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How To Use the Plugin

While most controls can be used at any time and in any order, there is a certain order for some aspects.

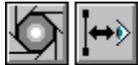


You must first establish contact with a scanner by selecting either the GPIB or SCSI button.

Film Type:

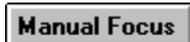


Select either one of the four standard film types or one of the custom film types.



Auto

Autoexposure and Autofocus should be performed for every slide. When Auto is checked, these will be done before the next preview or final scan.



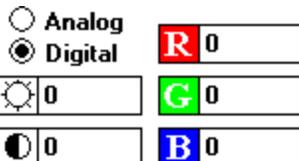
If the scanner could not autofocus, perform a manual focus.



Perform a preview scan in color or black & white.



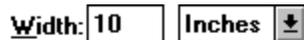
Adjust the orientation of the preview.



Lighting:



Adjust the color of the preview.



Pitch: 5 635 DPI

Set the scanning area and resolution.



Start the final scan.

Interface



The SCSI (Small Computer Systems Interface) button is only enabled if you have installed a SCSI board and ASPI (Advanced SCSI Programming Interface) drivers in your computer.



The GPIB (General Purpose Interface Bus) button is only enabled if you have installed a National Instruments GPIB board and the Windows drivers for that board.

To select either interface, press the appropriate button. You will be presented with a dialog offering a selection of addresses.

The LS-3510AF scanner is shipped with a SCSI address of 5 and a GPIB address of 10. The address is set by a rotary switch on the scanner interface board. The LS-3500 scanner is shipped with a GPIB address of 15. The address is set using the switches on the rear of the scanner. Refer to your scanner manual if you wish to change the default setting.

For SCSI, selecting **Auto** will make the plugin search the SCSI bus for the scanner every time it wishes to open a channel to the scanner. Selecting the specific address will speed this process.

For GPIB, the simplest method is to select the specific address. To use a device name, select **Name** from the list and type the device name in the **Name** text edit field. The device name must be registered in the GPIB.INI file, preferably by using the WIBCONF.EXE program supplied with the board or by using a text editor to edit the file.

Sizing and Resolution

In addition to the crop selection, there are several factors that affect the size and resolution of the final scan.

Width:

Height:

Inches
cm
mm
Picas
Points
Pixels

The width and height of the final scan can be specified several different ways.

Res:

dpi
dpcm
dpm

The resolution is used to determine how many pixels are in each inch, centimeter, millimeter, pica or point.

Pitch:

The pitch divides the scanner resolution. A pitch of 1 is full resolution, 2 is half, 3 is one third, etc. This value is limited so that it cannot go below 1.0.

When these values are changed, other values or the crop will also change. You can lock certain values by checking the **Proportions** or **File Size** checkboxes. If the **File Size** checkbox is checked, the **Proportions** checkbox is automatically checked.

With neither checkbox checked, changing any numerical value will update the crop selection. This mode should be used when you want a specific image size, either in a measurement unit or pixels.

With the **Proportions** checkbox checked, changing a numerical value will change some other numerical value in order to maintain the current crop selection. If the crop size is changed, it will maintain the same proportions as when the **Proportions** checkbox was checked.

With both the **Proportions** and **File Size** checkboxes checked, changing a numerical value or the crop will change another numerical value or the crop to maintain the file size when the **File Size** checkbox was checked.

Highest Quality

Normally, the slide is scanned while the stage is in motion. This may cause some jitter in low resolution scans (pitch 4 and up). The Highest Quality checkbox will ensure that the slide has settled before reading it. This will slow the scanning process.

Smooth Scaling

The scanner hardware only supports whole number pitches. To achieve the in between pitches, the plugin will scan at the next higher resolution (next lower pitch) and scale the image down.

Normally, any extra data is thrown away. This may cause a ragged appearance at lower resolutions (pitch 4 and up). When this checkbox is checked, that extra data is blended in. This takes longer, especially with larger images, but the results are very good. With higher resolutions (pitch 1-4) there may be no discernible difference.

Any scaling will be done while the next line is being scanned to minimize the extra time needed for this process.

Color Adjustment

Analog
 Digital

In Digital mode, the controls are brightness, contrast and red, green and blue tint.

Analog
 Digital

In Analog mode, the controls are exposure, black level and color balance.

Lighting:

The Lighting controls are only available for color negatives.

Color Adjustment - Digital

Analog
 Digital

 0	 0
 0	 0
 0	 0

The digital controls are brightness, contrast and color tint. These controls are superseded by the tools in PhotoStyler for the LS3500 and eight bit LS3510AF scanners. For twelve bit LS3510AF scanners, however, these controls offer a range of manipulation not available once the data is brought into PhotoStyler. They perform moderate alterations to the image data before that data is converted into eight bits per color.

Color Adjustment - Analog

Analog Digital

 R	50
 G	50
 B	50

 50



The black level will shift the voltage level that comes from the CCD array, in effect lightening or darkening the entire image slightly. The effect is reversed for negatives. This can be used to increase detail in the range of darker areas of a slide where the scanner is more susceptible to detail loss. If no value is specified, the value determined by the last autoexposure is used.

The exposure and color balance controls directly affect the time that the CCD is exposed to the slide. The base value is 50, and any change is a direct ratio of the value to 50 ($50/50 = 1$). For instance, an exposure of 100 is twice as long as 50 ($100/50 = 2$) and 25 is half as long ($25/50 = 0.5$). In photographic terms, doubling or halving the exposure time is equivalent to one f-stop.

If both the exposure and color balance are changed, the effect will be multiplied. For instance, an exposure of 25 will halve the time for all colors and a red balance of 100 will double the time for the red only. ($25/50 \times 100/50 = 50/50 = 1$)

NOTE: Increasing exposure time will darken negatives and lighten positives and decreasing exposure time will lighten negatives and darken positives.

The combination of the exposure and color balance controls can produce an effect that the scanner cannot produce. The scanner has a minimum exposure time which will limit the exposure value to about 20. This will vary depending on how dark the slide is, which is determined during autoexposure. On the high end, overexposing the CCD will cause streaking.

Color Adjustment - Lighting

Lighting:



The **Lighting** control can be used to adjust the color of the image based on what lighting conditions the original subject was photographed under. These conditions are expressed as color temperature. For instance, **Early Sunset** has a color temperature of 2000 K and **Skylight** has a temperature of 7000 K. Lower numbers are more orange in color and higher numbers are more blue. Selecting **Custom...** will allow you to enter a specific color temperature between 2000 K and 7000 K.

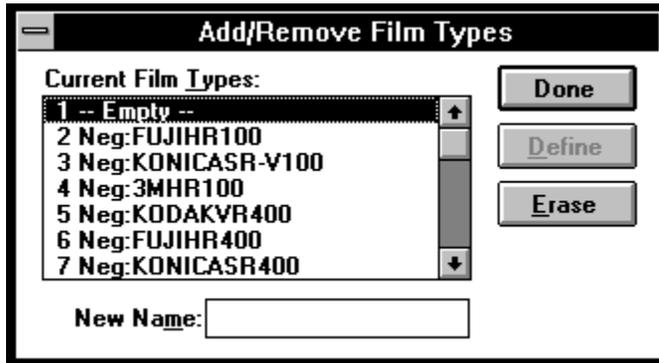
Film Type

Film Type:

Color Positive	↓
Color Positive	↑
Color Negative	
B & W Positive	
B & W Negative	
2 Neg:FUJIHR100	
3 Neg:KONICASR-V100	
4 Neg:3MHR100	
5 Neg:KODAKVR400	↓

The first four film types will always be present. For the LS-3510AF, any custom film types will be listed under these four. Press the **Add/Remove Film Types** button to edit the custom film types.

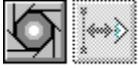
Film Type - Custom



To add or replace a film type, place a sample of the UNEXPOSED color negative film in the scanner, select an entry from the list, type a name in the **New Name** text edit field and press the **Define** button. You will be asked to verify the operation.

To remove a film type, select the entry from the list and press the **Erase** button. You will be asked to verify the operation.

Autoexposure



Auto

When you press this button, the scanner will examine the slide to determine the optimum exposure time and black level. You must select a film type before pressing this button. Autoexposure should be performed on every slide, but it is not necessary for custom film types.

If the **Auto** checkbox is checked, auto mode is enabled and an autoexposure will be performed before the next preview or final scan.

Autofocus



Auto

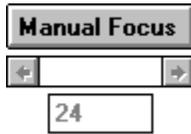
This button is only enable when a LS-3510AF is connected. When you press this button, the scanner will attempt to autofocus on the slide. If successful, the focus position will be placed in the manual focus text edit field, otherwise, it will return to the previous focus position and you must focus manually.

If the **Auto** checkbox is checked, auto mode is enabled and an autofocus will be performed before the next preview or final scan.

Auto Mode

Checking the **Auto** checkbox will cause the plugin to do an autoexposure and autofocus before the next preview or final scan.

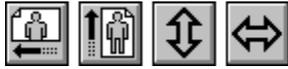
Manual Focus



Sometimes the autofocus logic of the scanner is unable to focus on an image due to low contrast or lack of sharp edges. You should have already previewed the slide before starting this process.

Press the **Manual Focus** button to enter manual focus mode. The **Manual Focus** button will change to a **End Focus** button. Select an area to zoom in on by clicking on the area in the preview. The plugin will do a high resolution scan at that position. Adjust the focus position by typing in the text edit box or by moving the scroll bar. The plugin will automatically scan the area after a two second delay. Click in the preview area to zoom out so you may select another position to focus on.

Image Orientation



The image rotation button will switch between a tall and wide orientation. Wide mode will reproduce the slide as seen from the front of the scanner. Tall mode will reproduce the left side of the slide as the top of the image. Due to the way that PhotoStyler works, Wide images will appear rotated 90°. If the **Rotate after final scan if necessary** checkbox is checked, it will be rotated to the proper orientation. This rotation can take a long time for large images. For LS-3510AF owners, the faster method is to rotate the slide 90° in the scanner and scan in Tall mode.

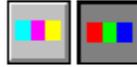
The preferred scanning orientation is with the emulsion toward the front of the scanner. This will usually produce a mirror image of the slide. Clicking the left-right or top-bottom flipping buttons will correct this.

Densitometer

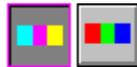
If the cursor is over the preview image, the value of that pixel will be displayed above the preview.



The value can be displayed in RGB values or CMY percentages by selecting one of these buttons.



(0,0) (3180,2520)
R=135,G=176,B=186 (4999,0)
This is the display in RGB mode.



(0,0) (3180,2520)
C=47%,M=30%,Y=27% (4999,0)
This is the display in CMY mode.

Previewing

 **In Color**

When you press the Preview button, the plugin will scan the entire scanning area at a low resolution and display the image in the preview area. If the **In Color** checkbox is checked, the image will be color. This checkbox allows you to do a faster black & white preview of a color slide.

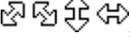
If this is the first preview since the **Auto** button was checked, an autoexposure and autofocus will be done.

Cropping

The current selected area of the slide is shown by a rectangle with handles at the corners and the center of each side. If no rectangle is shown, the entire scanning area is selected.

When the cursor is a , you may click and drag a rectangle to select the area you wish to scan. Double clicking will select the entire scanning area.

When the cursor is a , clicking and dragging will move the selection area.

When the cursor is one of , clicking and dragging will size the selection.

Defaults

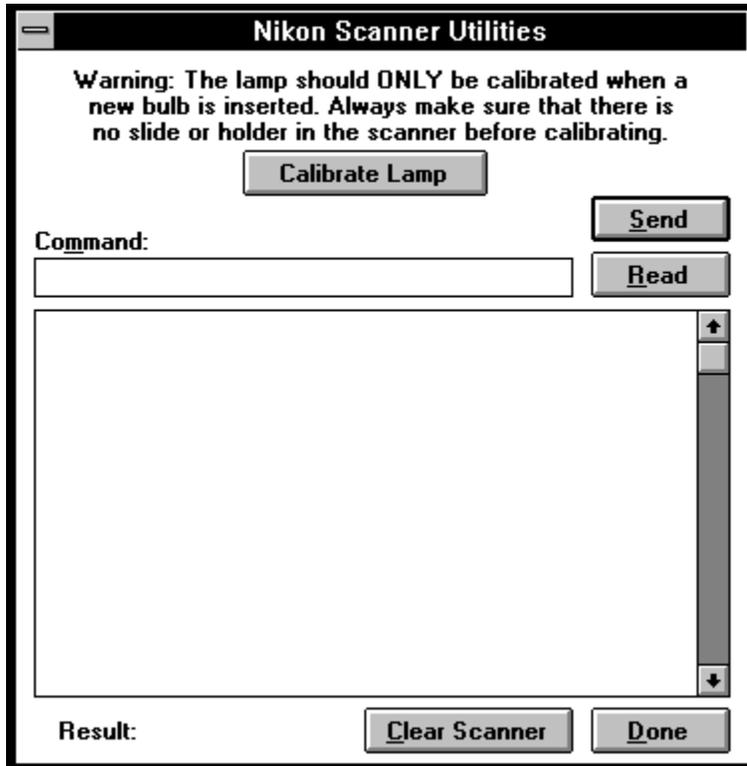
Pressing the **Set Defaults** button will save all the settings in the dialog to the PSTYLER.INI file. These settings will be the defaults when the plugin is started in a new session of PhotoStyler.

Pressing the **Use Defaults** button will set all the values of the plugin to the defaults stored in the PSTYLER.INI file.

Tools



Pressing the tools button will bring up the tools dialog.



Scanner commands may be typed in the **Command:** text edit box. Pressing enter will **Send** the command and set **Read** as the default button so that consecutive enters will read return data from the scanner. All communication with the scanner will appear in the scrollable text edit box. Commands sent to the scanner will be preceded by a ">" and data received from the scanner will be preceded by a "<".

The lamp can be calibrated for by pressing the **Calibrate Lamp** button. This should be used sparingly and with caution.

Pressing the **Clear** button will cancel a scanner command.

Press the **Done** button to return to the main dialog.

Lamp Calibration

Lamp calibration gathers information so the scanner can compensate for the light distribution and color balance. This procedure should be done when the scanner is first unpacked and when it has been shipped because the lamp may shift. The data is stored in EEPROM memory within the scanner. This type of memory can only be written to about 10,000 times.

You must remove any slide and slide holder from the scanner and close the dust cover. Then you will be asked to verify the operation. Do not disturb the scanner while it is calibrating. This will take a few minutes for the LS-3500 and up to 30 seconds for the LS-3510AF.