

The basic picture taking process consists of four steps:

- Preparation of the microscope, specimen, and camera.
- Performing a white balance computation.
- Capturing and focusing the initial image.
- Capturing the final image.

For more information on these functions, refer to the on-line *User's Guide to the SPOT Cooled Color Digital Camera*. For more information on accessing and using the manual, refer to final section of this brochure – “Using SPOT’s On-line Documentation.”

Preparing the Microscope and Camera

The first step in taking a picture is to prepare your microscope and camera.

1. Select the specimen that you want to photograph, and set up the microscope for Koehler illumination.
2. Ensure that the specimen is in focus.
3. Use a daylight filter (5500° K), and set the lamp voltage to the photo setting (or the rated lamp voltage).
4. Insert at least one ND12 and one ND6 neutral density filter into the light path.
5. Open the SPOT software:
 - Windows 95 and Windows NT users should select (from the Start menu) Programs, Diagnostic Instruments, and SPOT and refer to the “Taking a Picture – PC Users” section.
 - Mac users should open the TWAIN compliant software program that they are using with the SPOT camera and refer to the “Taking a Picture – Mac Users” section.

Taking a Picture – PC Users

1. From the Setup menu, select Image Setups. The Image Setups window appears with several pre-defined image setups.
2. Single click on the Brightfield option.
3. Click on the Current button, and then click on Close.

The next stage is to perform a white balance computation, where the camera samples your light source and computes the proper ratio between the red, green, and blue exposure values. This ensures that the white areas of your specimen will be white, as opposed to blue or orange. Steps 4 - 7 describe this procedure.

4. Click on the Compute White Balance Values toolbar button:



5. Position the slide so that the specimen is not in the field of view (i.e., a white area), and click on the Begin button.
6. Click on OK when the process is finished.
7. Move the specimen back into the field of view.

The third aspect of taking a picture is to capture an image. This is described in steps 8 - 15.



Note: The initial image will be out of focus, but it is useful as a guide for positioning the focus window, as described below.

8. Click on the Get Image (exposure from setup) toolbar button:



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Following a series of clicks, the image is downloaded to your screen.

9. Click on the Focus toolbar button:



10. Use the cursor to drag the focus rectangle to a high contrast, detailed area in the image.
11. Click on the right mouse button to open the Focus window. Choose a color that will give you the best focus contrast. Click on a color to see a preview.
12. Select Medium as the speed.

 *Note: If the image is too grainy at the Medium setting, try using either the Slow or the Slowest setting.*

13. Click on the Begin button, and focus the microscope or coupler.
 14. When the specimen is in focus, click on the Close button.
- Having focused the original image, you can now take the final exposure.
15. Click on the Get Image (exposure from setup) toolbar button:

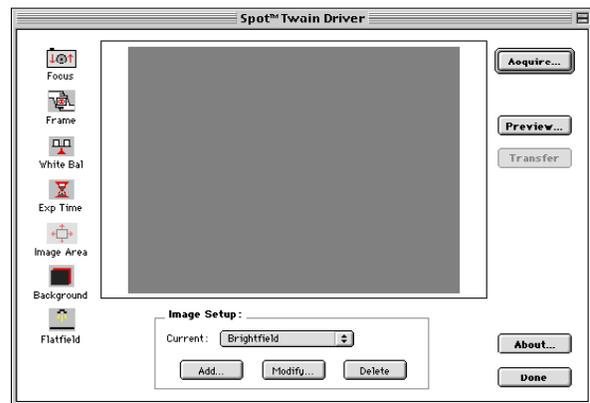


Taking a Picture Via TWAIN

Because users can use a variety of TWAIN compliant image editing software programs (i.e., Photoshop and Image Pro Plus), the instructions will vary according to the program that you are using. The instructions in this brochure are written for Photoshop 5.0 users. For details on using other versions of Photoshop or Image Pro, refer to the *User's Guide*....

1. *Establish SPOT as the default TWAIN interface.* Do the following:
 - a) From the File menu, select the Import option.
 - b) Select the TWAIN Select option.
 - c) At the source select window, select the Spot Twain Driver option and click on OK. The SPOT software is now the default TWAIN source.
2. *Open the TWAIN interface.* Do the following:

From the File menu, select Import and TWAIN Acquire. The Spot Twain Driver window appears as shown here:



3. From the Image Setup box, select Brightfield as the Current setup.

The next stage is to perform a white balance computation, where the camera samples your light source and computes the proper ratio between the red, green, and blue exposure values. This ensures that the white areas of your specimen will be white, as opposed to blue or orange. Steps 4 - 7 describe this procedure.

4. Click on the White Bal button at the left of the Spot Twain Driver window. The status window appears.

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5. Position the slide so that the specimen is not in the field of view (i.e., a white area).
6. Click on the Begin button to start the calculation. The Compute White Balance window displays the status message **Computing white balance values**. You should hear a series of clicks as the camera samples the light.
7. When the camera finishes calculating the white balance values, the program displays the computed white balance values. Click on OK to save the white balance values.

The third aspect of taking a picture is to capture an image. This is described in steps 8 - 16.

 *Note: The initial image will be out of focus, but it is useful as a guide for positioning the focus window, as described below.*

8. Click on the Preview button at the right of the Spot Twain Driver window. Following a series of clicks, the image is downloaded to your screen.
9. Click on the Focus button:



10. A rectangle appears, superimposed on the center of the image. This rectangle defines the area that you will focus on. To move the rectangle, click and drag.
11. After you have selected the area that you want to focus on, double click on the rectangle. The focus window appears superimposed on the image, with the area that you selected in the frame.

12. Choose a color that will give you the best focus contrast. Click on a color to see a preview.
13. Select Medium as the speed.

 *Note: If the image is too grainy at the Medium setting, try using either the Slow or the Slowest setting.*

14. Click on the Begin button, and focus the microscope or coupler.
15. When the specimen is in focus, click on the Stop button.

Having focused the original image, you can now take the final exposure.

16. Click on the Acquire button. The focused image appears in Photoshop.