



# MetaXpress® 6 Software Guide

Applying Calibration Bars, Date/Time Stamps,  
and Text to Images

Date Revised 07/01/15 Version B



# Chapter Purpose

The purpose of this chapter is to guide the user through applying graphics to images such as calibration bars, date, time, text, etc. on both single and multi-plane images.

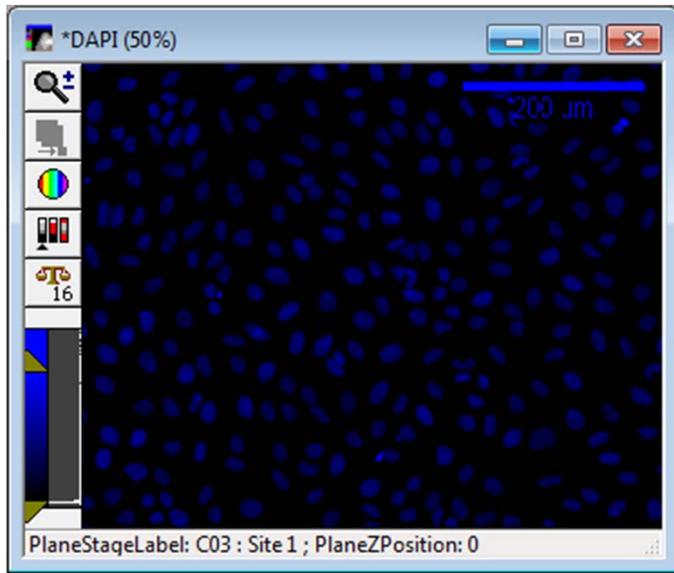
This chapter will describe applying graphics to both 8/16 bit and 24 bit images. It is highly recommended to apply these types of graphics to 24 bit images only. Graphics applied to 8/16 bit images have intensity values that are part of the image and can interfere with further processing downstream (i.e. image processing and analysis).



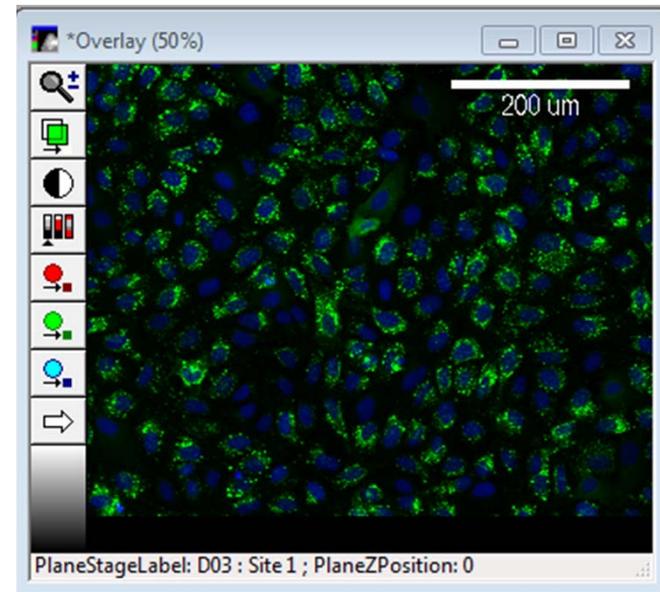
# Why Use a 24 Bit Image for Applying Graphics?

Molecular Devices recommends converting images to 24-bit when applying graphics. When graphics are applied to a 8/16 bit image, the pixels associated with the graphic have an intensity value. These pixels can then interfere with any processing downstream such as image analysis. Additionally, there are more formatting options for graphics applied to 24-bit images such as being able to apply different colors.

In the below 16-bit example image, the calibration bar is based on the LUT (blue) of the image

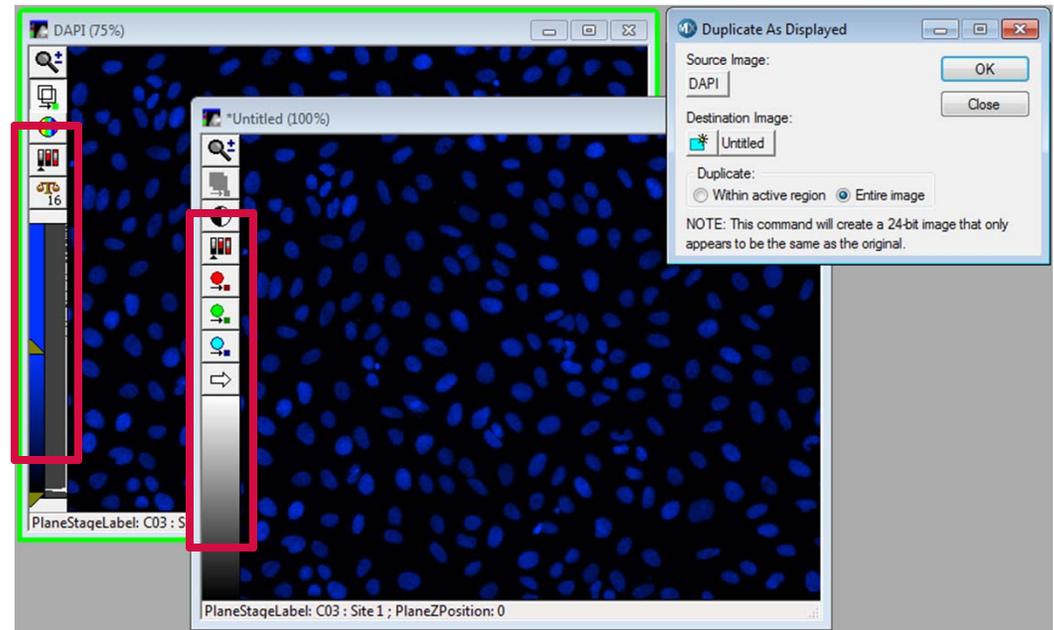
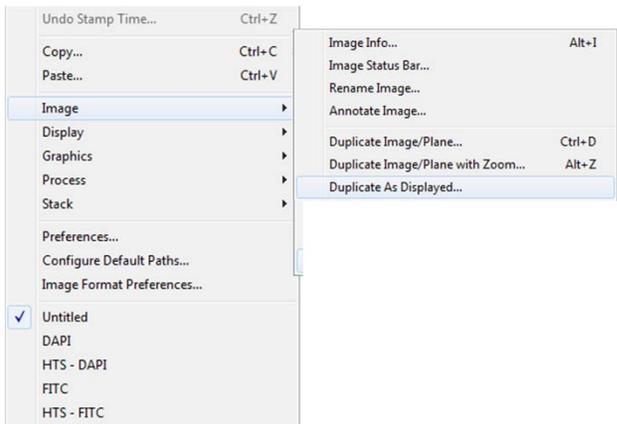


In the below 24-bit example image, the calibration bar can be displayed in different colors



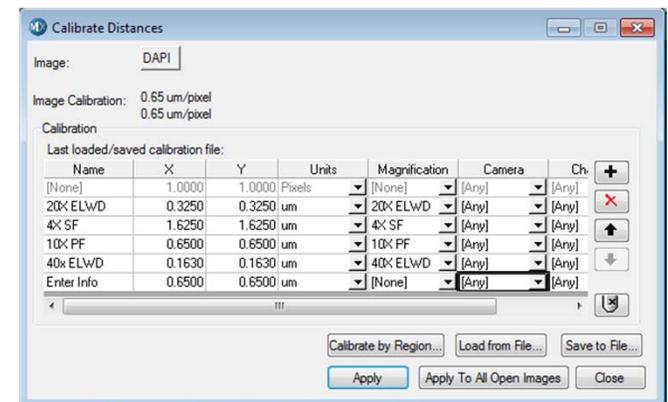
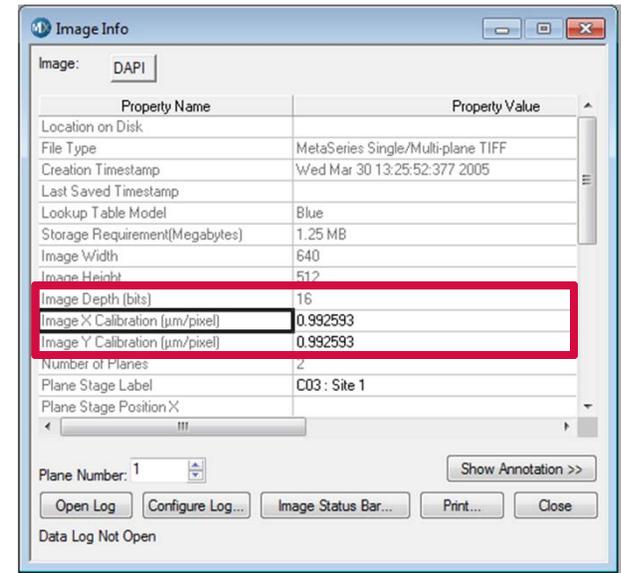
# Converting a 8/16 Bit to 24 Bit Image

1. In the main menu, select **Edit > Image > Duplicate As Displayed**
2. Select the appropriate image by clicking on the button below **Source Image**
3. Under the **Duplicate** section, select **Entire Image**
4. Click on the **Okay** button
5. This will create a 24 bit image



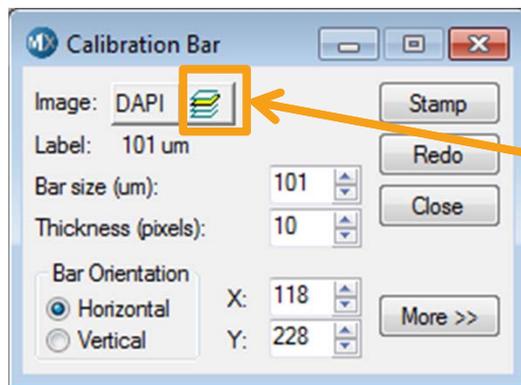
# Applying a Calibration Bar

1. Calibration Bars are used to stamp a distance calibration bar on the selected image
2. Applying a calibration bar requires that the image(s) are annotated with pixel-calibration values
3. Click on the **Image Info** button  or press the **ALT + I** buttons on the keyboard
  - If the images were taken on an ImageXpress instrument, pixel-calibration values should be automatically populated
4. If the images were taken on another microscope, in the main menu select **Measure > Distances > Calibrate Distances**
  - Click on the  button to add another row
  - Enter **Name**, **X/Y** calibration values, and select **Units**
  - Click on the button next to **Image** to select the image of interest and click **Apply** OR click on **Apply To All Open Images**



# Applying a Calibration Bar

5. In the main menu, select **Edit > Graphics > Calibration bar**
6. Select the source image by clicking on the button next to **Image** or clicking on the image itself (highlighted in green)
7. Enter / Adjust the following:
  - **Bar size ( $\mu\text{m}$ ):** Length of the bar stamped on the image
  - **Thickness (pixels):** thickness of the bar stamped on the image
  - **Bar Orientation:** adjust the X/Y values or click and drag the outline of the bar in the image to adjust positioning

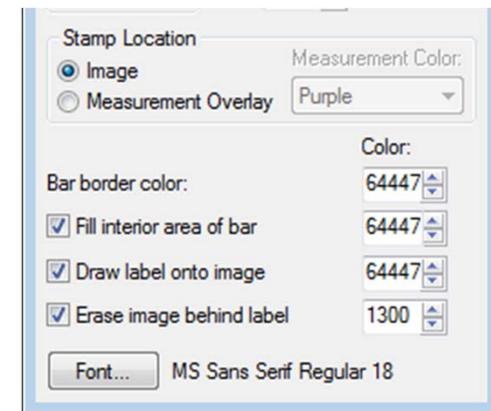
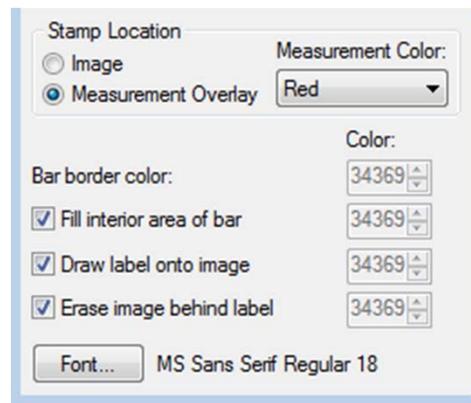
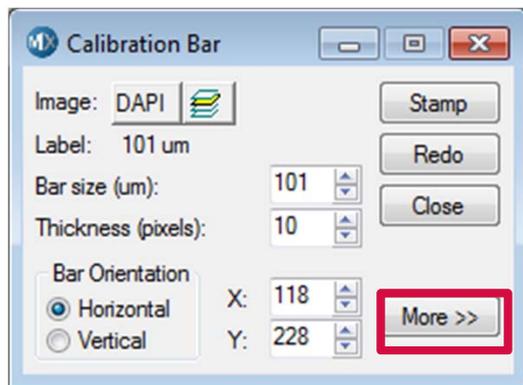


If you would like to apply the graphic to a stack of images. Use this button to select the appropriate plane(s).



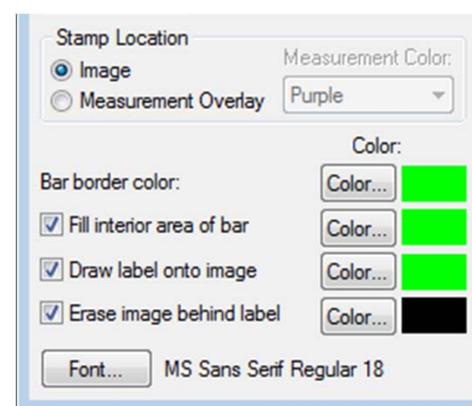
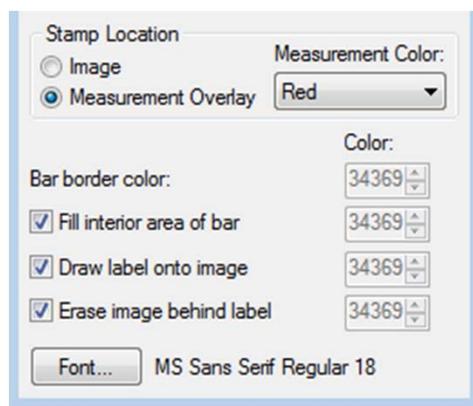
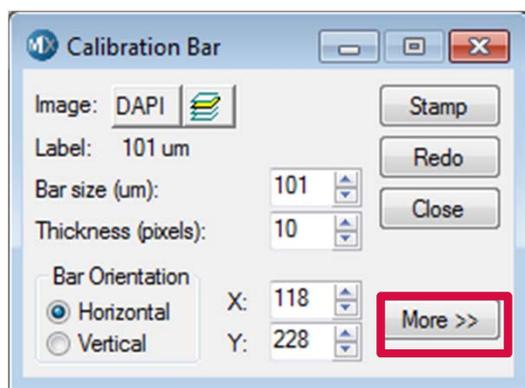
# Applying a Calibration Bar to 8/16 Bit Image

- Click on the **More>>** button for more formatting options
  - To apply the calibration bar as part of the overlay (does not affect pixel intensity in image), select **Measurement Overlay** and select the desired color from the drop-down menu
  - To apply the calibration bar as part of the image (affects pixel intensity in image), select **Image** and set the colors for the borders:
    - Fill interior area of bar:** highest value possible
    - Draw label on image:** highest value possible
    - Erase image behind label:** lowest value possible
  - Under **Bar border color** enable all options
  - Click on the **Font** button to change font and size
- Click on the **Stamp** button to apply the calibration bar



# Applying a Calibration Bar to 24 Bit Image

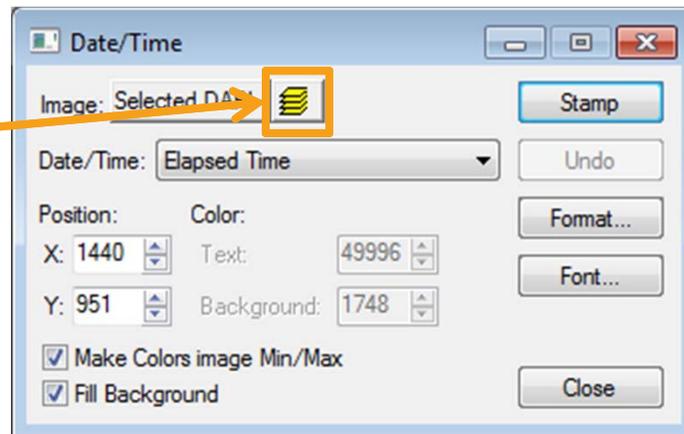
8. Click on the **More>>** button for more formatting options
  - To apply the calibration bar as part of the overlay (does not affect pixel intensity in image), select **Measurement Overlay** and select the desired color from the drop-down menu
  - To apply the calibration bar as part of the image, select **Image** and set the colors for the borders:
    - **Bar border color**: color of choice
    - **Fill interior area of bar**: color of choice
    - **Draw label on image**: color of choice
    - **Erase image behind label**: different color than the above (suggested set to black)
  - Under **Bar border color** enable all options
  - Click on the **Font** button to change font and size
9. Click on the **Stamp** button to apply the calibration bar



# Applying a Date / Time Stamp

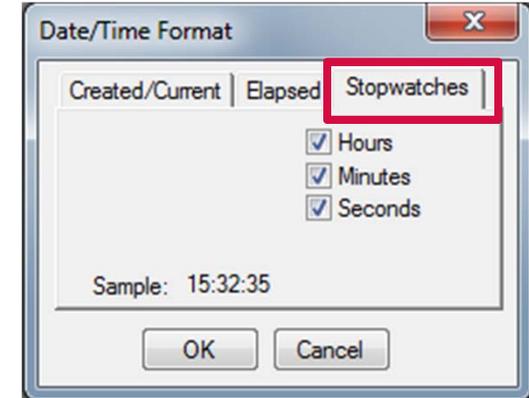
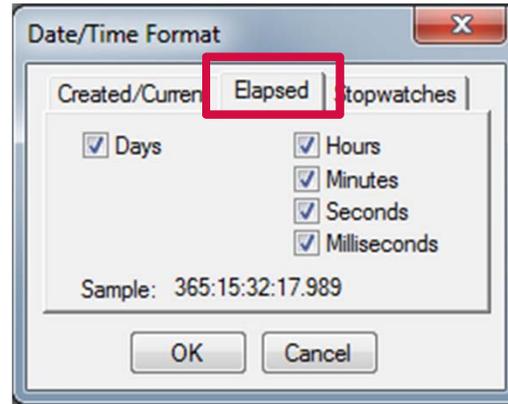
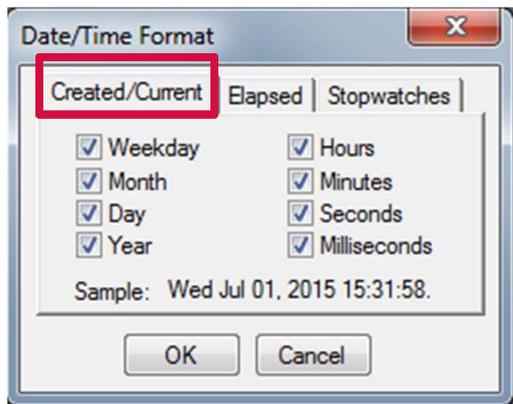
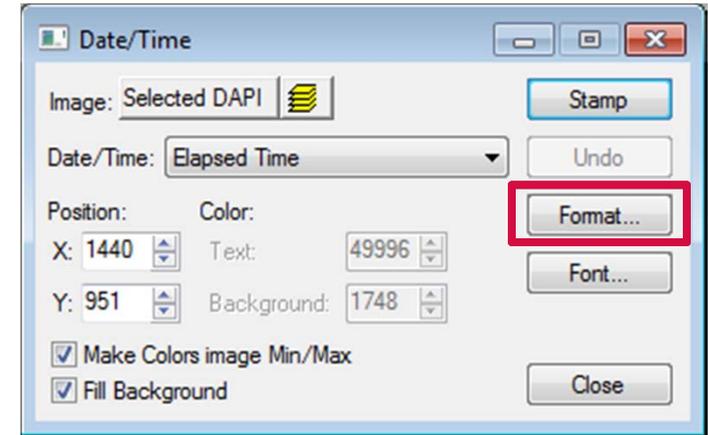
1. In the main menu, select **Edit > Graphics > Date/Time**
2. Select the source image by clicking on the button next to **Image** or clicking on the image itself (highlighted in green)
3. From the **Date/Time** drop-down menu, select the desired option:
  - **Time Image was Created:** time image was created (acquired)
  - **Current Time:** current time on the computer
  - **Elapsed Time** (use for stacks only): time between planes
  - **Stopwatch 1/2/3:** enter description
4. Click on the **Font** button to change font type, size, and formatting

If you would like to apply the graphic to a stack of images. Use this button to select the appropriate plane(s).



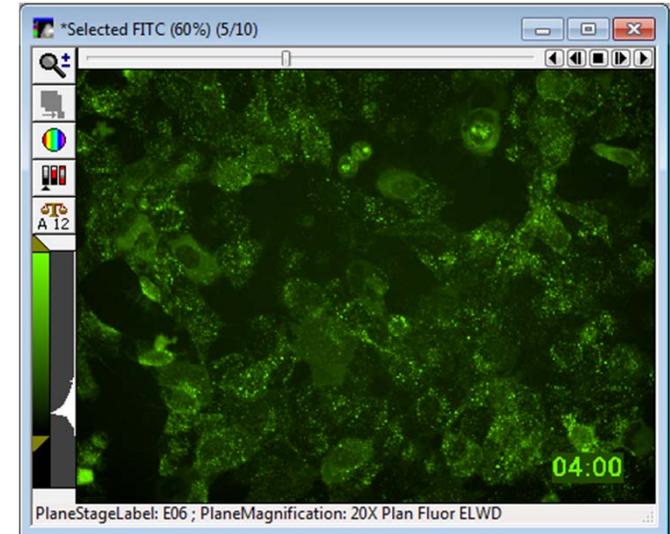
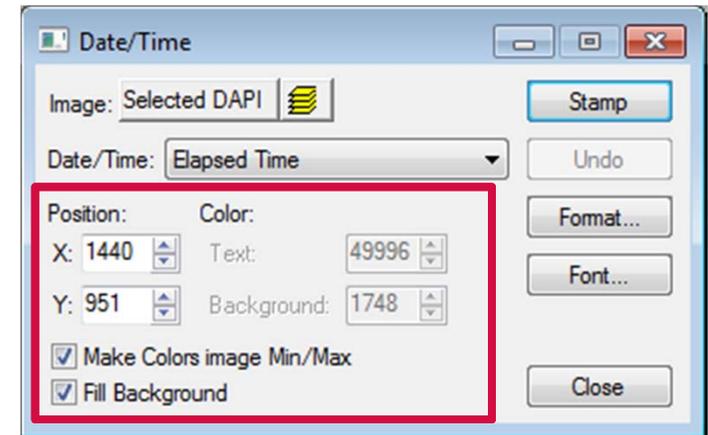
# Applying a Date / Time Stamp

5. Click on the **Format** button to configure Date/Time format
6. Click in the corresponding tab as selected in the **Date/Time** drop-down menu
7. Enable the desired checkboxes and click the **OK** button



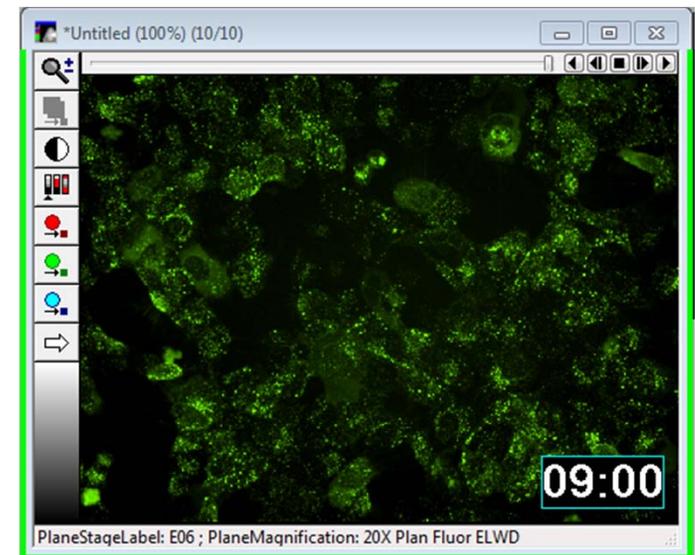
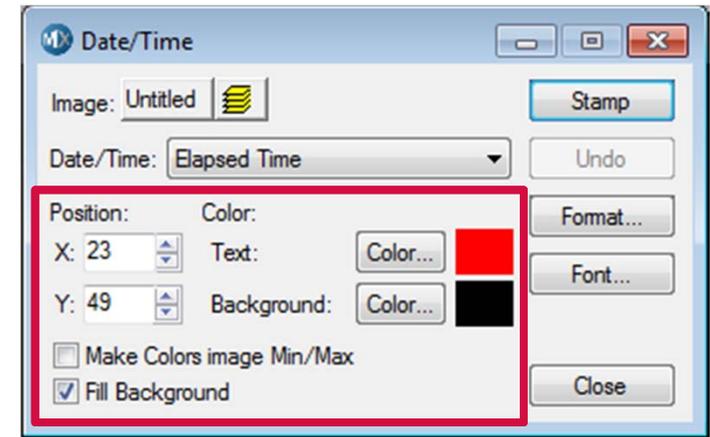
# Applying a Date / Time Stamp to 8/16 Bit Image

- Adjust the position of the time stamp using the **X/Y** spin boxes or by click and dragging the position box on the image
- If the **Make Colors image Min/Max** is enabled, the colors of the stamp will be based on the displayed (LUT) color of the image
  - Disable the checkbox in order to enter values in the spin boxes under the **Color** section
  - Values are based on pixel intensity (higher values = brighter color)
- Optionally, enable **Fill Background** to change the color behind the stamp
- Click on the **Stamp** button



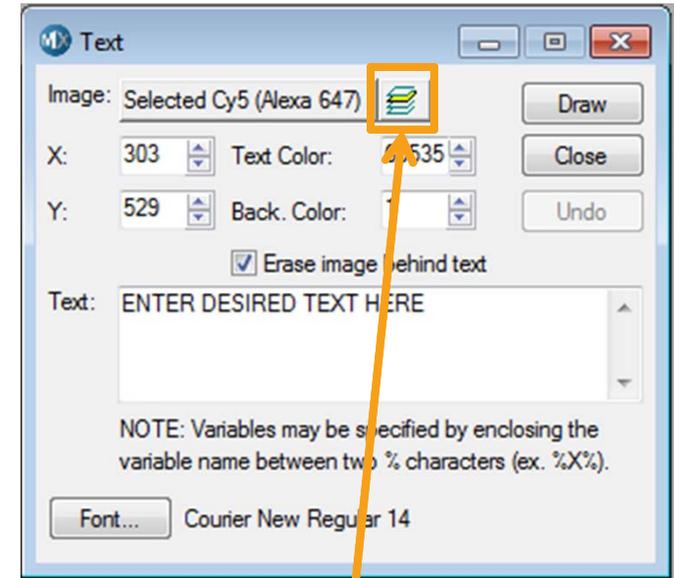
# Applying a Date / Time Stamp to 24 Bit Image

- Adjust the position of the time stamp using the **X/Y** spin boxes or clicking and dragging the position box on the image
- If **Make Colors image Min/Max** is enabled, text will be gray and background will be black
- Disable the checkbox in order to select desired colors
- Click on the **Stamp** button



# Adding Text

1. The **Text** dialog can be used to stamp any text to image(s)
2. In the main menu, select **Edit > Graphics > Text**
3. Select the source image by clicking on the button next to **Image** or clicking on the image itself (highlighted in green)
4. Enter the desired text in the **Text** section
5. Click on the **Font** button to change font type, size, and formatting
6. Use the **X/Y** spin boxes or click and drag the outline of the text box to adjust positioning

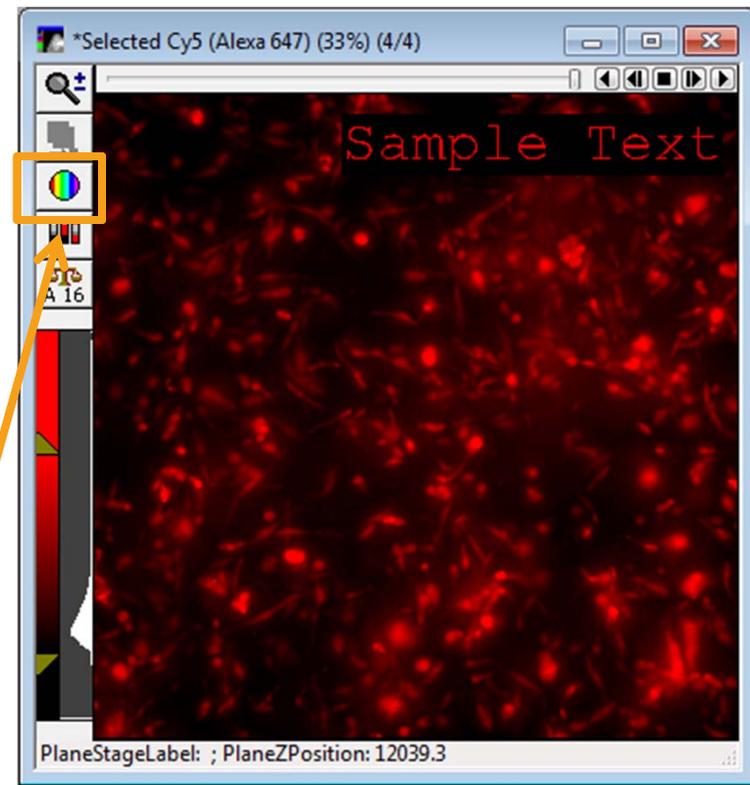
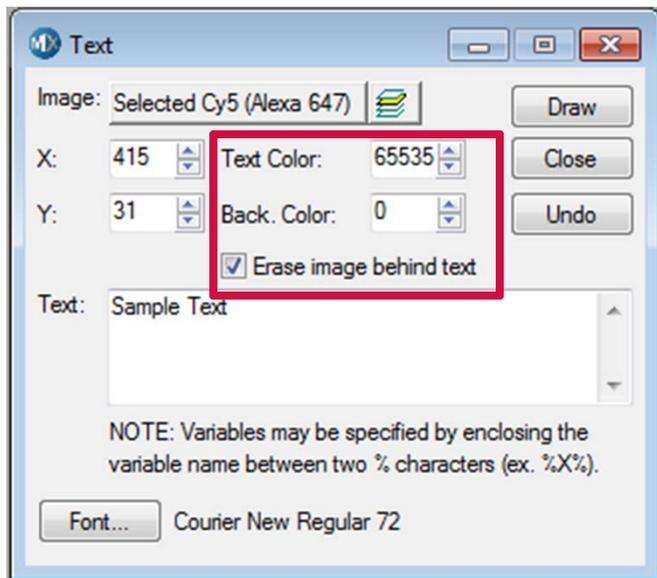


If you would like to apply the graphic to a stack of images. Use this button to select the appropriate plane(s).



# Adding Text to 8/16 Bit Images

- Text color for 8/16 bit images is based on the displayed color (LUT)
  - Use 65,535 for **Text Color**
  - If enabling **Erase image behind text**, set **Back color** 0
- Click on the **Draw** button

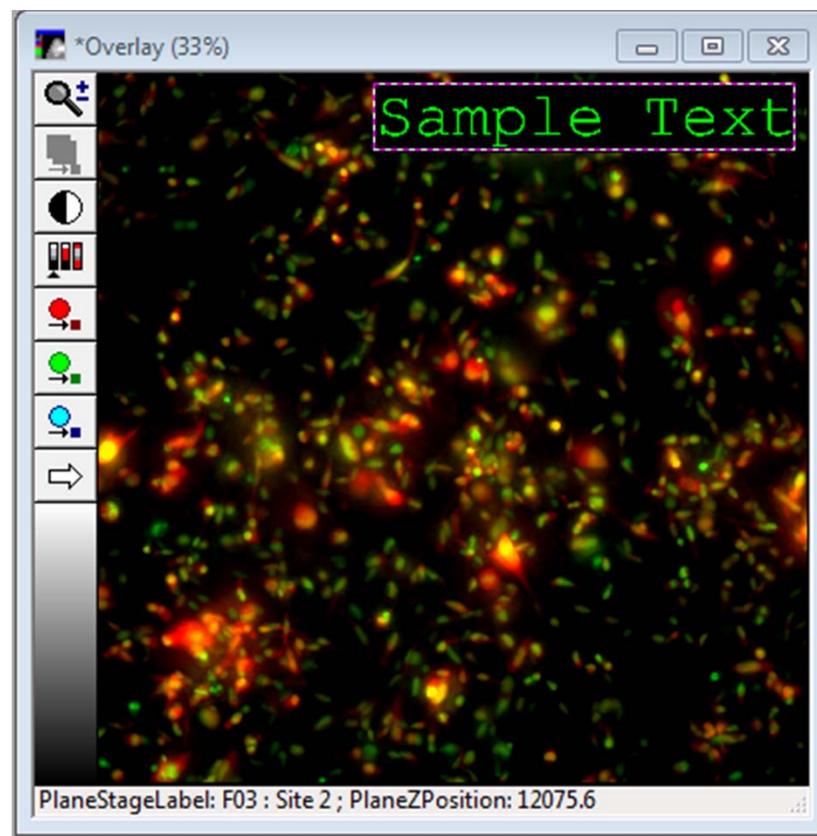
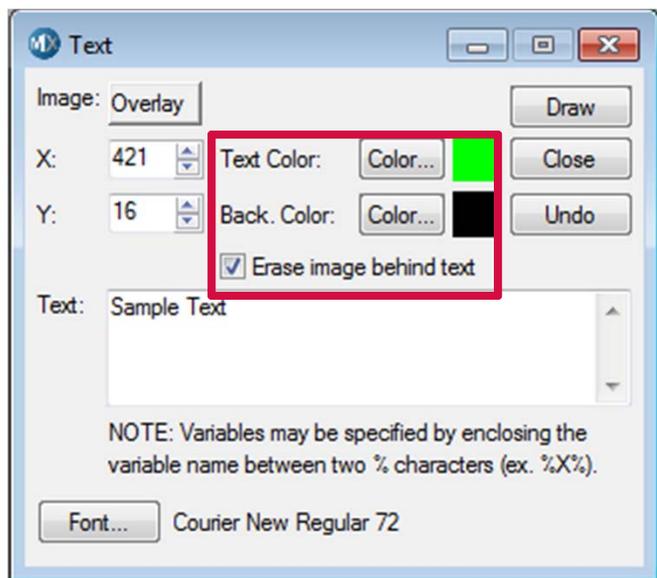


Text color is based on the LUT of the image. Changing the color will change the display of the image and the text color.



# Adding Text to 24 Bit Images

- Text color for 24 bit images can be selected
  - Click on the **Color** button next to **Text color** to select a color from the palette
  - If enabling **Erase image behind text**, click on the **Color** button next to **Back. Color**
- Click on the **Draw** button



# Support Resources

- F1 / HELP within MetaXpress® Software
- Support and Knowledge Base: <http://mdc.custhelp.com/>
- User Forum: <http://metamorph.moleculardevices.com/forum/>
- Request Support: <http://mdc.custhelp.com/app/ask>
- Technical Support can also be reached by telephone:
  - 1 (800) 635-5577
  - Select options for Tech Support → Cellular Imaging Products → ImageXpress Instruments





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