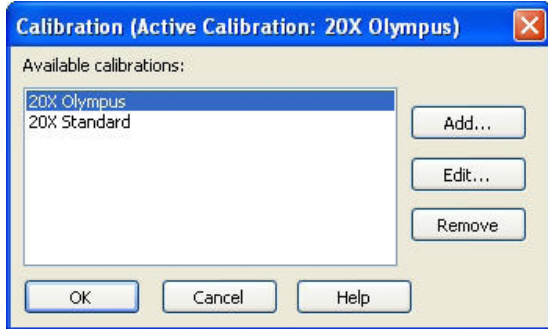
Lets you specify Portable Network Graphic (*filename.png*) or JPEG (*filename.jpg*) format for your files.

- **Portable Network Graphic** is a lossless data-compression technique in which no data is lost. In this format the image's calibration and overlays are also saved for later recall.
- **JPEG** is a lossy compression method. A lossy conversion process does not retain all the original information.

AutoSave Folder

Lets you specify which drive and folder your files will be saved in.

Calibration 1-2



Calibration 3



Calibration 6



CALIBRATION

You can choose the preset EVOS calibration schemes in the drop-down calibration menu of the Measurement toolbar (see page 33). There are presets for standard or Olympus-brand objectives. If you prefer to use different calibration standards, or if you wish to recalibrate, follow this calibration procedure.

Note: For ease of calibration, we recommend the Westover Scientific Video Calibration Slide (part number: VCS-6T) or any other calibration slide that has at least 10 calibration dots.

Calibration establishes the correspondence between 'real world' units and the same distance in pixels on the image. Micron implements a wizard to make this task easy for you.

In following the directions below, select your calibration dot carefully. For a given magnification, you want to find the one dot on the calibration slide that fills the greatest amount of the screen area without going beyond any of the screen edges. The largest dot you can get on the screen will give you the most accurate calibration. Each magnification level will, of course, have its own 'best dot.'

Note: If you have not performed a calibration before, you will find it easiest to start with your microscope's lowest magnification.

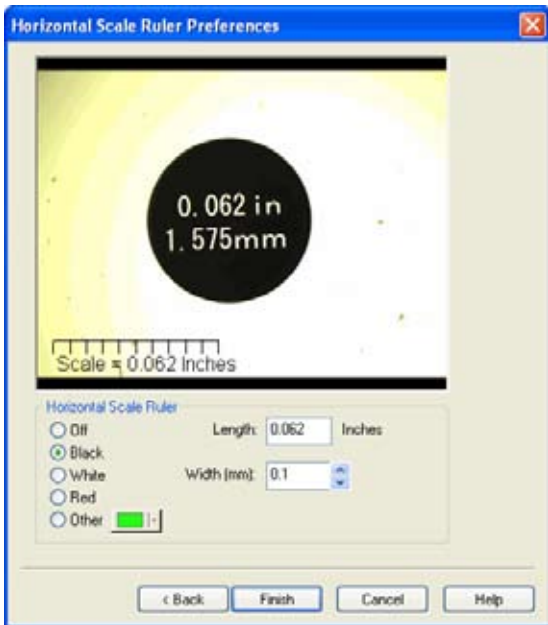
1. Click **Calibration** on the **Measurement** menu.
2. Click **Add** to start the calibration wizard.
3. Enter a name for the new calibration scheme. (The name is usually the same as the magnification level of the calibration— for example, 4X, 10X, and so forth.)
4. Indicate if you are using a calibration slide or a circular calibration piece, then Click **Next**.
5. Place the calibration slide on the stage and use the **focus control(s)** to bring the dot into sharp focus (sharp focus is needed later for positioning crosshairs around the dot).

OPERATION

Calibration 7



Calibration 10



6. Select the calibration dot's diameter from the choices available in the drop-down list. (A dot's diameter is included on the calibration slide, either above or below the dot.) Click **Next** to continue.
7. Position the top and left crosshairs. Your goal is to have each crosshair barely touch the top or left of the calibration dot's curve. You do not want any of that curve to show above or to the left of the respective crosshair.

You can use the **Snap to Estimated** feature, but you may also need to manually tweak the crosshair placement with the up/down and right/left position buttons. Click **Next** to continue.

8. Position the bottom and right crosshairs. Each crosshair should barely touch the bottom or right of the calibration dot's curve. You do not want any of that curve to show below or to the right of the respective crosshair. Click **Next** to continue.
9. Select the vertical ruler's color, length, and width.

Note: You can later change any of the ruler's features with the **Units and Scale Rulers** item on the **Measurement** menu.

Click **Next** to continue:

10. Select the horizontal ruler's color, length, and width.

Note: You can later change any of the ruler's features with the **Units and Scale Rulers** item on the **Measurement** menu.

Click **Finish** to complete calibration.

11. Click **OK** to save your changes (if you do not click OK, you will lose the calibration you have just added).

Repeat this calibration process for your microscope's other magnification levels. The dot you select will be different for each magnification level—but in each case the appropriate dot will fill as much of the screen as possible without going past any of the screen's edges.

Note: Once you have established calibrations, the name of the selected calibration appears in the calibration box on the **Measurement** toolbar. When you change magnification, you can use the drop-down menu in this calibration box to change the selected calibration.

File Menu

New	Ctrl+N
Open...	Ctrl+O
Close	
Save	Ctrl+S
Save As...	
Print...	Ctrl+P
Print Preview	
Print Setup...	
Send...	
Recent File	
Exit	

FILE MENU

The **File** menu contains 11 items. If an item has a keyboard shortcut, that shortcut is shown in parentheses after the item's name.

New

(Ctrl+n) opens a new window.

Open

(Ctrl+o) opens a previously saved image.

Close

Closes the currently displayed image.

Save

(Ctrl+s) saves the current Micron image. The Save item is discussed in detail in the section on page 14.

Save As

Saves the current Micron image to a new or different image file. The **Save As** item is discussed in detail in the ***Saving an Image section on page 16.***

Print

(Ctrl+p) prints the current Micron image.

Print Preview

Displays the current Micron image as it will appear when printed.

Print Setup

Selects a printer and printer connection.

Send

Sends the file of the currently displayed image through e-mail to the recipient you designate.

Recent File

List of files recently viewed.

Exit

Exits Micron.

Edit Menu

Copy Image	Ctrl+I
Paste Image	Ctrl+V
Copy Screen Item	Ctrl+C
Paste Screen Item	Ctrl+V

EDIT MENU

The **Edit** menu contains four items. Each item has a keyboard shortcut, which is shown in parentheses after the item's name.

Copy Image

(Ctrl+i) copies the image currently displayed on the screen.

Paste Image

(Ctrl+v) places the most recently copied image on the screen.

Copy Screen Item

(Ctrl+c) copies the selected items on the screen.

Paste Screen Item

(Ctrl+v) places the most recently copied items on the screen.

View Menu

Live Video
Adjust Camera...
✓ Image at 1/2 Natural Size
Full Screen
✓ Annotation Toolbar
✓ Measurement Toolbar
✓ Main Toolbar
✓ Status Bar

VIEW MENU

The **View** menu contains eight items.

Live Video

Toggles between displaying live video and a single captured image.

Adjust Camera

Brings up a dialog box that allows you to adjust brightness, contrast, saturation, and hue. This item is discussed in the ***Adjusting the Image section on page 11.***

Image at Natural Size

The image in the sensor is displayed on the PC screen at a ratio of 1:1 or, in other words, one pixel of the image is shown in one pixel of the screen.

Full Screen

Displays the image using the entire area of your screen, including the areas where the toolbars are normally shown. Press the **Esc** key to return to the usual display mode.

Annotation Toolbar

Shows or hides the **Annotation** toolbar.

Measurement Toolbar

Shows or hides the **Measurement** toolbar.

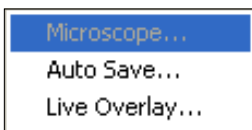
Main Toolbar

Shows or hides the **Main** toolbar.

Status Bar

Shows or hides the **Status** bar.

Tools Menu



TOOLS MENU

The **Tools** menu contains three items.

Microscope...

This item is inactive and does not apply to this release.

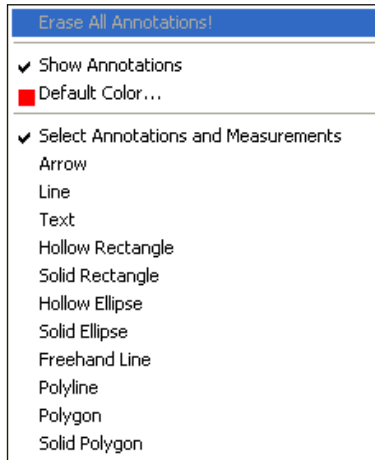
Auto Save

Automatically saves any captured image to file at the instant the image is captured (before any annotations or other changes are added to the image). The **Auto Save** feature is discussed in the **AutoSaving an Image section on page 18**.

Live Overlay

This dialog box lets you superimpose a grid on the screen. You can select the number of rows and columns, and the color and thickness of the lines in the grid. The **Live Overlay** feature is discussed in the **Live Overlay section on page 13**.

Annotation Menu



ANNOTATION MENU

The **Annotation** menu contains 15 items that let you add text, arrows, and lines to your captured images. You can also add geometric shapes to outline or enclose features you want to draw attention to.

Note: When you have **Live Video** selected, only the **Default Color** item is enabled on this menu. Similarly, even when you are in capture mode and **Live Video** is turned off, only the **Default Color** item is enabled if the **Show Annotations** item is not checked.

Show Annotations

Uncheck this item to temporarily hide any annotations you have made on the image.

Default Color

Lets you select the color for any annotation you add using an item on the Annotation menu.

Select Annotations and Measurements

Check this item to enter the select-annotation-and-measurement mode. In annotation and measurement mode you can draw a 'rubber band' rectangle on the main window to enclose and select annotations and measurements.

Arrow

To draw a line ending in an arrow, select this item, and move your cursor to the main window. Place the cursor where you want the line to begin, and press and hold down the left mouse button as you drag the line to where you want it to end with an arrow. Release the mouse button.

Line

To draw a straight line, select this item, and move your cursor to the main window. Place the cursor where you want the line to begin, and press and hold down the left mouse button as you drag the line to where you want it to end. Release the mouse button.

Text

To insert text, select this item, and move your cursor to the main window. Place the cursor where you want the text to begin, and press and hold down the left mouse button as you drag the cursor to where you want the text to end. Release the mouse button. Type the text into the area you have designated. If the text exceeds the box, you can stretch the box.

Hollow Rectangle**Solid Rectangle****Hollow Ellipse****Solid Ellipse**

To draw one of these geometric shapes, select the appropriate item, and move your cursor to the main window. Place the cursor where you want the shape to begin. Press and hold down the left mouse button as you drag the cursor to where you want the shape to end. Release the mouse button.

Freehand Line

To draw a freehand line, select this item, and move your cursor to the main window. Place the cursor where you want the line to begin, and press and hold down the left mouse button as you drag the cursor and draw the freehand line. Release the mouse button where you want the line to end.

Polyline

To draw a polyline, select this item, and move your cursor to the main window. Place the cursor where you want the polyline to begin, and click and release the left mouse button. Move the cursor to where you want the first segment of the polyline to end, and click the left mouse button. Continue moving the cursor and clicking the left mouse button until you have completed the polyline.

Polygon

To draw a polygon, select this item, and move your cursor to the main window. Place the cursor where you want the polygon to begin, and click and release the left mouse button. Move the cursor to where you want the first side of the polygon to end, and click the left mouse button. If you hold the button down, you can freehand draw the lines and angles of part or all of the polygon.

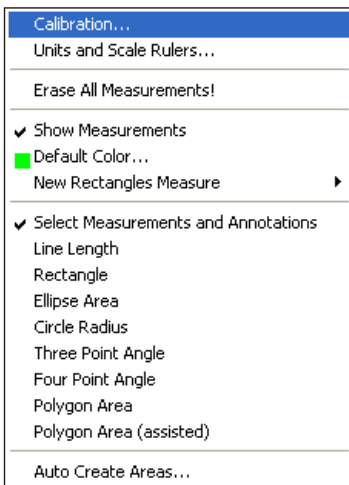
Continue moving the cursor and clicking the left mouse button until you have completed all the angles in the polygon. Click the right mouse button, and Micron 'closes' your polygon by adding a straight line connecting your final point to your beginning point.

In other words, you need to draw only two lines for a triangle, and Micron adds the third. You draw three lines for a square or rectangle, and Micron adds the fourth.

Solid Polygon

To draw a solid polygon, select this item, and move your cursor to the main window. Place the cursor where you want the solid polygon to begin, and click and release the left mouse button. Move the cursor to where you want the first side of the polygon to end, and click the left mouse button. Continue moving the cursor and clicking the left mouse button until you have completed all the angles in the polygon. Click the right mouse button, and Micron 'closes' your polygon by adding a straight line connecting your final point to your beginning point. Micron then fills in the outline to create a solid polygon.

Measurement Menu



MEASUREMENT MENU

Among other functions, the **Measurement** menu lets you show, select, and add geometric shapes to your images. After you create a geometric shape, Micron calculates and displays its measurement.

Note: *When you have **Live Video** selected, only a few items are enabled on this menu. Similarly, even when you are in capture mode and **Live Video** is turned off, only a few items are enabled if the **Show Measurements** item is not checked.*

Detailed instructions for using the drawing items—such as Line Length, Circle Radius, and Polygon Area—are in the descriptions of the corresponding items on the Annotation menu, earlier in this chapter.

Calibration

Sets up calibration using a known standard. This item is discussed in detail in the **Calibration section on page 19**.

Units and Scale Rulers

Options for measurement units (microns, inches, or millimeters) and for the vertical and horizontal scale rulers.

Erase All Measurements!

Removes all measurements from the main window.

Show Measurements

When checked, this item enables most other items on the **Measurement** menu, including:

- Select **Measurements and Annotations**, which activates the **Measurement and Annotation** toolbars.
- All of the drawing items—that is, the last nine items on this menu.

Default Color

Lets you select the color for any geometric feature you add using an item on the **Measurement** menu.

New Rectangles Measure

When you draw a rectangle, this item lets you choose whether to have Micron display the rectangle's area or dimensions.

Select Measurements and Annotations

Check this item to enter the select-measurement-and-annotation mode. In measurement and annotation mode you can draw a 'rubber band' rectangle on the main window to enclose and select annotations and measurements.

Line Length

Helps you draw a line, then displays its length.

Rectangle

Helps you draw a rectangle, then displays its area or dimensions, depending upon which measurement you have selected in the New Rectangles Measure item.

Note: *If you hold down the Shift key while drawing, the rectangle will be a square.*

Ellipse Area

Helps you draw an ellipse, then displays its area.

Note: *If you hold down the Shift key while drawing, the ellipse will be a circle.*

Circle Radius

Helps you draw a circle, then displays its radius.

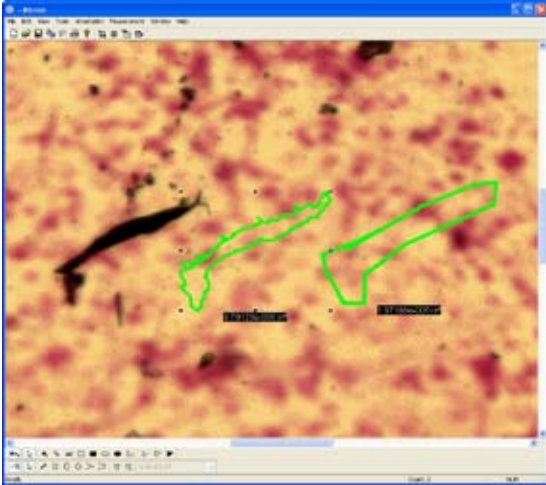
Three Point Angle

Helps you draw a geometric item with two lines and an angle, then displays the degree of the angle. This item is designed to measure wide angles.

Four Point Angle

Helps you draw a geometric item with two lines and an angle, then displays the degree of the angle. This item is designed to measure shallow angles.

Polygon Area vs. Polygon Area (assisted)



Polygon Area

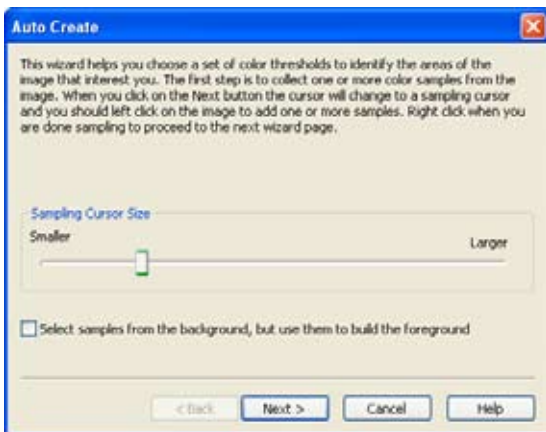
Helps you draw a polygon, then displays the measurement of its area. This item is designed for measuring regular or semi-regular polygon shapes.

Polygon Area (assisted)

Designed for measuring irregular polygon shapes. Micron helps you trace an irregular image's shape by looking for well-defined edges and aligning to them. Make sure you click the left mouse button at points of high curvature. Once you have completed a polygon and clicked the right mouse button, Micron displays the measurement of the polygon's area.

The window below shows the difference in outlining an irregular shape (shown on the left) using **Polygon Area** (the right outline) and **Polygon Area (assisted)** (the more accurate outline figure in the middle):

Auto Create Areas 1

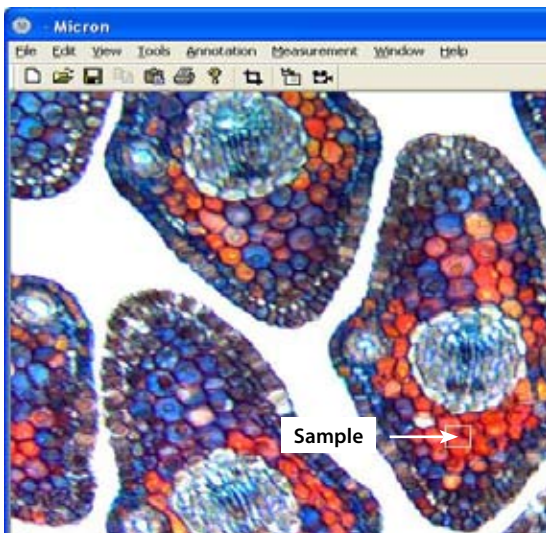


Auto Create Areas

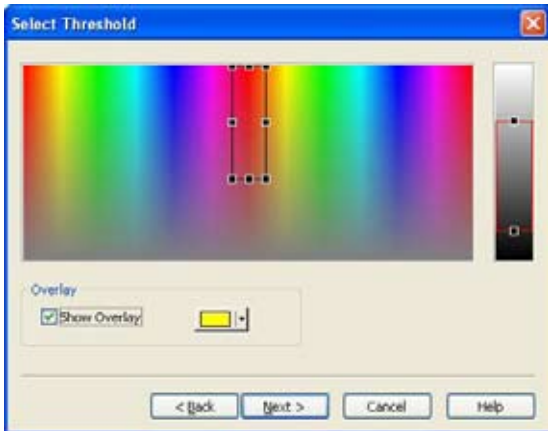
This item, which works only on colored images, lets you identify objects by their color. When you select **Auto Create Areas**, this window appears:

1. Adjust your cursor to a size smaller than the samples you want to select. Click Next to continue.
2. Select a few samples of the color you are interested in by clicking the left mouse button when the cursor is over that color. In the example below, note the white box where the cursor was clicked to select a sample:
3. When you have finished selecting samples, click the right mouse button.

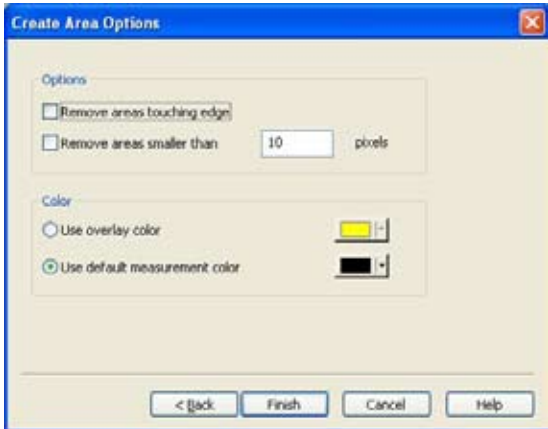
Auto Create Areas 2



Auto Create Areas 4

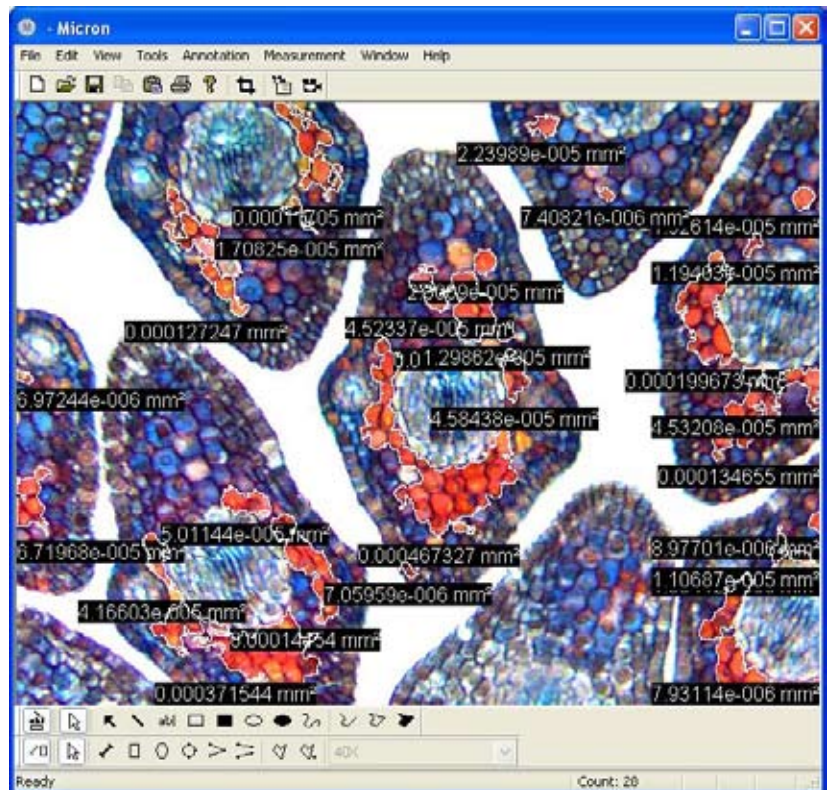


Auto Create Areas 5



4. If necessary, you can fine-tune the range of colors to be selected. Adjust the color by moving the black box around within the large color rectangle. Adjust the saturation by moving the box up and down the vertical rectangle on the right. You can also change the color of the overlay in the drop-down box. Click **Next** to continue.
5. If you wish, choose either or both of the area options. There are two color options: select one or the other depending upon the color of the sample objects you selected—in other words, if your samples were, say, yellow, do not use yellow.
6. Press **Finish**. The areas are created in overlay on your main window:

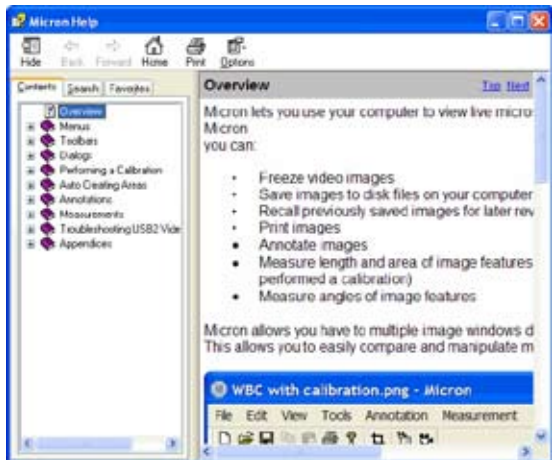
Every area in the main window that contains the color you selected is now outlined, and Micron has calculated and displayed its area measurement.



WINDOW MENU

If you have two or more instances of Micron running at the same time, this menu lists the number of screens, with a checkmark beside the currently displayed screen.

Help Menu



HELP MENU

The **Help** menu has four items.

Help Topics

Follow the instructions to obtain help on any of the listed topics.

Troubleshoot Startup Error Message

Lists several error messages that might appear when you start Micron, and suggests possible solutions to each one.

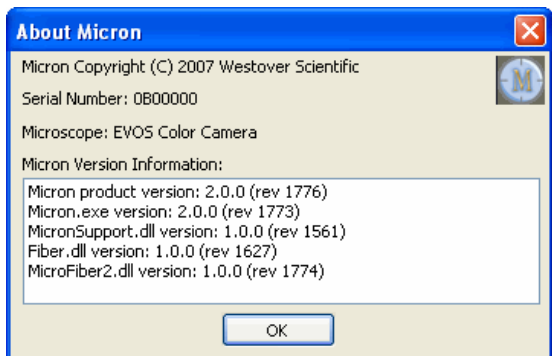
User Guide

Brings up this **User Guide (PDF)**.

Note: You can get a free copy of Adobe® Reader® by downloading it from this URL:

<http://www.adobe.com/products/acrobat/readstep2.html>

About Micron



About Micron

Displays a dialog box similar to this one:

Note: If, for some reason, Micron is having problems communicating with the camera, the **Serial Number** field is not displayed.

MICRON TOOLBARS AND THEIR ICONS

This chapter contains these sections:

- Main Toolbar
- Annotation Toolbar
- Measurement Toolbar
- Status Bar

Note: to select any toolbar icon, put your cursor on it, and click the left mouse button.

Main Toolbar














MAIN TOOLBAR

The **Main Toolbar** lets you quickly open images, save images, and capture live images, among other functions.

Note: Most of the icons on the **Main Toolbar** are identical or similar to items on the **File, Edit, and View** menus—and they are discussed in more detail on those menus.

The Main Toolbar contains 10 icons

-  New displays a blank screen to receive a new image from the camera.
-  Opens a previously saved image.
-  Saves the current Micron image. If the image does not have a title, the Save As dialog box appears. For more detail, see the Saving an Image section.
-  Copies the currently selected screen item to the clipboard.
-  Pastes the current image or annotation from the clipboard.
-  Prints the current Micron image. For more details, see the Printing an Image section.
-  Displays the current Micron version and other information about the software.
-  Crops the current Micron image and places the cropped image in a new window.
-  Subsamples the image into a new smaller image suitable for display as a “web image.”
-  Adjust Camera controls the camera’s brightness, contrast, and color display. For more details, see the Adjusting the Image section.
-  Toggles live video on and off.

Annotation Toolbar
















ANNOTATION TOOLBAR

The **Annotation Toolbar**, located toward the bottom of the main window, just above the **Measurement** toolbar and **Status** bar, lets you add text, arrows, and lines to your captured images. You can also add geometric shapes to outline or enclose features you want to draw attention to.

Note: When you have **Live Video** selected, none of the **Annotation toolbar icons** are available.

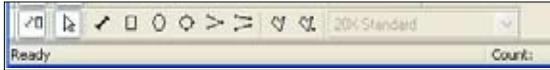
Note: Most of the icons on the **Annotation Toolbar** are identical to items on the **Annotation menu**. Those items are discussed in more detail in **Annotation Menu section**.

The Annotation Toolbar contains 13 icons

-  Toggles annotation display on and off.
-  Selects annotations.
-  Helps you draw an arrow.
-  Helps you draw a line segment.
-  Lets you add text.
-  Helps you draw a hollow rectangle.
-  Helps you draw a solid rectangle.
-  Helps you draw a hollow ellipse.
-  Helps you draw a solid ellipse.
-  Helps you draw a freehand line.
-  Helps you draw a polyline.
-  Helps you draw a hollow polygon.
-  Helps you draw a solid polygon.

Note: You can move the **Annotation Toolbar** by dragging the selection line on its left side.

Measurement Toolbar












MEASUREMENT TOOLBAR

The **Measurement Toolbar**, located toward the bottom of the main window, just above the **Status** bar, lets you show, select, and add geometric shapes to your images. After you create the geometric item, Micron calculates and displays its measurement.

Note: Most of the icons on the **Measurement Toolbar** are identical to items on the **Measurement** menu. Those items are discussed in more detail in the **Measurement Menu** section.

The Measurement Toolbar contains 10 icons & a calibration box:

-  Toggles measurement display on and off.
-  Selects screen items.
-  Helps you draw a line, then measures its length.
-  Helps you draw a rectangle, then measures its area or dimensions.
-  Helps you draw an ellipse, then measures its area or dimensions.
-  Helps you draw a circle, then measures its radius.
-  Helps you draw a 3-point angle, then measures the angle.
-  Helps you draw a 4-point angle, then measures the angle.
-  Helps you draw a regular or semi-regular polygon, then measures its area or dimensions.
-  Helps you draw an irregular polygon area, then measures its area or dimensions.



The calibration box shows the current calibration scheme. The drop-down menu lists the preset calibrations for standard or Olympus-brand objectives and any custom calibration schemes. To add other calibration schemes, see page 19.

EVOS remembers which calibration scheme you set for each objective, so you only have to adjust this setting the first time you use an objective.

Note: You can move the **Measurement Toolbar** by dragging the selection line on its left side.

Status Bar



STATUS BAR

The **Status Bar** is located at the bottom of the main window.

When your cursor is over a toolbar icon or a menu item, the left part of the status bar displays a brief description of that icon or item.

If your cursor is not over an icon or item, the Status bar usually displays a **Ready** status, meaning that Micron is ready to perform the next procedure.

The **Count** section of the **Status Bar**, located in the right-middle section of the bar, tells you how many items are on your screen at any given time.

The section on the far right of the Status bar indicates if you have **Caps Lock**, **Num Lock**, or **Scroll Lock** activated.

TROUBLESHOOTING

Is your computer screen blank and black?

A black, blank screen indicates that the camera is functioning, but there is a problem with it or with the illumination.

However, a black screen with the words No Image indicates that Micron is unable to detect or communicate with the camera.

Is the USB2 cable connected to the camera?

If not, exit Micron, connect the cable, and restart Micron.

Is the USB2 cable connected to a USB2 port on the PC?

If not, exit Micron, connect the cable to a USB2 port, and restart Micron.

Is the microscope turned on?

If there is no light, the bulb may be burned out, or there might be a hardware problem with the microscope. Contact the microscope manufacturer for technical support.

Do you have the most recent VGA drivers for your computer?

If the microscope illumination is on, but you still get an all black screen, you should verify that you have the most recent version of the video card drivers. These drivers are commonly available for download on the computer manufacturer's web site.

Did the computer just come out of standby or hibernation?

The VGA drivers of certain computers are known to have problems with coming out of suspend-power mode. Upgrade your video driver to the latest version supplied by your manufacturer.

Are you running another program that is trying to use the camera as a capture device?

Only one program at a time can use the camera. You are not able to view live video images if you open Micron while another program that uses a capture device is already running. However, you are able to load and review previously saved image files.

To fix this problem, exit Micron, close the programs that are using a capture device, and restart Micron.

Have you installed the USB2 capture device drivers?

If not, exit Micron, and install the device drivers.

More Help

Other Micron USB2 troubleshooting guides can be found in the **Help** menu:

- Under Troubleshoot Startup Error Message
- Under **Help Topics > Troubleshooting USB2 Video Problems**

If you still cannot solve the problem, contact Westover Scientific technical support for assistance. ***Our contact information is on page 36.***



ADVANCED MICROSCOPY GROUP

Contact Information

TOLL FREE (US & Canada)

▶ Customer & Technical Service **866-614-4022**

Local & International

▶ Customer & Technical Service **425-368-0444**

▶ Fax **425-368-0044**

▶ E-mail **info@amgmicro.com**

▶ Web site **www.amgmicro.com**

Westover Scientific customer service business hours are 8:00 a.m. – 4:00 p.m. Pacific Standard Time. After hours, you may leave a telephone message. Your call will be returned the following business day.

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Warranty Information

Statement of Limited Product Warranty

EVOS™ microscopes are warranted to be free of all defects in material and workmanship for a period of 60 months (5 years) from the date of delivery. The warranty does not apply to any instrument which has become worn, defective, damaged or broken due to abuse, misuse, tampering, or unauthorized repairs. Under this warranty, Westover Scientific will repair or replace, without charge to the purchaser, any part which upon our examination, appears to be defective in materials or workmanship. Returned Goods Policy for Repair or Replacement Parts: To return goods for repair or replacement, please contact Westover Scientific Customer Service.

Returned Goods Policy for Repair or Replacement Parts

To return goods for repair or replacement, please contact Westover Scientific Service Dept. by one of the numbers above. Please be prepared to supply the following information:

- Your name, return shipping address and telephone number
- Catalog/Model number of the item(s) you are returning
- Serial Number(s), if applicable
- Description of the product's problem or reason for the return
- Date the item was purchased

A Westover Representative will issue you a Return Materials Authorization (RMA) number. Please label the outside of your shipping container with this number. For any additional information, please call Customer Support: 1-866-614-4022 or 1-425-368-0444.

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