

# Optics Application Note

## How to Use Overlays on the PAXcam Live Preview

Users may overlay a stored reference image on top of a Live PAXcam image preview, or overlay some templated text, lines, scale bar or other annotations on the Live preview as well. These features extend the usefulness of the PAXcam in measuring, aligning, and comparing images in analytical processes. Take advantage of PAXcam's flexibility in performing these functions, to expand your PAXcam imaging experience!

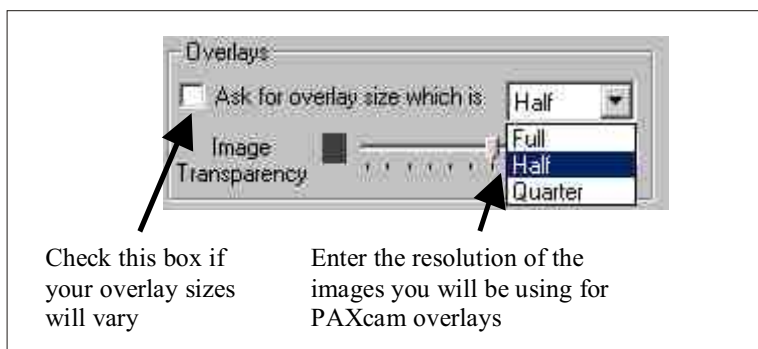
### Videotext Templates

A standard feature of PAX-it allows users to create overlays on stored images, with the Annotations toolbar from the main PAX-it screen. Circles, boxes, lines, arrows, text, and more may be drawn on a stored image, and adjusted for size, color, and placement. Any created annotations overlay may be stored as a template and recalled, so that multiple stored images may have the same editable annotations put on them (see article on *How to Use Videotext Templates in PAX-it*).

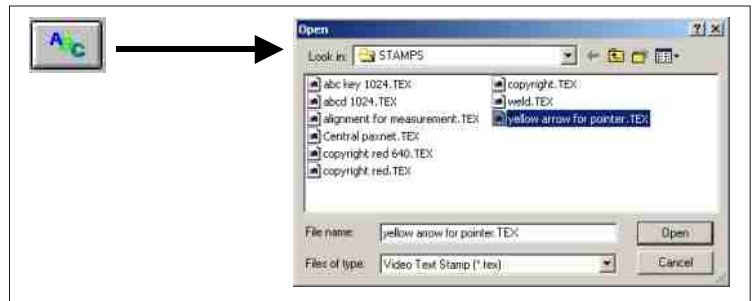
Stored videotext templates may now be overlaid on Live images as well, using the new PAXcam overlay functions.

### Basic Sequence for Applying an Overlay

1. Capture an image at the resolution you will be working at with the PAXcam.
2. Create a videotext template on the image using the Annotations toolbar in PAX-it.
3. Store the template using the "Save as Videotext Template" function in PAX-it, and give it a name. You may store multiple templates for different uses. It is a good idea to indicate the size of the template in its title, if you are creating different templates for different resolution images (see step #5).
4. Start the PAXcam and adjust your live image for previewing.
5. On the 'Advanced' tab in the PAXcam interface, indicate the size of the template being used. The template will then be scaled for whatever preview size you choose. If you commonly switch between different sized templates, you may wish to have the software prompt you to specify the template size each time one is chosen, by checking the checkbox.



- Use the Template Overlay button to access the list of templates that may be used as overlays, and choose the appropriate one.
- You will be asked if you wish to apply the template to the images that are captured, so that captured images also have the videotext already on them when they are put into the PAX-it folder.



- The template appears over the live preview image.
- To remove the template from the live view, press the "Remove Template" button.



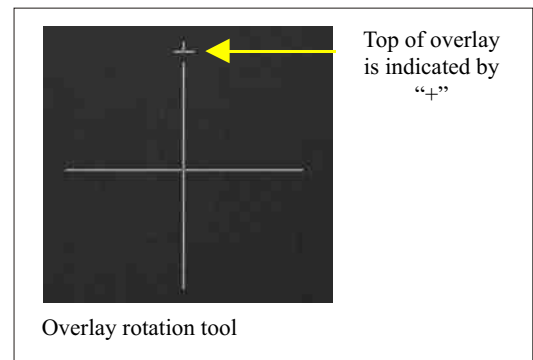
### Moving the Overlay

Overlays may be moved in any direction by clicking the mouse on the image and holding it down as you drag the mouse. The "Move Item" cursor appears. By releasing the mouse button, the template will be moved to the new position.



*Note:* To restore the template to its original "home" position, you may click the mouse button on the image, then click the right mouse button while continuing to hold the left button down.

Overlays may also be rotated on the image. Use the right mouse button to click on the image. The "Rotate Item" cursor appears. As the right mouse button is held down and the mouse is moved, the cursor's orientation changes to show the effect that the operation will have on the template (*NOTE: the 'top' of the template is noted by the smaller cross on the cursor.*) As you release the mouse button, the template will change its orientation to the new position.



To restore the template to its original "home" position, you may click the right mouse button on the image, then click the left mouse button while continuing to hold the right button down.

*Technical Note:* If you use a measurement line or scale bar as a videotext template, rotating the template may adjust the measurement by plus or minus one pixel on either end.

### Uses for the 'Overlay Template' Feature

The overlaying of videotext on the live image is important to users for a variety of reasons.

- Place a templated arrow or circle on the image, then use the "Move" function to create a "live pointer" that can be moved around on the screen to highlight an area.
 

*Tip:* If using an arrow as a pointer, create the template with the arrow pointing 'up'. This will make it easier to rotate the template on the live view, as the rotation tool's reference point will correspond to the arrowhead.
- Place templated lines on the live screen to orient a specimen in a "virtual jig".
- For repetitive measurements on similar samples, place templated measurement lines on the screen, and move them into position.\* Then capture the image with the lines applied upon capture. Any adjustments to the lines can be quickly made on the stored image and the measurements sent to a report in the standard PAX-it manner.

4. Use measurement lines, circles, boxes etc as Go/NoGo indicators on the Live preview.\*
5. Place a scale bar on a Live image.\*

\*Note: Please refer to the PAXcam User Guide section about setting the template resolution, as it is very important to make sure that your magnification factor is correct when using measurements and scale bars.

## Image Overlays

Basic sequence for applying an overlay.

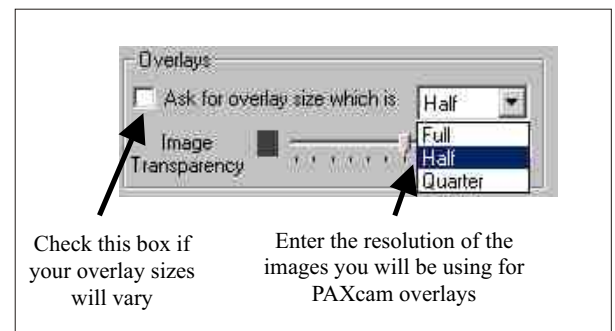
1. Capture images to be used as overlays and place them in a PAX-it folder. Make a mental note of the resolution of the captured images, as overlays will need to be scaled to the preview size they will be used with (see step 4).



2. In PAX-it, browse to the folder containing the overlay images, and right mouse click on the page of thumbnails to "Set as Overlay Folder"

3. Start the PAXcam and adjust the live preview of the sample you wish to image.

4. Go to the 'Advanced' tab of the PAXcam interface, and use the dropdown list to enter the resolution setting for the overlays that you will be using. If you have a standard overlay size, you may leave the checkbox unchecked and the software will assume all overlays to be the size specified. If your work requires the use of differently scaled overlays, you may have the software prompt for the overlay size each time a different overlay is used, by checking the checkbox.



**NOTE:** If your overlay images were not originally captured with the PAXcam, choose the closest value to the size of your overlay. Full = 1280 x 1024, Half = 640 x 512, and Quarter = 320 x 256 pixels. You may find the dimensions of any stored PAX-it image by right clicking on the image and choosing "Properties".

5. Press the Image Overlay button. The first image in the overlay folder will be placed on the Live preview.



6. On the Advanced tab of the PAXcam interface, you may use the "Image Transparency" slider to adjust how much of the live preview is 'bleeding through' the reference image. Moving the slider towards the left will make darker areas of your reference image transparent, so that the Live Preview image may be seen. Moving the slider towards the right will make lighter areas of your overlay image transparent, leaving the darker areas as the overlay component.

'Image Transparency' will adjust the mask properties of the overlay, to allow the Live Preview image to be seen behind it.



7. Use the Image Overlay buttons to navigate forward and backward in your overlay folder, to bring up other reference images.
8. To remove the template from the preview image, use the "Remove Template" button. Clicking on either Image Overlay button will now return you to the overlay image you were previously on.



## **Moving the Overlay**

The techniques for moving and rotating the image overlay are exactly the same as for the videotext template overlays described above. Please refer to that section for more information.

## **Uses for the Image Overlay Feature**

The primary use for the image overlay is for comparison of the live image to a reference or standard for a shape or size estimation. Some samples do not lend themselves well to automated image analysis and are best gauged against a visual reference. For example, gelfoam cross-sections do not threshold well for automated sizing of the foam's internal dimensions. By constructing a series of reference images, the ranking of a current unknown sample against the standard reference is easily accomplished. Similarly, a visual comparison can be made for grainsize estimation, flake shape classification, and other similar tests.

## **Tip**

When using the image overlays to gauge a live view against a series of known standards, you can identify your standard images by placing a videotext label on the image. If the non-transparent reference portion of your image is the dark portion, then make your videotext label with black text, if the non-transparent portion of your reference image is the lighter areas then make your videotext label with white text. NOTE: the label will not appear on your overlay unless you make it a permanent part of your image...to do this, go to *Image...Burn in Video Text* on the main PAX-it menu after you have created the label. You may wish to copy your image first, as burning in labels causes changes to your image that may not be recovered.



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