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FT-IR

MicroView Software

User Guide

269-108403 Revision A • March 2017

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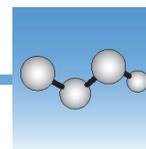
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MicroView User Guide

The Thermo Scientific™ μ View™ (MicroView) software is a video imaging software package for use with infrared and visible microscopes. μ View enhances sample viewing and video image capturing, annotation and documentation. The software works with a microscope video system and video image card to allow the image from the camera to be displayed on the computer monitor and recorded. See the manual titled OMNIC Atlas and μ View Hardware Setup for information on setting up the hardware for μ View.

μ View provides the tools you need to annotate video images with text, ruler measurements, rectangular and circular area measurements, and micrometer axes. You can save the image, copy it to the Clipboard and print it, with or without the annotation.

After you have copied or saved a video image, you can use it in reports, databases, presentations, publications, and QC and research documentation.

This manual covers only those features that are unique to the μ View software. For detailed information about using your video equipment, please see the documentation that came with your video image card.

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Conventions

NOTICE Follow instructions with this label to avoid damaging the system hardware or losing data.

Note Contains helpful supplementary information.

Starting and Exiting μ View

Click **Start** on the Windows taskbar, navigate to Thermo Scientific folder and click the μ View program.

The μ View window appears. This window is described in the next section.

You can also start μ View from your Thermo Scientific™ OMNIC™ software if you have added a button for μ View to an OMNIC toolbar. See “[Adding \$\mu\$ View to Your OMNIC Toolbar](#)” on [page 2](#) for details.

Adding μ View to Your OMNIC Toolbar

Adding a button for μ View to an OMNIC toolbar lets you start μ View from OMNIC.

❖ To add a μ View button to the toolbar

1. Choose **Edit Toolbar** from the Edit menu of OMNIC.

The Edit Toolbar dialog box appears. For complete information about Edit Toolbar and the other OMNIC features discussed below, see the OMNIC Help system.

2. Click **Add Item** button in the **User Item** box.

The Add Toolbar Item dialog box appears.

3. Select **Run External Program** in the **Item Type** box.
4. Use **Browse** to locate and select the file named **MICROVW .EXE** in the **Program Files\microvw** directory.

When you choose **Open**, the path to the file appears in the **Program Pathname** text box.

5. Type a name for the button in the **Item Name** text box.
6. Click **OK** to return to the Edit Toolbar dialog box.

The μ View toolbar button appears in the User Item box.



7. Drag the new button to the desired location in the toolbar displayed in the **Current Toolbar** box.
8. Click **OK**.

The new button appears in the toolbar. (You may need to choose **Toolbar** from the View menu to display the toolbar.)

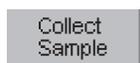
If you want to save the toolbar with the new button in a configuration file, use **Save Configuration As** in the File menu. When you open the configuration later, the button will be present in the toolbar.

Running μ View from OMNIC

If you have installed μ View after installing OMNIC, μ View will be started automatically when you choose **Collect Sample** or **Collect Background** from the Collect menu of OMNIC. This lets you use μ View to position and focus your sample before collecting data.



When μ View is started automatically by the Collect Sample command, the Collect Sample button appears to the right of the video image. When you are ready to start data collection, click the button. The μ View window is removed from the screen and sample data collection begins.



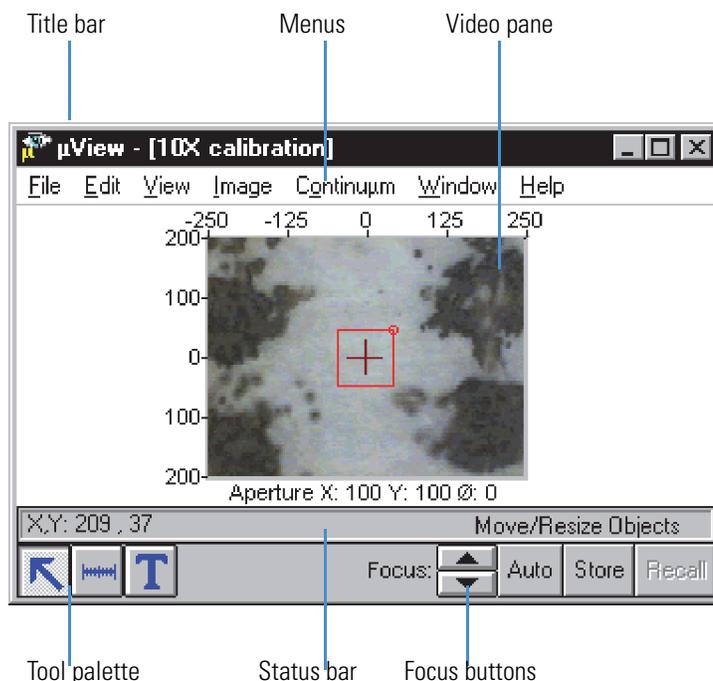
Similarly, when μ View is started automatically by the Collect Background command, the Collect Background button appears to the right of the video image. When you are ready to start data collection, click the button. The μ View window is removed from the screen and background data collection begins.

Note If you don't want μ View to be started in this manner, use Notepad to open the file named OMNIC32.INI in the Windows directory. In the [Directories] section delete the line that begins with "MicroView" and then save the file.

Overview of Using μ View

When you start μ View, the μ View window appears:

The exact appearance of the window depends on the microscope and options you have.



The title bar of the μ View window contains the application name (“ μ View”) followed by the name of the calibration file that is being used (the name appears inside the square brackets).

Below the title bar are the μ View window menus. The menus give you access to the commands needed for annotating and documenting your sample image, adjusting the video and display parameters, and saving, printing and copying the image.

The video pane is in the middle of the μ View window. This pane displays a live image from the microscope video system that you can annotate and copy or save.

The status bar below the video pane displays the name of the selected palette tool, the micrometer location of the mouse pointer, and information about the operation you are performing or tool you are using.

In the lower-left corner of the window is the tool palette. The palette provides the tools necessary to annotate your video image.

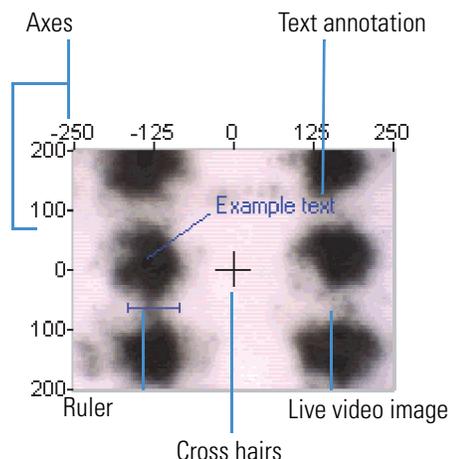
If you purchased the needed optional hardware, the focus buttons appear to the right of the tool palette. The use of these buttons is explained later in this section.

If you have a Continuum microscope with the optional auto ATR contact feature, the Contact button also appears below the status bar. The use of this button is explained later in this section.

The Video Pane

The video pane is used to display a live video image from the microscope video system. You can view this image while positioning and focusing your sample on the microscope stage.

The exact appearance of the pane depends on the microscope and options you have.



You can annotate and copy or save the video image. Video annotation can include any of the following items:

- Ruler for measuring areas of interest in the video image
- Circle for measuring areas of interest
- Rectangle for measuring areas of interest
- Text annotation
- Cross hairs marking the center of the pane.

“[Working With Annotation](#)” on [page 22](#) explains how to create and use these kinds of annotation.

Along the top and left edges of the video pane are the X-axis and Y-axis, respectively. They represent the video field of view in micrometers. The axes are oriented such that the point 0,0 is in the center of the video pane, the point indicated by the cross hairs.

To offer you the flexibility of using different microscope objectives, μ View lets you create video calibration files for each objective you use. Video calibration ensures that the representation of distances in micrometers by the axes is valid for the sample being viewed.

The next section explains how to set parameters that affect how the video image and annotation are displayed in the video pane and how to calibrate the video image.

The Tool Palette

The tool palette provides you with tools for performing the operations described in the following table. When you select a tool, a brief description of its function appears at the right end of the status bar.

To do this	Use this tool
Move or resize video annotation.	 arrow tool
Move the stage horizontally.	 stage movement tool
Draw a ruler on the video image to measure the length of an area of interest.	 ruler tool
Draw a circle on the video image to measure the size of an area of interest. (This tool does not appear if you have a Continuum microscope.)	 circular aperture tool
Draw a rectangle on the video image to measure the size of an area of interest. (This tool does not appear if you have a Continuum microscope with an automated Reflex aperture.)	 rectangular aperture tool
Add text annotation to the video image.	 text tool

Moving the Stage by Clicking a Point



If you have the optional motorized stage, the stage movement tool lets you quickly move the stage to position a specified point under the microscope objective. The point becomes the center of the video image.

❖ To move the stage by clicking a point

1. Select the stage movement tool.
2. Click the point in the video image that you want positioned under the microscope objective.

The pointer changes to look like this when you move it into the pane:

As you move the mouse, the stage coordinates of the tool location appear in the status bar.



When you click the point, the stage moves as needed to position the point under the objective, the video image is redisplayed with the point at the center, and the video pane axes are adjusted accordingly.

Note The stage movement tool is useful for verifying that the video image is calibrated and that the X and Y axes are set correctly. Use the tool to click a location in the video image. If that location moves to the center of the video pane, the calibration and settings are correct.

Using the Focus Buttons

If you have the required optional hardware, you can use the focus buttons to focus the microscope. The buttons are located to the right of the tool palette.



Click the up arrow to move the stage up. Click the down arrow to move the stage down. If you want the stage to move faster, hold down the SHIFT key when you click one of the buttons.

NOTICE Be careful not to hit the objective with the sample or stage when using the up arrow button.



If you have the optional autofocus hardware, the Auto button is available. When you click the button, the system focuses on the sample automatically by moving the stage up or down (a maximum of 1 mm).

Since autofocus works by using the maximized contrast in the video signal to establish focus, it is more effective with samples that are higher in contrast. Highly scattering samples such as paper, adhesive tape or thick fibers may be hard to focus using autofocus in reflection mode. Adjusting the Reflex aperture illumination on a Continuum microscope can make autofocus more effective in these cases.

Note

- You can also operate the autofocus equipment by using the provided hardware controller. See the documentation that came with the motorized stage for more information
- When using autofocus, leave the Autogain switch (if present) on the video camera turned off unless you are viewing a sample mounted on a highly reflective substrate such as a gold mirror



Click **Store** to save the Z (vertical axis) coordinate of the current stage position so that you can return to it later with the Recall button. When you click the button, any previously saved Z coordinate is replaced by the current Z coordinate.



Click **Recall** button to move the stage to the Z coordinate that was last saved with the Store button. The Recall button is available only if the Store button has been used to save the Z coordinate.

Using auto ATR Contact

If you have a Continuum microscope with the optional auto ATR contact feature, you can use the Contact button to achieve optimal contact pressure with the sample automatically.

❖ To use auto ATR contact

1. Set up the internal Contact Alert System.

See “ATR microscopy” in the “Advanced Techniques” chapter of the Continuum User’s Guide for details. Be sure to follow the precautions given in that manual when setting up and using the Contact Alert System.

1. Install the sample and position the area of interest under the ATR objective or slide-on ATR attachment.

2. Click  .

The stage automatically moves upward to make optimal contact with the sample. While the stage is moving upward, the button is labeled “Abort.” If for any reason you need to stop the stage, click the button. After contact is made, the Contact button becomes



NOTICE You can use the up and down arrow buttons in the μ View window to adjust the contact pressure. However, be careful when clicking the up arrow button, since applying too much pressure can damage the ATR objective or crystal!

Note If you use the up and down arrow buttons to change the contact pressure, the Contact button or Release button will become available depending on the current pressure. If you use the up arrow button, the computer will beep and the software will warn you about the risk of damage to the objective, sample or crystal.

3. When you are finished viewing the sample, click  .

The stage moves downward to release contact with the sample.

Stage Initialization

Depending on the hardware you have, your stage may require X-Y (horizontal) initialization or Z (vertical) initialization, or both, when you turn on the microscope power or start the μ View software. When initialization is completed, the software has the information about the location of the stage that it needs to control automated stage movement and display accurate stage coordinate values.

Because the stage moves during the automated initialization process, it is necessary to protect hardware components that could interfere with the stage’s movement. Prompts that appear during the initialization ask you to take precautions such as lowering the condenser or removing the nosepiece.

NOTICE To prevent damage to the microscope, be sure to take the required action when you are prompted, before pressing the F10 function key to continue the initialization.

If you press the ESC key during initialization, a message informs you that certain features will be disabled. Click **OK**. If you want to use these features later, you must restart the μ View.

When initialization is finished, you can reinstall the nosepiece if it was removed and raise the condenser if it was lowered.

Setting Up the Software and Display

This section explains how to set software features that determine how the software communicates with the microscope and how the video image is displayed. It also explains how to calibrate the video image.

Note To display the current video rate in frames per second, choose About μ View from the Help menu. To close the dialog box that appears, click **OK**.

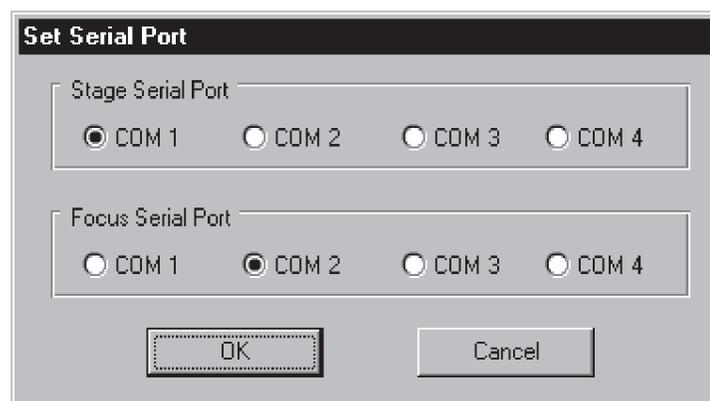
Selecting Serial Ports for Communication

If you have a Continuum microscope, use **Set Serial Port** in the Continuum menu to select a serial port for communicating with the microscope.

❖ To select serial ports for communication

1. Choose **Set Serial Port** from the Continuum menu.

A dialog box appears.



2. Specify a serial port by selecting an option in the Continuum Serial Port box.
3. Click **OK**.

Setting the Video Parameters

Use **Video Source** in the **Image** menu to specify how you want the video driver to display the video image.

❖ To set video parameters

1. Choose **Video Source** from the **Image** menu.

The **Video Setup** dialog box appears. This dialog box is displayed by your video driver software. See the manual that came with that software for complete information on using the dialog box.

2. Set the parameters as desired.

Use the scroll bars in the **Adjustments** box to set the brightness, contrast, hue and saturation of the video image. The current value appears to the right of each scroll bar. The limits of the allowed range for each parameter appear above the scroll arrows.

3. Select the type of input you are using in the **Input Type** box.

If you have a VG2X-PCI video image card, specify the type of camera signal that your camera provides by selecting **PAL** (the European standard) or **NTSC** (the standard in the U.S.A. and Japan) in the **Source** box. (If you have our G-XT video image card, the signal type is determined automatically.)

To save your changes for the next time you run the software, click **Save**. If you choose **OK** without saving your changes, they will be in effect only during the current use of the application; the former settings will be used the next time you start μ View.

4. When you are finished setting the parameters, click **OK**.

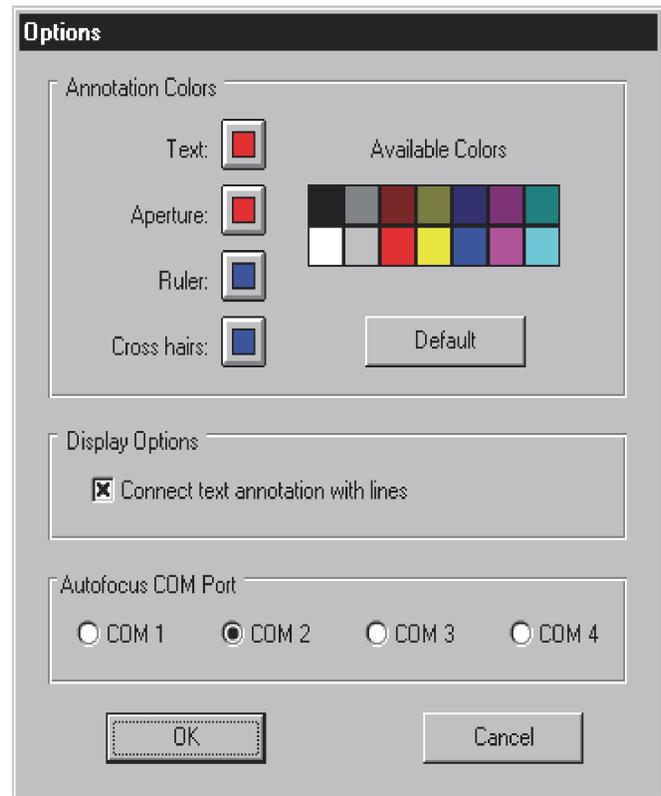
To close the **Video Setup** dialog box without using your changes during this work session, click **Reset** and then **OK**. (If you saved the changes, they will still be used the next time you start μ View.)

Setting the Options

Use **Options** in the **Edit** menu to specify the colors used to display annotation in the video pane and whether to connect text annotation to the annotated item with a line. The options appear in the **Options** dialog box:

The available colors depend on the video image card you have.

The Autofocus COM Port box appears only if you have a microscope other than a Continuum and it has the autofocus feature.



The color options you select take effect when you click **OK** to close the Options dialog box and are retained when you exit and restart μ View.

Specifying Annotation Colors

The buttons in the Annotation Colors box let you specify colors for displaying different types of annotation. When the Options dialog box first appears, the buttons show the currently selected colors. Changing the color of annotation can make it easier to see annotation displayed against a similarly colored sample.

The following table describes the types of annotation affected by each button.

Button	Affected Annotation
Text	Text and line pointers (if present). See “Adding Text to the Video Image” on page 27 in Working With Annotation .
Aperture	The box representing the optional automated Reflex aperture and drawn circles and rectangles. See “Setting the Automated Reflex Aperture” on page 18 and “Drawing a Circle in the Video Pane” on page 24 and “Drawing a Rectangle in the Video Pane” on page 25 in Working With Annotation .

Button	Affected Annotation
Ruler	Ruler measurements. See “ Measuring Areas of Interest with the Ruler Tool ” on page 22 in Working With Annotation .
Cross Hairs	Cross hairs in the center of the video pane.

Setting the Display Options

Turn on **Connect Text Annotation With Lines** in the Display Options box if you want the text tool to draw a line pointer for the text annotation you add. This lets you connect the text to a specific area of the video image. When this option is not selected, the text tool will add only text. See “[Adding Text to the Video Image](#)” on [page 27](#) in [Working With Annotation](#).

Specifying the COM Port for Autofocus

If you have a microscope other than a Continuum and it has the autofocus feature, use the options in the **Autofocus COM Port** box to specify the COM port for communicating with the autofocus equipment. See “[Selecting Serial Ports for Communication](#)” on [page 9](#) in [Setting Up the Software and Display](#) for information on specifying a COM port for a Continuum microscope.

❖ To set the options

1. Choose **Options** from the Edit menu.

The Options dialog box appears.

2. Select the desired annotation colors in the Annotation Colors box.

To select a color for an annotation type, click the button for the annotation type; click the desired color in the array of VGA colors. To select the default colors for all the annotation types, click **Default**.

3. If you want text annotation you add with the text tool to be connected to the annotated item with a line, turn on **Connect Text Annotation With Lines**.
4. If you have a microscope other than a Continuum and it has the autofocus feature, select an option in the Autofocus COM Port box to specify the COM port for communicating with the autofocus equipment.
5. Click **OK**.

To close the dialog box without using the changes you made, click **Cancel**.

Changing the Size of the Video Image

Use the **160 x 120** commands in the Image menu to change the size of the video image displayed in the video pane to the corresponding number of pixels. If you later print, save or copy the video image, it will have the size you specified.

Note The use of these commands does not change the field of view or the microscope's magnification of the sample

Choose **160 x 120**, **240 x 180**, **320 x 240** or **640 x 480** from the Image menu.

The video image size is changed, and a check mark appears next to the command name to indicate the current size. Here is an example:

✓ **160 x 120**

Note If the 640 x 480 command is not available, use Windows Control Panel to reset the resolution of your monitor to at least 800 by 600 pixels.

Keeping the μ View Window Visible at all Times

Use **Always On Top** in the Window menu to keep the μ View window in front of other application windows so that it is always visible.

Choose **Always On Top** from the Window menu.

A check mark appears next to the command name to indicate that the command is on. If you choose the command again, the check mark is removed.

Displaying the Video Image Only

Use **Display Video Only** in the Window menu to display the video image without the axes or tools. This reduces the amount of screen area used by the μ View window.

Choose **Display Video Only** from the Window menu.

The μ View window is displayed without the axes, tools or annotation. You can position the window on the screen by dragging the window by its title bar.

To return the window to its normal appearance, click anywhere in the video image.

Calibrating the Video Image

Use **Create Calibration in the Image** menu to create and save a calibration file containing the video calibration information for the objective you are using. You can open this file later to set the video image axes in one step when you change to this objective. See [“Opening a Calibration File”](#) on page 16 for details.

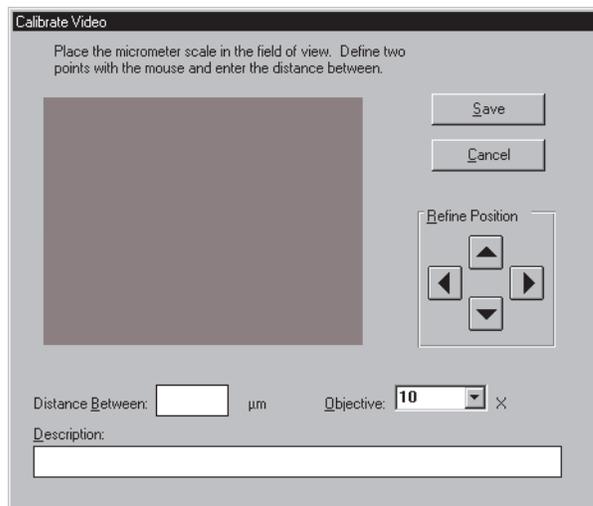
Whenever the size of the video field of view changes, you need to calibrate the video image to coordinate what is displayed in the video pane with the actual field of view. That is, the number of micrometers represented by the video pane axes must match the number of micrometers in the field of view. The calibration is very important. If you don't calibrate the video image, the axes and any annotation such as the ruler and drawn circles and rectangles will not have correct micrometer values.

Note

- If your microscope has only a single, fixed 10X objective, you need to calibrate the video image just once.
- If there is no default calibration file, choosing **Create Calibration** from the Image menu is unnecessary since the Create Calibration window appears the first time the software is started.

❖ **To calibrate the video image**

1. Choose Create Calibration from the Image menu.



The Objective drop-down list box appears only if you have a Continuum microscope.

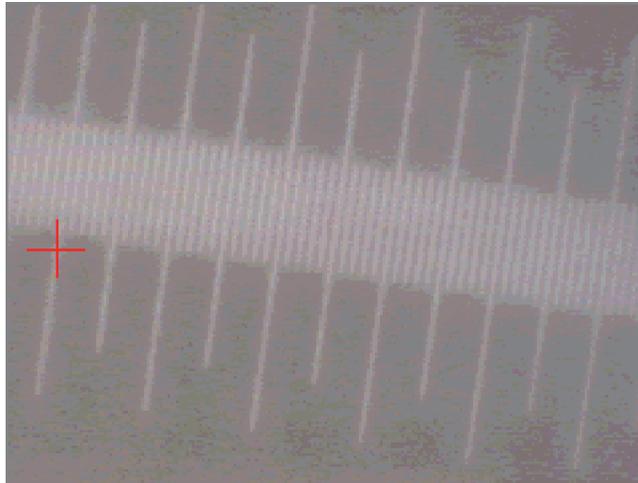
2. Place a micrometer scale on the stage and focus on the scale while looking at the live video image in the Create Calibration window.

If your micrometer scale is on a transparent slide, you will probably find it easier to see the scale if you set the microscope and illumination for transmission operation.

The scale provides a known distance that you will use for the calibration. The scale need not be horizontal or vertical in the image.

3. If you have a Continuum microscope, select the magnification of the objective you are using from the Objective drop-down list box.
4. Click one of the division marks of the scale displayed in the video image.

The point you click will be used along with a second clicked point to indicate a known distance on the scale. A red cross hairs marker appears at the point you clicked. Here is an example:

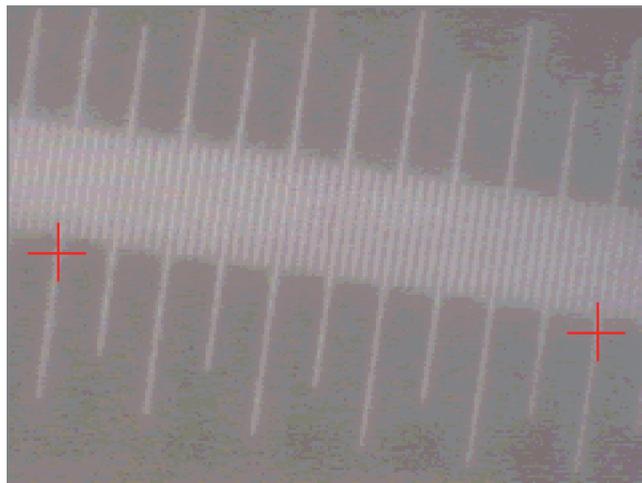


If you are not satisfied with the position of the marker, you can adjust it by clicking the arrow buttons in the Refine Position box. The direction of the arrow on each button shows the direction the marker will move when you click the button. Each time you click a button, the marker moves a distance of one pixel. Position the marker on the center of the division mark.

You will also be able to move the marker with the mouse after both points have been clicked (this is explained in the next step).

5. Click another division mark of the scale.

Click a division mark that is a suitable distance from the first point. The calibration will be more accurate if your points are widely spaced on the screen. A red cross hairs marker appears at the point you clicked. Here is an example:



You can adjust the position of the marker by using the arrow buttons as described in the preceding step. In addition, now that both points have been clicked, you can use the mouse to move the marker for either point. To move the marker, drag it to the desired location. When you drag or click a marker, it is displayed in red to show that it is selected; the marker for the other point is displayed in blue.

You can always use the arrow buttons in the Refine Position box to adjust the position of the selected (red) marker. Each time you click a button, the selected marker moves a small distance in the direction of the arrow.

6. Use the image of the micrometer scale to determine the distance between the two markers, and type the distance in micrometers in the **Distance Between** __ μm text box.
7. Type a detailed description of the calibration in the **Description** text box.

The description is a good way to record what the calibration file was created for. When you select the file in the Open Calibration dialog box, the description will appear at the bottom of the dialog box. You will find the description more useful than the short filename when you are trying to locate a particular calibration file.

Note It is helpful to include a description of the objective that was used for the calibration. The description will also appear in the Calibration Information dialog box when you choose Calibration Information from the Image menu while the calibration file is in use.

8. Click **Save**.

The Save Calibration As dialog box appears.

9. Type a filename in the **File Name** text box, select the directory where you want the image saved; click **OK**.

Use the extension **.CAL**. The calibration file becomes the current calibration.

Note The last calibration file created or opened will be the calibration file used when you next start μView again.

Opening a Calibration File

Use Open Calibration in the Image menu to open a previously saved calibration file that sets the video image axes for the objective you are using. By opening the appropriate calibration file, you avoid having to recalibrate the system when you change objectives. See “[Calibrating the Video Image](#)” on [page 13](#) for information on creating a calibration file.

When you start μView , the calibration file that was last used with the software becomes the current calibration.

❖ To open a calibration file

1. Choose **Open Calibration** from the image menu.

The Open Calibration File dialog box appears listing the available calibration files, which have the extension .CAL. The default directory is the directory of the last calibration file that was opened or saved.

2. Type the name of the file you want to open, or locate and select a file.

You can change directories or drives to locate a file. If a description was entered when the calibration file was created, the description appears at the bottom of the dialog box when you select the file.

3. Click **OK**.

The opened calibration file becomes the current calibration. The video pane axes are updated to reflect any dimension changes required by the new calibration.

Viewing Information About the Calibration

Use **Calibration Information** in the Image menu to verify that the current calibration file is the correct calibration for the microscope objective you are using. The Current Calibration dialog box displays the calibration information, which is described in the following table.

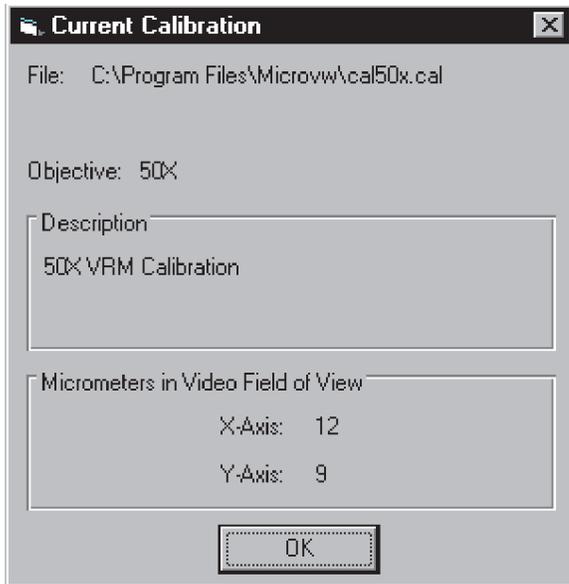
Information	Description
File	The pathname of the current calibration file.
Objective	The magnification of the objective that was used to create the calibration. (This information appears only if you have a Continuum microscope.)
Description	The file description that was entered when the current calibration file was created.
X-Axis	The number of micrometers in the X dimension of the video image field of view.
Y-Axis	The number of micrometers in the Y dimension of the video image field of view.

See “[Calibrating the Video Image](#)” on page 13 and “[Opening a Calibration File](#)” on page 16 for information on creating, saving and opening calibration files for different objectives.

❖ **To display calibration information**

1. Choose Calibration Information from the Image menu.

The Calibration Information dialog box appears. Here is an example:



2. Check the information and then click **OK**.

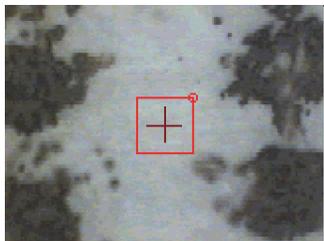
If the calibration information is not appropriate for the objective you are using, open or create another calibration file.

Setting the Automated Reflex Aperture

This section explains how to set the size of the optional automated Reflex aperture on a Continuum microscope.

Setting the Automated Reflex Aperture Graphically

If you have a Continuum microscope with the optional automated Reflex aperture system (must be installed by us), the Reflex aperture is represented in the video image by a box whose size, shape and orientation you can manipulate.



Aperture X: 100 Y: 100 Ø: 0

The aperture is adjusted automatically to match the box. The current X and Y dimensions and angle of rotation of the aperture appear below the video pane.

NOTICE Use only the software to adjust the aperture; do not use the Reflex aperture control knobs on the microscope. If you do adjust the knobs, you will need to turn the microscope power off and on. Follow these precautions: If the microscope has a motorized stage or the autofocus option, remove the nosepiece and lower the condenser all the way before turning on the power. After the microscope has initialized, reinstall the nosepiece.

Since the box is always present, the rectangular aperture tool and circular aperture tool are not available.

Note The minimum size of the automated Reflex aperture is nominally 5 by 5 micrometers. If you attempt to set the aperture to this or a smaller size, the system will automatically adjust the aperture to the minimum size possible on your microscope (typically 8 by 8 micrometers). The minimum available size varies slightly from system to system.

For more information about the Reflex aperture, see the Continuum Users Guide.

❖ To adjust the aperture

To change the size or shape of the aperture, use the arrow tool to point to a side or unmarked corner of the box and drag it. (One corner has a small circle, described below.) Release the mouse button when the box is the desired size and shape.

To rotate the aperture, use the arrow tool to drag the small circle located at one corner of the box. Release the mouse button when the box is at the desired angle.

An angle of 0 positions the aperture with its X dimension parallel to the X-axis. You can rotate the aperture from 45 to -45 degrees (a negative angle rotates the aperture clockwise). With this range of rotation plus the ability to resize the aperture, any combination of orientation and rectangular shape is possible.

Setting the Automated Reflex Aperture to the Default

If you have a Continuum microscope with the optional automated Reflex aperture system (must be installed by us), you can quickly set the Reflex aperture to the default size and zero degrees of rotation by choosing Set Aperture To Default from the Continuum menu. The software bases the default aperture on the setting of the Objective parameter that was saved in the current calibration file. See “[Calibrating the Video Image](#)” on page 13 in [Overview of Using \$\mu\$ View](#) for more information.

Note You can also adjust the aperture graphically. See “[Setting the Automated Reflex Aperture Graphically](#)” on page 18.

Choose **Set Aperture To Default** from the Continuum menu.

If you are using an objective with a magnification of 15X or less, the default size is 100 by 100 micrometers. If you are using an objective with a magnification greater than 15X, the default size is 50 by 50 micrometers.

Setting the Automated Reflex Aperture Numerically

If you have a Continuum microscope with the optional automated Reflex aperture system (must be installed by Thermo Electron), you can use Aperture Dimensions in the Continuum menu to adjust the size, shape and orientation of the aperture by entering numerical values.

NOTICE Use only the software to adjust the aperture; do not use the Reflex aperture control knobs on the microscope. If you do adjust the knobs, you will need to turn the microscope power off and on. Follow these precautions: If the microscope has a motorized stage or the autofocus option, remove the nosepiece and lower the condenser all the way before turning on the power. After the microscope has initialized, reinstall the nosepiece.

Note

- The minimum size of the automated Reflex aperture is nominally 5 by 5 micrometers. If you attempt to set the aperture to this or a smaller size, the system will automatically adjust the aperture to the minimum size possible on your microscope (typically, 8 by 8 micrometers). The minimum available size varies slightly from system to system.

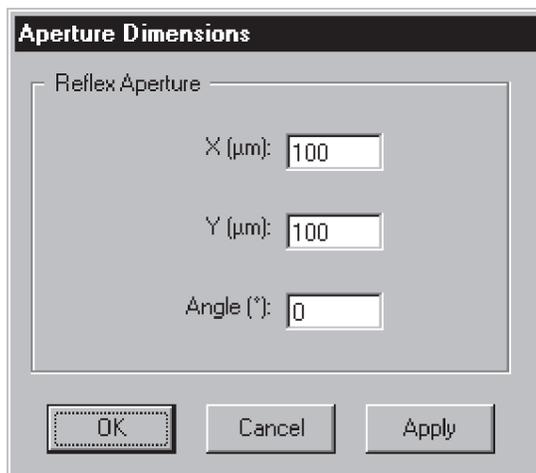
For more information about the Reflex aperture, see the documentation that came with your microscope.

- You can also adjust the aperture graphically. See [“Setting the Automated Reflex Aperture Graphically”](#) on page 18.

❖ **To set the Reflex aperture numerically**

1. Choose **Aperture Dimensions** from the Continuum menu.

The Aperture Dimensions dialog box appears. Here is an example:



2. Specify the X dimension of the aperture in micrometers, before any rotation, by typing a number **X (µm)** text box.
3. Specify the Y dimension of the aperture in micrometers, before any rotation, by typing a number **Y (µm)** text box.
4. Specify the angle by which to rotate the aperture about the center of the field of view within the plane of the sample.

To do this, type a number in the Angle (degrees) text box. An angle of 0 positions the aperture with its X dimension parallel to the X-axis. You can rotate the aperture from 45 to -45 degrees (a negative angle rotates the aperture clockwise). With this range of rotation plus the ability to resize the aperture, any combination of orientation and rectangular shape is possible.

5. Click **Apply** to adjust the aperture as you specified without closing the dialog box.

This lets you make additional adjustments and see the results without having to choose the command each time. When you are satisfied with the aperture size, shape and orientation, click **OK**.

Working With Annotation

This section explains how to use the palette tools to create and use video annotation.

Enabling and Displaying Annotation

Use **Video Annotation** in the View menu to enable and display annotation in the video pane. When the command is on, any video annotation you specified before appears in the pane, and you can add new annotation. Annotation includes the ruler, drawn circles and rectangles, text, and cross hairs marking the center of the pane. In addition, if this command is on, all annotation (and the axes) will be included in any video image you copy, save or print.

If this command is not turned on, annotation will not appear in the video image, and annotation and the axes will not be included when you copy, save or print a video image.

To change the colors of your annotation, use **Options** in the Edit menu. See “[Setting the Options](#)” on [page 10](#) in [Setting Up the Software and Display](#) for details.

Note If your view of the sample is obscured by annotation, you can turn off the display of annotation temporarily while you view the sample.

❖ To enable and display annotation

Choose **Video Annotation** from the View menu.

A check mark appears next to the command name when the command is on.

✓ Video Annotation

To turn off the display of annotation, turn Video Annotation off by choosing it when the check mark is present.

Measuring Areas of Interest with the Ruler Tool



Use the ruler tool to draw a new ruler in the video pane, replacing any ruler that is currently displayed.

❖ To measure areas of interest

1. Select the ruler tool.
2. Point to the location in the video pane where you want the ruler measurement to start.



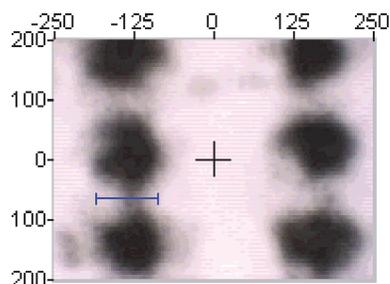
Use the ruler tool to draw a new ruler in the video pane, replacing any ruler that is currently displayed.

3. Press and hold down the mouse button.
4. Move the pointer to the location where you want the ruler to end.

The ruler changes length and direction as you move the mouse. The length of the ruler in micrometers appears in the status bar.

5. Release the mouse button.

If there was a ruler displayed in the pane, it is replaced by the new ruler. Here is an example:



Note If the ruler is already drawn and you want the status bar to display the ruler length again, click the ruler tool.

Moving the Ruler

❖ To move the ruler

1. Select the arrow tool.



2. Point to the center of the ruler, between the two endpoints.

The pointer changes to four directional arrows.



3. Drag the ruler to the desired location.

As you move the ruler, its length in micrometers appears in the status bar.

4. Release the mouse button.

Resizing the Ruler

❖ To resize the ruler

1. Select the arrow tool.



2. Point to the ruler endpoint you want to move so that directional arrows appear to the right of the pointer.



3. Drag the endpoint to change the length and slope of the ruler as desired.

As you move the endpoint, the new length of the ruler in micrometers appears in the status bar.

4. Release the mouse button.

Drawing a Circle in the Video Pane



Use the circular aperture tool to draw a circle in the video pane, replacing any previously drawn circle or rectangle. This is useful for documenting the aperture size or measuring the diameter of areas of interest on the sample image.

Note This tool is available only if circular apertures can be used with your microscope.

❖ To draw a circle in the video pane

1. Select the circular aperture tool.
2. Drag within the video pane to draw the circle.

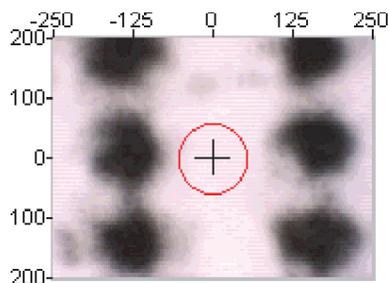
As you move the mouse, the circle diameter changes while the circle remains centered in the pane. The distance from the center point to the pointer is the radius of the circle. The circle diameter in micrometers appears in the status bar as you move the mouse.

If you are documenting the size of an installed circular aperture, simply draw the circle the same size as the aperture image. When you later save, print or copy the video image, you can first remove the aperture so that the entire sample image is visible.

Note Enlarging the video image with the 320 x 240 command or the 640 x 480 command in the Image menu can make it easier to draw the circle the desired size. See “Changing the Size of the Video Image” on page 12 in [Setting Up the Software and Display](#) for more information.

3. When the circle is the desired size, release the mouse button.

Here is an example of a drawn circle:



Resizing a Drawn Circle

❖ To resize the circle

1. Select the arrow tool.



2. Point to the ruler endpoint you want to move so that directional arrows appear to the right of the pointer.



3. Drag the perimeter until the circle is the desired size.

As you move the mouse, the circle remains centered on the cross hairs, and the new diameter in micrometers appears in the status bar.

4. Release the mouse button.

Drawing a Rectangle in the Video Pane



Use the rectangular aperture tool to draw a circle in the video pane, replacing any previously drawn circle or rectangle. This is useful for documenting the aperture size or measuring the diameter of areas of interest on the sample image.

Note If you have a Continuum microscope with an automated Reflex™ aperture, the rectangular aperture tool is not needed and therefore not available. See [“Setting the Automated Reflex Aperture”](#) on [page 18](#) for information on adjusting the aperture.

❖ To draw a rectangle in the video pane

1. Select the circular aperture tool.
2. Drag within the video pane to draw the rectangle.

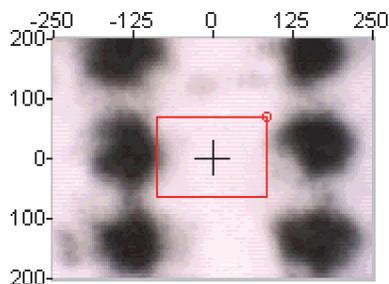
As you move the mouse, the rectangle size and shape change while the rectangle remains centered in the pane. The X and Y dimensions of the rectangle in micrometers appear in the status bar as you move the mouse.

If you are documenting the size of an installed rectangular aperture, simply draw the rectangle the same size and shape as the aperture image. When you later save, print or copy the video image, you can first remove the aperture so that the entire sample image is visible.

You can rotate the rectangle if necessary later by using the arrow tool. See [“Rotating a Drawn Rectangle”](#) on [page 26](#) for details.

- When the rectangle is the desired size and shape, release the mouse button.

Here is an example of a drawn rectangle:



Resizing a Drawn Rectangle

❖ To resize the rectangle

- Select the arrow tool.



- Move the pointer over the side or corner of the rectangle (except the corner marked with a small circle) you want to move so that one of the following directional arrows appears.



The corner marked with a small circle is used for rotating the rectangle.

- Drag the side or corner until the rectangle is the desired size and shape.

As you move the mouse, the rectangle remains symmetrical about the center point of the pane, and the new X and Y dimensions of the rectangle appear in the status bar.

- Release the mouse button.

Rotating a Drawn Rectangle

❖ To move the ruler

- Select the arrow tool.



A corner of the rectangle is marked with a small circle. You will rotate the rectangle by dragging this corner.

- Drag the marked corner clockwise or counterclockwise until the rectangle is displayed at the desired angle.

You can drag in either direction up to a maximum of 45 degrees of rotation. Because the rectangle is symmetrical about the center point of the pane, this 90-degree range allows all possible rectangle orientations.

The angle of rotation appears in the status bar as you move the mouse. A counterclockwise rotation is shown as a positive angle; a clockwise rotation is shown as a negative angle.

3. When the rectangle has the desired rotation, release the mouse button.

Adding Text to the Video Image



Use the text tool to add text annotation to the video image. Depending on the setting of Connect Text Annotation With Lines in the Options dialog box, the text may be connected to the annotated item with a line pointer. See “Setting the Options” on page 10 in *Setting Up the Software and Display* for more information.

Note To specify the text color, use the Text button in the Options dialog box. See “Specifying Annotation Colors” on page 11 in *Setting Up the Software and Display* for details.

❖ To move the ruler

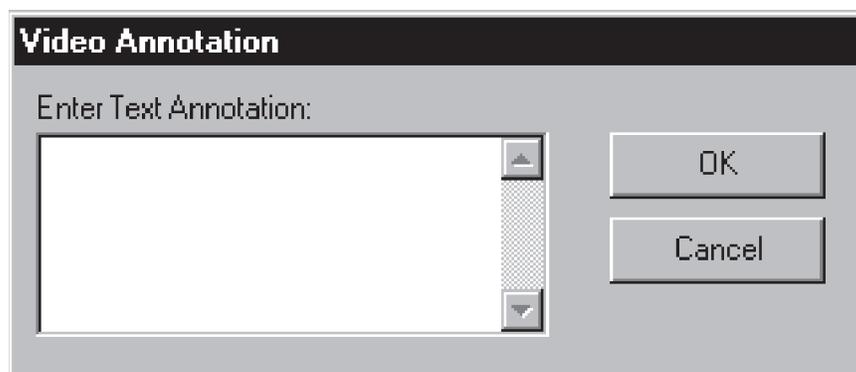
1. Use **Options** in the Edit menu to turn off Connect Text Annotation With Lines.
2. Select the text tool.

The pointer changes to look like this when you move it into the video pane.



3. Click the location where you want the text to begin.

A dialog box appears:

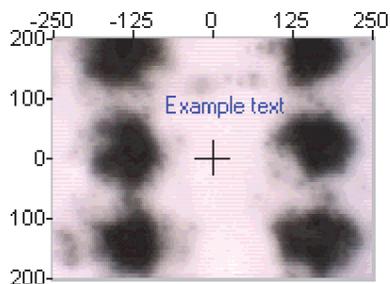


4. Type the desired text.

Pressing **ENTER** on the keyboard begins a new line of text.

5. Click **OK**.

The text annotation appears in the pane. Here is an example:



6. Click **OK**.

Moving and Editing Text

❖ To move and edit text

1. Select the arrow tool.



2. Point to the text you want to move or edit.

The pointer changes to four directional arrows.



3. Drag the text to the desired location.

As you move the text, any line that was drawn with the text is adjusted for the new location. (If you just want to edit the text, click it but don't drag it.) When you release the mouse button, a text box appears allowing you to edit the text.

4. If you want to edit the text, make the desired changes and then press **ENTER**.

If you do not want to edit the text, just press **ENTER**.

To delete the text item entirely, delete all the text in the text box and then press **ENTER**.

Clearing Annotation

Use **Clear** in the Edit menu to remove annotation from the video pane. Annotation includes the ruler, drawn circles and rectangles, text, and cross hairs marking the center of the pane.

If you change your mind, you can restore the cleared annotation by using **Undo Clear** in the Edit menu (see the next section). (You can do this only if you have not drawn new annotation since clearing the annotation.)

Choose **Clear** from the Edit menu.

All annotation is cleared from the video pane.

Restoring Cleared Annotation

If you have used **Clear** in the Edit menu (see the preceding section) to remove annotation from the video pane and have not yet defined any new annotation, you can use **Undo Clear** in the Edit menu to restore the annotation. Annotation includes the ruler, drawn circles and rectangles, text, and cross hairs marking the center of the pane.

Choose **Undo Clear** from the Edit menu.

The annotation items that were cleared are restored in the video pane

Printing

This section explains how to print the video image on paper.

Setting up the printer

Use **Printer Setup** in the File menu to specify a printer and set the print parameters before you print video images on paper. See the next section for information on printing the video image.

❖ To set up the printer

1. Choose **Printer Setup** from the File menu.

The Print Setup dialog box appears. This dialog box varies in appearance depending on your printer.

2. Set the parameters as desired.
3. Click **OK**.

Printing the Video Image

Use **Print** in the File menu to print the displayed video image at its current size. See the preceding section for information on setting up the printer.

If Video Annotation is turned on in the View menu, the image will be printed with any annotation you have drawn on it as well as the cross hairs and axes. If Video Annotation is not turned on, only the video image will be printed. See [“Enabling and Displaying Annotation”](#) on [page 22](#) in [Working With Annotation](#) for more information.

❖ **To print the video image**

1. If you want the image printed with its annotation and the axes, turn on Video Annotation in the View menu.

If you don't want the annotation and axes included, turn off Video Annotation. A check mark appears next to the command name when the command is on.

2. Adjust the size of the video image.

To do this, use **160 x 120**, **240 x 180**, **320 x 240** or **640 x 480** in the Image menu. (This does not change the field of view or the microscope's magnification of the sample.) See [“Changing the Size of the Video Image”](#) on [page 12](#) in [Setting Up the Software and Display](#) for more information.

3. Choose **Print** from the File menu.

The Print dialog box appears.

4. Set the print parameters.
5. Click OK.

Using the Video Image in Reports

This section explains how to copy or save the video image so that you can use it in reports, databases, presentations, publications and other types of documentation.

Copying the Video Image

Use **Copy Video Image** in the Image menu to copy the displayed video image at its current size to the Clipboard, replacing the current Clipboard contents. The copied image remains on the Clipboard until you perform another copy or cut operation using any application or until you exit Windows. You can paste the copied image into reports and other documents by using Windows applications such as word processing programs.

If Video Annotation is turned on in the View menu, the image will be copied with any annotation you have drawn on it as well as the cross hairs and axes. If Video Annotation is not turned on, only the video image will be copied. See [“Enabling and Displaying Annotation”](#) on [page 22](#) in [Working With Annotation](#) for more information.

Note The video image is copied using the same pixel resolution as the displayed image.

❖ To copy the video image

1. If you want to copy the image with its annotation, turn on Video Annotation in the View menu.

If you don't want the annotation included, turn off Video Annotation.

A check mark appears next to the command name when the command is on.

2. Adjust the size of the video image.

To do this, use **160 x 120**, **240 x 180**, **320 x 240** or **640 x 480** in the Image menu. (This does not change the field of view or the microscope's magnification of the sample.) See [“Changing the Size of the Video Image”](#) on [page 12](#) in [Setting Up the Software and Display](#) for more information.

3. Choose **Copy Video Image** from the Image menu.

The video image is copied to the Clipboard. You can now paste the image into documents using other Windows applications.

Saving the Video Image

Use **Save Video Image** in the Image menu to save the displayed video image, at its current size, as a 24-bit (true color) bitmap file or JPEG (.JPG) file. You can open or insert the saved image into reports and other documents by using Windows applications such as word processing programs.

If Video Annotation is turned on in the View menu, the image will be saved with any annotation you have drawn on it as well as the cross hairs and axes. If Video Annotation is not turned on, only the video image will be saved. See [“Enabling and Displaying Annotation”](#) on [page 22](#) in [Working With Annotation](#) for more information.

You can open the file later using an application that opens bitmap or JPEG files.

Note

- The video image will be saved using the same pixel resolution as the displayed image.
- If you save a video image containing text annotation using the JPEG format, the text will have a poor appearance when you later view the image. For this reason, bitmap format is recommended for saving images containing text.

❖ To save the video image

1. If you want to save the image with its annotation, turn on Video Annotation in the View menu.

If you don't want the annotation included, turn off Video Annotation.

A check mark appears next to the command name when the command is on.

2. Adjust the size of the video image.

To do this, use **160 x 120**, **240 x 180**, **320 x 240** or **640 x 480** in the Image menu. (This does not change the field of view or the microscope's magnification of the sample.) See [“Changing the Size of the Video Image”](#) on page 12 in [Setting Up the Software and Display](#) for more information.

3. Choose **Save Video Image** from the Image menu.

The Save As dialog box appears.

4. Type a filename in the File Name text box.
5. Select a file type from the Save As Type drop-down list box.

You can save the video image as a bitmap or JPEG file.

6. Select the directory where you want the image saved.
7. Click **OK**.

Using μ View With an FT-Raman View Stage

This section provides information for using your μ View software with an FT-Raman View Stage, an accessory for working with microscopic FT-Raman samples. You can use the accessory in the sample compartment of a Nicolet™ Nexus™ FT-Raman Module, Nicolet™ Magna-IR™ FT-Raman Module, or Nicolet™ FT-Raman 960 spectrometer. See the documentation that came with the accessory for complete information on using the hardware.

Setting the FT-Raman View Stage Origin

Before you use μ View with your FT-Raman View Stage, use Set View Stage Origin in the Stage menu to establish the specified center of horizontal stage travel as the zero (0,0) point. The zero point will be used as a reference for the X and Y values of stage locations displayed in the video pane and any annotation you create.

Note Before you use the FT-Raman View Stage, it must be initialized so that the stage coordinate values displayed by the software are repeatable and accurate with respect to the laser location. First make sure the stage cable is connected to the connector on the back wall of the sample compartment and then start OMNIC For Raman software. When the OMNIC For Raman software window appears, the stage has been initialized.

❖ To set the FT-Raman View Stage origin

1. Place the sample cup in the hole in the stage.
2. Move the stage to position the sample cup in the field of view.

You can use the stage movement tool or Move Stage in the Stage menu to do this.

3. Focus on the inside bottom surface of the cup.

You should see machined concentric circles on the surface.

4. Choose **Set View Stage Origin** from the Stage menu.

A message asks you to center the concentric circles on the cross hairs in the video pane.

5. Use the stage movement tool to move the stage to center the concentric circles on the cross hairs.

You may need to drag the dialog box out of the way first.

6. Click **OK**.

The center of the cup is now at the origin point (0,0).

Moving the Stage to the Origin Point

To move the FT-Raman View Stage to the origin point (0,0), choose **Go To Origin** from the Stage menu.

Moving the Stage to a Specified Point or by Specified Steps

Move Stage in the Stage menu lets you move the FT-Raman View Stage in either of two ways: You can move the stage in one operation to a point whose coordinates you specify. You can also move the stage incrementally along its X-axis or Y-axis.

❖ To move the stage to a specified point

1. Choose **Move Stage** from the Stage menu.

The Move Stage dialog box appears showing the current X and Y stage coordinates in the Move To Position box.

2. Move the stage as desired.
 - To move the stage to a numerically specified point, type the desired X and Y coordinates in the X Position and Y Position text boxes in the Move To Position box, and then click **Move**. The stage moves to the specified point.
 - To move the stage a specified distance along its X-axis or Y-axis, type the desired distance in the Step Size (μm) text box in the Move By Steps box, and then click the button labeled with the desired direction of movement. The following table explains how the buttons move the stage.

Button	Effect
-X	Moves the stage to the right to display a portion of the sample that is to the left of the current video frame. The stage X coordinate decreases.
+X	Moves the stage to the left to display a portion of the sample that is to the right of the current video frame. The stage X coordinate increases.
+Y	Moves the stage toward the front to display a portion of the sample that is “above” the current video frame. The stage Y coordinate increases.
-Y	Moves the stage toward the rear to display a portion of the sample that is “below” the current video frame. The stage Y coordinate decreases.

Each time you click a button, the stage moves the specified distance in the indicated direction. This allows you to move the stage incrementally toward or away from a sample feature.

- When you are finished moving the stage, click **Close**.

Turning the FT-Raman View Stage Lamp On or Off

Choose **Turn Lamp ON** from the Stage menu to turn on the FT-Raman View Stage lamp. When you choose the command, its name changes to Turn Lamp OFF. To turn off the lamp, choose the command. The command name then changes to Turn Lamp ON.

Note You can also turn the lamp on or off with the Lamp check box on the Bench tab of the Experiment Setup dialog box of OMNIC For Raman. See the OMNIC For Raman Help system for more information.