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IMAGE CAPTURE SOFTWARE

PHASE ONE

Phase One

Image Capture Software

Reference Manual

Edition 3.1 3.0.3

85004001

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About this Reference Manual

The topics in this reference manual are presented in alphabetical order.

Text in *italics* refers to a topic title.

Icons

Phase One Image Capture Software uses icons for quick access to frequently used features. How to find reference information on these icons is given below.

For Information on:	See topic:
	*Crop Box*
	*Color Picker*
	*Zoom*
	*Curves*
	*Tonal Range*
	*Gradation Curve*
	*Unsharp Masking*

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For Information on:	See topic:
	*Grid*
	*Mask*
	*Color Management*
	*Color Warning*
	*Lock*
	*Image File Info*
	*Capture Specification*
	*Gradation Curve*
	*Gradation Curve*

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For Information on:	See topic:
	*BatchTool* in BatchTool Manual
	*Embed Copyright*
	*Focus Tool* in Focus Tool Manual
	*ISS Control*
	*Quicktime Tool*
	*Scan Progress*
	*Settings*

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16-bit Plugin

Menu Item: Image ➜ Pixel Depth

See Also: Plugins

Description and Use

Phase One digital camera systems captures images in 12 bit/color and convert the information to 8 bit/color based on the settings in Tonal Range and Gradation Curves. By using the 16 bit file format you can in a few special setups achieve more color information and get even softer color gradients. The extra color information will only be valuable if you have a high-end image manipulation software and want to make heavy post processing in the image.

Important limitations

Only high end image editing software has full support of the 16 bit file format. Some popular image editing software packages will allow you to open a 16 bit file but will only give you access to a limited number of features.

No extra details

The 16 bit file format will give you no extra details in the image. The capturing resolution is still the same - only the color depth has changed. The details and maximum print size without interpolation is not changed by going from 8 bit to 16 bit file format.

To be able to give the optimum support to the few users that can benifit from the 16-bit file format you must register at Phase One to get access to the 16-bit file format in the Phase One Image Capture Software.

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About Phase One

Menu Item: Macintosh: ➜ About Phase One 3.0
PC: Help ➜ About...

Keyboard Short-cut: Macintosh: none
PC: Alt H A

Description and Use

This is an information only window showing you the version number of the Phase One Image capture Software installed on your computer.

The information contained in the *About Phase One* window is often asked for by technical support people during troubleshooting.

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About Plugins

Note: Only available with Macintosh software.

Menu Item: ➜ About Plugins...

Description and Use

This item allows you to view the software version number of the current plug-in modules associated with your Phase One Image capture Software.

Choose from the list the plug-in you want information about.

If you choose a Phase One camera back plug-in, you will also see detailed information about the particular camera attached to your computer.

You would use the information contained in the *About Plugins...* windows during troubleshooting.

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Appearance

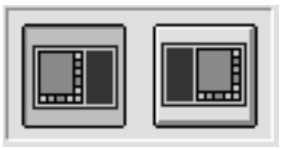
Menu Item: File ➜ Preferences...

Keyboard Short-cut: Macintosh: Y PC: Alt E P

To Edit: Click on *Appearance* in the the Preference Window.

Description and Use

This panel of the Preference Window sets the layout of the *Preview Window* and Toolbar icons the monitor screen. You might want to change the layout if you are using a small monitor.



The **Panel Alignment** thumbnails set the preview image (shown in red) either to the left or the right of the main panels.



The **Toolbar Alignment** thumbnails set the position of the toolbar (shown in red) relative to the preview image.

The settings in the *Appearance* panel are saved each time you *Quit* the Phase One software.

When you start the Phase One software, the *Appearance* of the last session is used.

MAC **only:** The **Toolbar buttons** list contains check-boxes for each of the available toolbar button icons. To view a toolbar icon, activate the check box. The functionality of a toolbar icon can always be reached from a menu item if not shown. For information on the menu items, see the topic for the specific icon.

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Balloon Help

Menu Item: Help ➜ Balloon Help

Keyboard Short-cut: Macintosh: Help

Description and Use

When *Balloon Help* is active, moving the cursor around the screen shows pop-up windows giving help on the underlying item.

If you only want to activate *Balloon Help* temporarily, hold down the **help** key on the keyboard while moving the cursor over an item.

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Capture

Menu Item: Camera ➜ Capture

Keyboard Short-cut: Macintosh: K PC: Alt C C

Icon: 

Description and Use

This function starts a full scan using the scan resolution set in the *Capture Specification* panel.

The resulting image file is saved in the name and location given by the *Capture Specification* and *Capture File* dialogs.

To **start** a *Capture*, click on the capture button.

To **stop** a scan prematurely, click on the  icon.

If you have changed any image-related settings the *Preview* button will flash to indicate that you should take a new preview before making a *Capture*.

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Capture File

Menu Item: File ➜ Preferences...

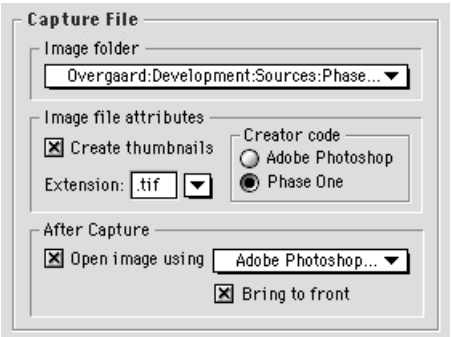
Keyboard Short-cut: Macintosh: Y PC: Alt+P

To Edit: Click on *Capture File* in the the Preference Window.

Description and Use

This panel of the Preference Window sets the name and destination folder of the next captured image, the creator of the file that will be produced and which picture viewer (if any) is opened after the capture is complete.

Windows Software



The **Image Folder** area indicates the currently selected folder. If you wish to change this, click on **Browse...** to open a standard folder selection window.

The **Image File Creator** area allows you to specify which file type is attributed to your images. When **Phase One** is selected, the computer will associate the file with the Phase One Image Viewer. If **Adobe Photoshop** is selected, association is with the Photoshop application. This means that double-clicking on a file when

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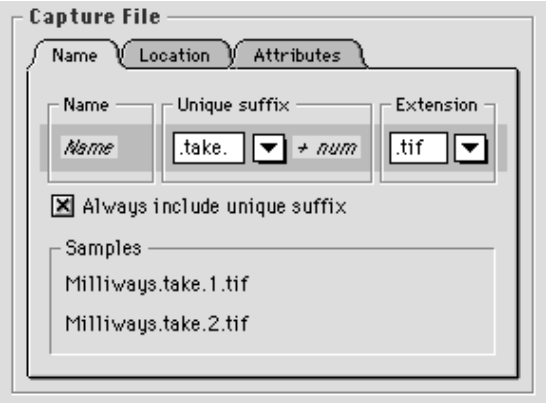
"browsing" automatically launches the associated application.

The **After Capture** area allows you to select which application will be launched when a Capture is complete. If the **Open Image Using** box is marked, the application shown in the pop-up menu is started and the capture file transferred to it. When there is no mark in this box, no application is started. If the **Bring to Front** box is marked the image is displayed as the topmost window.

For the **After Capture** functions to work correctly, your computer's operating system must be "told" what applications are asociated with what file types. Consult your operating system documentation for details.

MAC **Software**

Name Tab



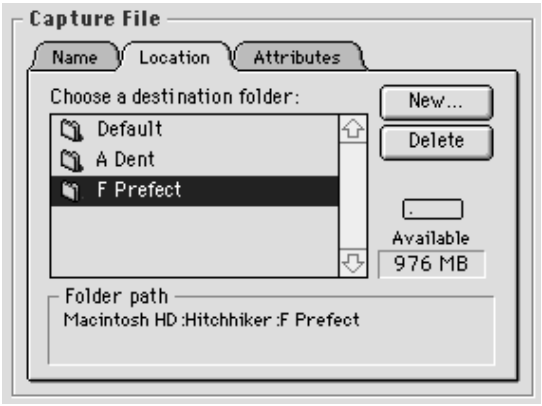
The **Name** field is inherited from the name given in Next Image on the *Capture File* panel.

The **Unique suffix** is an addition to the name that is added by the Phase One software. To make files with identical filenames unique, activate the **Always include unique suffix** box.

The **Extension** drop-down list allows you to specify the extension given to the captured file. The **Samples** at the bottom of the window show your choices applied to real file-names.

Location Tab

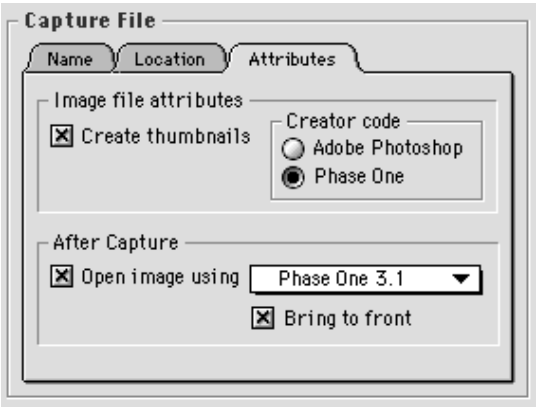
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The **Location** tab indicates the currently selected folder where your images are saved. If the destination folder is "Default", your images will be saved in the Phase One Images folder. If you wish to change this, click on New and select the new destination folder. This could be, for example, network drives or removable media.

The **Available** field shows how much space is left on the chosen volume.

Attributes Tab



The **Creator Code** allows you to specify which file creator is attributed to your images. When **Phase One** is selected, the computer will associate the file with the Phase One Capture Viewer. If **Adobe Photoshop** is selected, association is with the Photoshop application. This means that double-clicking on a file automatically launches the associated 3application.

The **Extension** option allows you to specify the file extension that will be appended to all capture file as they are saved. The extension does not affect the file creator attribute.

When **Create thumbnails** is set, a thumbnail preview is added to the image file which can subsequently be viewed by programs having a thumbnail preview option, for example Phase One Image Capture software and Adobe Photoshop.

The **After Capture** sub-panel allows you to select which application will be

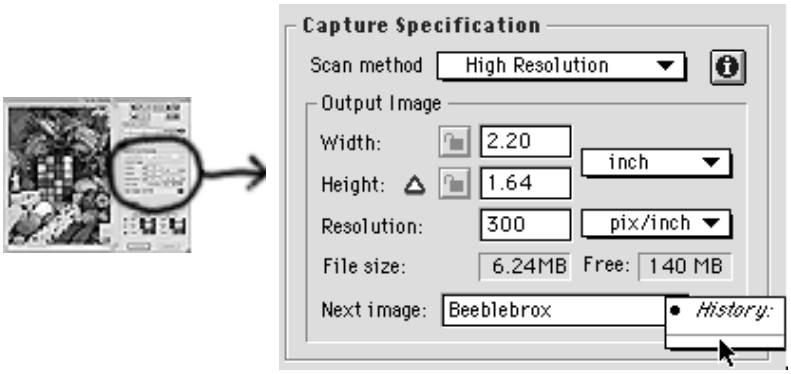
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launched when a Capture is complete. If the **Open Image Using** check box is marked, the application shown in **Creator Codes** is started and the capture file transferred to it. When there is no mark in this box, no application is started.

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Capture Specification



Description and Use

The *Capture Specification* panel allows you to specify the scan resolution, the output resolution and size, the image's filename, and to attach comments to the file.

The **Scan method** pop-up menu enables you to choose the input resolution setting for the final shot.

Always remember that the **Scan Method** is the resolution of the data coming into the Phase One software. The output file resolution may be different, depending upon the settings made in the **Output Image** panel.

There are two types of Scan method, standard and custom.

Standard Resolutions

The standard resolutions are **High Resolution**, **Medium Resolution**, **Low Resolution** and **Lowest Resolution** (these may vary according to the camera back and *Settings*). Each pixel in the output image matches a scanned pixel in the camera back's CCD. In other words, no interpolation is done.

The **High Resolution** setting uses all of the pixels available with your camera

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back. The lower resolution settings skip some pixels (for example, every second pixel and every second line). This makes scanning faster and image files smaller, though the “grain size” is increased.

Custom Resolution

When set to **Custom Resolution** the application may use interpolation to produce the number of pixels required to make your image. To prevent a decrease in quality when interpolating, the maximum output-image size is restricted to 130% of the size of an image scanned using the Highest resolution.

Output Image

The Output Image panel allows you to specify the **Width**, **Height** and **Resolution** of the capture file.

The **units of measurement** are selected by the pop-up menus beside the size fields. Both metric and imperial measurements are supported.

The **Height** and **Width** values directly relate to the *Crop Box* on the preview image. If you have set a *Lock* on either of the values, that dimension does not change. You might sometimes see a **warning triangle**

The **Resolution** value shows how many pixels there will be in the final image per unit length. In normal operation you might set and *Lock* this to 300 pix/inch, corresponding to 300 dpi*. Then however you set the height and width, your output file will always have a 300dpi resolution.

When using a standard input resolution (highest, medium, etc.) with a specified *Crop Box*, a fixed number of pixels are scanned in to form the final image. If you change the output resolution, the *Crop Box* is scaled accordingly. For example, changing the output resolution from 300dpi to 600 dpi causes the *Crop Box* dimensions to be reduced by a half.

*A 300dpi setting corresponds to printing in catalog quality (150 lines per inch / 60 lines per cm)

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When using a Custom input resolution, a variable number of pixels are scanned in (allowable because of interpolation), thus the *Crop Box* size and output resolution are not tied together in the same way.

Note: The Phase One Image Capture Software checks the values that you enter for size and resolution to see if they lie within the camera's range. If out of range, the software adjusts the dimensions and resolution to the nearest best fit.

For more information on the  icons, see the *Lock* topic.

File Information

The **File size** information box at the bottom of the window shows approximately how much disk space the image file will use with your chosen settings. The larger the image and the greater the resolution, the larger the file size.

The **Free** information box tells you how much space is left on the media you use to store your captures, typically the local hard disk.

The **Next Image** field shows what file name your next captured image will have.It will be placed in the folder indicated by the *Capture File* window.

Beside the **Next Image** field is a disclosure triangle giving you access to a **History** of recent captured files. When you choose one of the files on the list, it is opened using the application specified in the *Capture File* dialog. Each time you select a file, a new instance of the application is opened. This allows you to compare two or more takes side-by-side.

For information on the  icon, see the *Image File Info* topic.

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Capture Viewer

Menu Item: File ➜ Open...

Keyboard Short-cut: Macintosh: O PC: Ctrl+O

Description and Use

The *Capture Viewer* enables you to examine files made by the Phase One application from inside your Phase One application program. It has zoom and scroll features which allow you to get a very close look at your final takes right away without starting up another application.

To *Zoom in*, click on the image when the cursor is a  (default).

To *Zoom out*, change the cursor to a  by holding down the **Alt** key and click on the image.

To **scroll** around the image, change the cursor to a  by holding down the **Ctrl** key, or use the scroll bars.

It is also possible to have all final images opened automatically in the *Capture Viewer* after they are scanned. To do this, select **Phase One** in the "Open Image Using" panel (see *Capture File* topic).

To view more than one image at once, use the *Open...* command for each image. To display them side-by-side, move and resize the *Capture Viewer* windows to suit.

The *Close* command closes the active *Capture Viewer* window.

Note for Macintosh users only: The bottom entries on the **Windows** menu show you how many Phase One windows are open. To switch between the windows, click on the required one or use the keyboard short-cut. There are also pop-up menus for information, zooming and navigating at the bottom of the window.

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Close

Menu Item: File ➜ Close

Keyboard Short-cut: Macintosh: W PC: Alt F C or Alt+F4

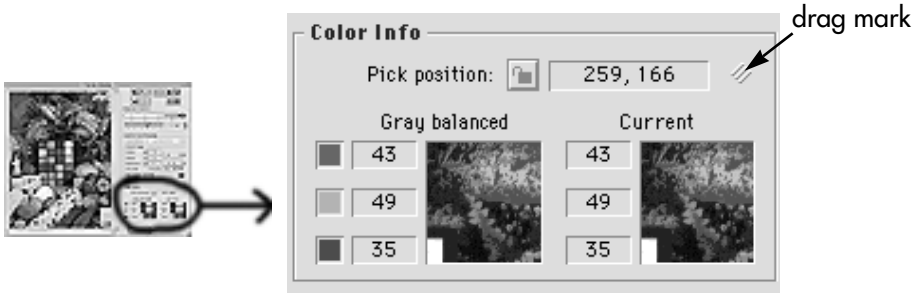
Description and Use

This command closes the active *Capture Viewer* window.

When there is no active *Capture Viewer* window, the *Close* command is not available.

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Color Info



Description and Use

The **Pick Position** shows the X and Y pixel-coordinates of tip of the *Color Picker*. The coordinates are measured from the upper left hand corner of the **preview** image. Use the *Lock* function to fix the pick position (and hence the cursor view windows)

The two cursor viewers show the area around the tip of the *Color Picker*. If the "Draw color picker frame" option is set on the *Color Picker* panel, a frame appears in the cursor views showing the color picker size. The **gray balanced** view shows preview image data after *Gray Balance* calibration. The **current** display shows preview image data after gamma correction, tonal range, or gradation changes. You can use the *Zoom* functions in these windows, but note that color picker frames are not visible if the zoom is less than 1:1.

Also shown in the *Color Info* window are the numerical values of the color channels. The color channels are by defualt shown in RGB form.

MAC Only: If you have activated *Color Management* and you have chosen a CMYK output device (for example a CMYK printer), a CMYK colored button- appears above the channels. By activating this, you will see the channels displayed in CMYK form.

You can move the *Color Info* window to another location on your monitor screen by dragging the **Drag Mark**.

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Color Management

Icon:

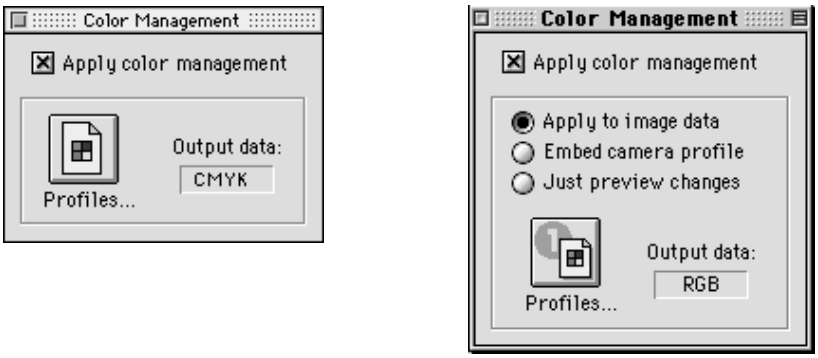
To Activate: Click on the icon

To Edit Values: Double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

See Also: *Profiles*

Description and Use

The Color Management function allows you to set up the Phase One application to apply color management.



Color management is only used in the system when the **Apply color management** box is checked.

The Output data box shows you what format your output data is in – RGB or CMYK. You can see the RGB or CMYK values in the *Color Info* panel.

When clicking on the **Profiles...** icon you open the *Profiles* panel in the Preferences window. See the *Profiles* topic for more information.

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MAC Only: Depending on which radio button is active, color management will be **applied to the image** data file, **embedded as a camera profile** in the image file, leaving the image data untouched, or shown **just as a preview**, again leaving the image data untouched.

The difference between the options is basically where color management information is carried with the data file. Once color management is applied to the image, it is difficult to remove. However, this option is best used when you use the same camera/monitor/printer setup for each of your jobs - the color management information will always follow the image around.

By choosing to embed the camera profile, the raw data has no color management applied to it, but you can be sure that the color management inforamation will always follow the image around. You can then apply color management at a later stage using the given profile information.

By choosing only to preview the file with color management applied, the image data is saved “as is” without profile information, but the monitor picture uses the chosen profile so you can see the probable printed result. You could use this option if you were sending your pictures to a third party who was going to implement color management for you.

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Conversion of Images to CMYK Files

The conversion to CMYK files can either be done on the fly when the image is captured or later in Photoshop using the same ColorSync profiles and color separation engine.

Procedure 1 - CMYK separation with Phase One Software

1. Capture a preview and make the usual adjustments of Tonal Range, Gradation Curve etc.
2. Click the ColorSync button and check Apply Color Management.
3. Click the Profiles button.
4. Select “Camera to Printer” and the appropriate profiles i.e. Camera: “PhotoPhase with TG1, tungsten”: , Monitor: “Trinitron 1.8”, Printer:“Offset print - Euro Catalog
5. Capture the image.

The captured image will be converted from RGB to CMYK on the fly and are ready for printing.

This procedure gives a very productive workflow.

Procedure 2 - CMYK separation via Photoshop

The procedure for doing the ColorSync separation via Photoshop.

First you must install the ColorSync filters in Photoshop. Find them on the Phase One Software 3.0.1 CD-ROM and copy them to the Photoshop Plug-ins folder.

1. Capture a preview and make the usual adjustments of Tonal Range, Gradation Curve etc.
2. Click the ColorSync button and check Apply ColorManagement.
3. Click the Profiles button.

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4. Select “Camera to Printer” and the appropriate profiles i.e. Camera: “PowerPhase, TG1, Tungsten”: , Monitor: “Trinitron 1.8”, Printer:“Offset Euro Scale”.
5. Capture the image.
6. Open the file in Photoshop.
7. When the files is ready for the final conversion select “TIFF ColorSync Conversion” in the Export submenu in the File menu.
8. Select an output profile. Common offset printing profiles comes with the Phase One software.
9. As Quality select “Best”
10. Click the Export Tiff button and give the file a name. The file will now be stored as a separate CMYK file - ready for printing

This procedure gives full control and the possibility to store the RGB file for later use.

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Color Mode

Menu Item: Image ➜ Color Mode

Description and Use

This command on the Image menu opens the **Color Mode** sub-menu. This allows you to set the system to use full color (RGB) or only gray tones (grayscale).

Grayscale image files take only one third the hard disk space of a color file with the same dimensions and print quality.

When you change color modes, *Tonal Range* and other color attribute settings will be reset to the default for that particular color model. If you know you are going to change color mode, be sure to do this before changing the *Tonal Range*.

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Color Picker

Icon: 

To Activate: Click on the icon

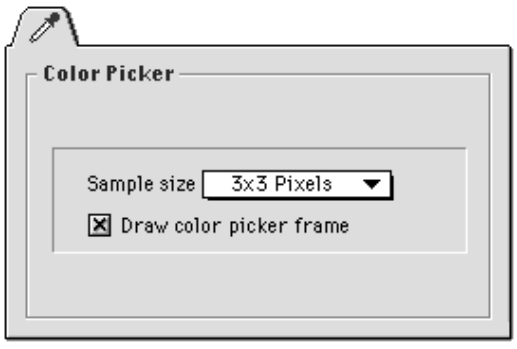
To Edit Values: Double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

Description and Use

The *Color Picker* allows you to select pixels from your preview image for use as a reference in *Gray Balance*, *Tonal Range* and *Gradation* operations. When the color picker is active, the mouse cursor is a when it is placed over your preview image. You can *Lock* the position of the *Color Picker*.

To edit *Color Picker* options, double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

The **Sample Size** value determines how many pixels a color picker tool will 'see' at any one time. **Point Sample** means one pixel. **3x3 Pixels** and **5x5 Pixels** mean that the average value of either 9 or 25 pixels respectively is calculated and used by the tool. The tip of the eyedropper is always at the centre of the 3x3 or 5x5 group of pixels. The **Draw color picker frame** option allows you to see the sampled area in the *Color Info* panel.



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Color Warning

Icon:	
To Activate:	Click on the icon
To De-activate:	Click on the icon
To Edit Values:	Double-click on the icon or select the icon tab in the *Cursor Tools and View Modes* floating window (if displayed).

Description and Use

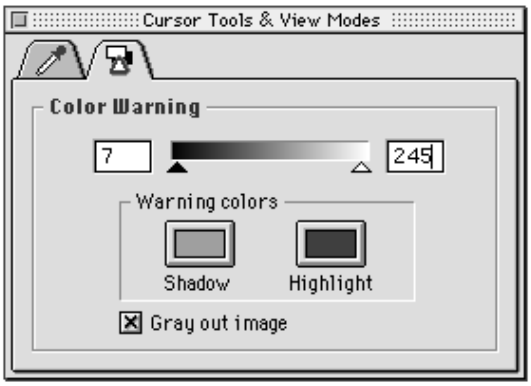
The *Color Warning* dialog gives you a visual warning on your preview picture of pixels that are **saturated**.

Saturated pixels have values outside the color range of the current set-up, normally 0 or 255. These values may be different if color management is applied and the management software sets, for example, a range of 7 to 249. To see which pixels in your preview (and hence the final image) that are saturated, click on the *Color Warning* icon. Affected pixels will then have their color set to the colors shown in the in the *Color Warning* window (see below).

Looking for saturated pixels is a useful guide to see the areas of your image that might be loosing detail in the highlight and shadow areas. You avoid saturation by adjusting the lighting conditions, the exposure, the tonal range and the gradation.

To edit the **Warning colors**, double-click on the *Color Warning* icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed) to bring up the Color Warning dialog.

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The warning colours are changed by clicking on the coloured patches associated with **Shadow** and **Highlight**, and then choosing the new colour.

By checking the **Gray out image** box, all the pixels that do not have a warning associated with them are made monochrome. This is to make it easier to see the warning pixels.

MAC **Only**

The range slider shows the current allowable range of pixels in the image. By default this is 0 and 255. However, if color management is applied, you may need to adjust the shadow and highlight values to suit the allowable range.

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Copy

Menu Item: Edit ➜ Copy

Keyboard Short-cut: Macintosh: C PC: CTRL+C

Description and Use

The *Copy* command is available only when you have selected a text field to work in.

Use *Copy* in combination with *Paste* to transfer text data from one field to another within the Phase One software, or to put text information onto the clipboard for inclusion into other programs.

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Crop Box

Icon: 

To Activate: Click on the icon

To Display Values: Double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

Description and Use

The cropping tool enables you to select a reduced area of the image to use in your final work. When you have selected a cropping area, only that area will be scanned during image capture. This offers the advantages of a quicker scan time, a smaller image file, and optimized image composition. You should note that the *Exposure Control* and *Tonal Range* histogram are restricted to the area within the *Crop Box*.

Note: A *Crop Box* always exists in a *Preview* image, but the default size is the whole image so its boundaries cannot be seen.

Defining a Crop Box

Select the *Crop Box* function. Use the mouse to point to one of the corners of the area you wish to crop. Press and hold the mouse button as you drag the mouse away from the original point; a black and white dashed rectangle will outline an area that will resize as you drag. Release the mouse button to define the area.

The size of the cropped area is displayed in the *Capture Specification* panel.

Resizing a Crop Box

To resize the crop area, move the mouse cursor to any corner or edge of the crop area. When at a corner or edge, the mouse cursor changes to a double arrow.

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Click and hold the mouse button. Drag the mouse to resize the area. Release the mouse button when you are finished.

Moving a Crop Box

Move the mouse cursor inside the crop area. The mouse cursor changes to a cross with four arrrowheads. Click and hold the mouse button and drag the entire area anywhere on the image. Release the mouse button when the *Crop Box* is placed where you want it.

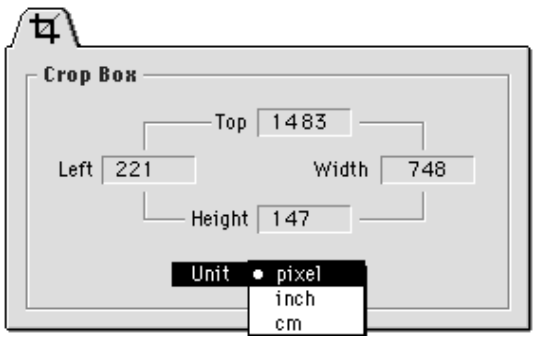
Deleting a Crop Box

You can delete a crop area by placing the cropping tool cursor on the image but outside of the crop area and clicking once with the mouse button. This effectively re-defines the *Crop Box* to be full size.

Fine Tuning

The Height, Width and Resolution data fields in the *Capture Specification* panel directly reflect the size of the crop in the given units. When you change these values, the size of the *Crop Box* is changed accordingly.

To see the *Crop Box* origin (top left corner), double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed). The placement of the *Crop Box* is shown in this window together with its height and width (which also give the image size in pixels).



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Cursor Tools & View Modes

Icons:

Cursor Tools



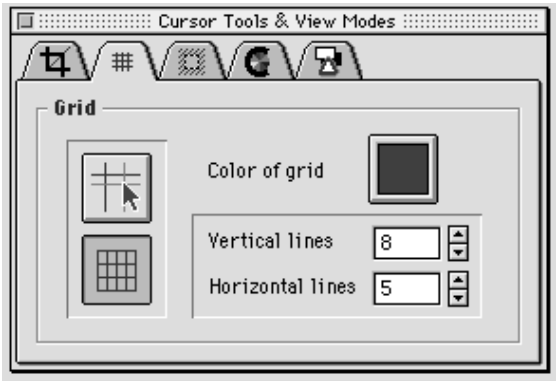
View Modes



To Display Double-click on any of the above icons

Description and Use

The *Cursor Tools and View Modes* floating window contains a panel for each of the active functions whose icon is shown above. The window allows you quick access to the active functions and to edit their parameters.



An example of the Cursor Tools and View Modes window

Only one **cursor tool** can be active at once since they define the function of the cursor.

One or more **view modes** can be active at once. View modes act as "filters" on the Preview image, and are provided for your guidance. They do not change the image data in any way.

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Cut

Menu Item: Edit ➜ Cut

Keyboard Short-cut: Macintosh: X PC: CTRL+X

Description and Use

The *Cut* command is available only when you have selected a text field to work in.

Use *Cut* to remove selected text from a data field and copy it to the clipboard.

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Curves

Menu Item:	Image ➜ Curve
Keyboard Short-cut:	Macintosh: M PC: Alt+M
Icon:	
To Display	Click on the icon
To Hide:	Click on the icon

The **Curves** window, which controls the way the camera back reacts to light of various brightnesses.

Gradation Curve Tab

The gradation window contains a curve showing how the gradation function maps the brightness of the pixels coming from the camera back (shown on the horizontal axis) to the brightness of the pixels stored in the PC (shown on the vertical axis). The *Gray Balance* and *Gamma* functions apply their own mappings independent of the gradation function, wheras the *Tonal Range* function is closely linked to *Gradation*.

A neutral gradation setting is represented as a straight diagonal line from the bottom left to the upper right of the gradation graph. With this setting, all pixel levels are evenly distributed within the tonal range. By making changes to the gradation graph, you can hide or bring out details in selected brightness areas of your final image - a similar process to gamma correction.

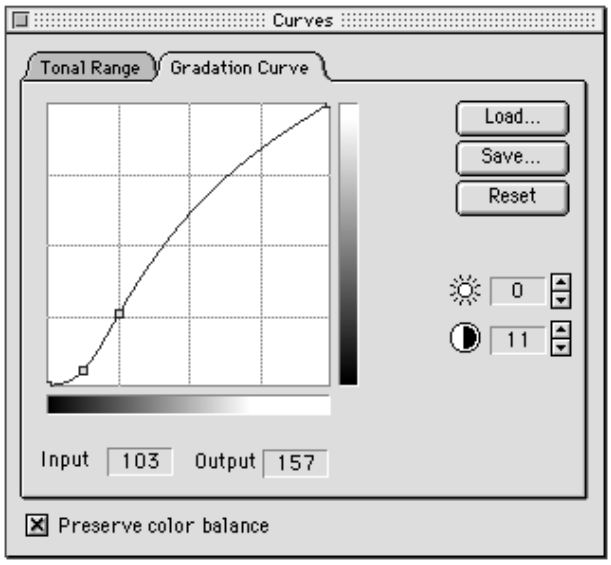
If the **Preserve Color Balance** box is unchecked, you can adjust the individual channels as well as all three at once (general).

For more information about gradation and what it does to you image, read the

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Understanding Gradation and Tonal Range section at the end of this topic.

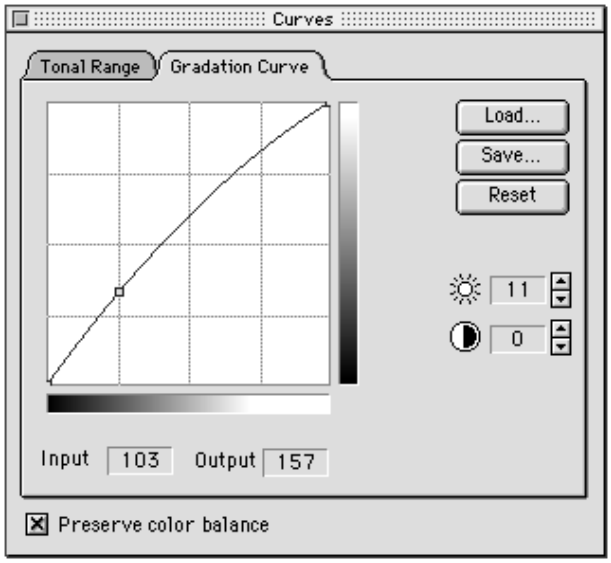
The contrast control applies changes to the gradation curve that will increase or decrease the contrast in your image. The Contrast control effectively changes the slope of the curve between input values in the shadow range. When you use the Contrast control, two “handles” (markers) appear on the curve. As you adjust the contrast, the left handle moves with respect to the right one.



The curve dialog above shows a gradation curve with contrast changed.

The brightness setting make changes that will increase or decrease the overall brightness of your image. When you use the brightness control, one handle is added to the curve. The Brightness control effectively changes the y-value (output value) of the curve in the shadow region.

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The curve dialog above shows a gradation curve with brightness changed.

Making Customized Gradation Curves

You can make changes directly to a gradation curve by using the mouse to place your own handles and reshape the curve.

Select a point on the curve by clicking on it with the mouse. This will place a “handle” at that point.

Handles are points on the curve that you can move with the mouse. They also work as anchor points. The curve is automatically kept smooth, so dragging a single handle will alter all points along the curve — except those points anchored with other handles.

To modify the curve, move the mouse cursor over a handle. The cursor changes to a cross with four arrowheads. Left-click on the handle and hold down the mouse button while you drag the handle to wherever you would like it to be.

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Release the mouse button to drop the handle.

To remove a handle from the curve, just drag it away from the Gradation Window. To remove all the handles from a curve, press the **Reset** button. This also applies to the handles placed automatically by the Contrast and Brightness functions.

Saving and Loading Gradation Curves

When you change the tonal range using the Gradation Curve window, the settings are automatically used in the current session for all future captures until you either change the curve or quit the program.

Should you wish to save the current gradation values for future use, then use the **Save** button on the **Gradation Curve** window. The **Description...** button on the Save dialog allows you to add a text description to the file for easier identification in the future.

To **Load** a saved gradation curve into the current Phase One session, click on the **Load** button.

Gradation files are stored by default in the Gradation Settings folder in the Phase One hierarchy.

Tonal Range Tab

This tab shows the *Tonal Range* panel which enables you to optimize the tonal range in your images.

The tonal range of a digital picture is defined as:

(value of the lightest pixel) - (value of darkest pixel) +1

With Phase One cameras the maximum tonal range is 4096.

With an 8-bit TIFF picture, the maximum tonal range is 256.

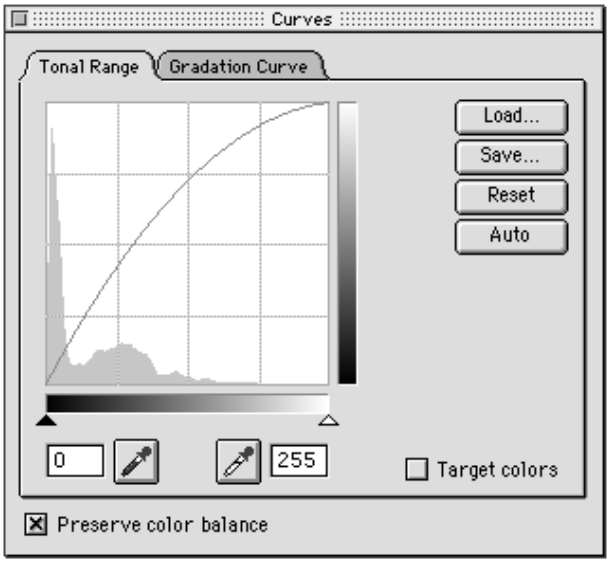
For example, if your preview scan reveals, via the *Color Info* window, that the

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brightest point in the image has a value of 159, and your darkest point a value of 10, your tonal range would be only 150 and your image would appear dark and unclear. By setting new highlight and shadow values, you can increase the tonal range to the full 256 levels, thereby maximizing your image's brightness range and definition in the highlight and shadow areas.

The Tonal Range window has a graphical area which shows a **histogram** of the image data and an overlay of the current *Gradation Curve*.

There are three different methods for setting the highlight and shadow values: automatic, graphical adjustment, and pixel selection. These methods can be used separately or combined.



The Automatic Tonal Range Function

The easiest way to set the highlight and shadow values is to use **Auto** button. The auto function works by analyzing the pixel values inside the *Crop Box* to find highlight and shadow settings that give an optimised tonal range. When using the **Auto** function, previous highlight and shadow values are overridden.

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If the **Preserve Color Balance** box is checked, then the color cast will also be adjusted automatically. When unchecked, you can adjust the individual channels yourself.

Highlight and Shadow Color Pickers

The color pickers enable you to read pixel values and choose your highlight and shadow values directly from your image. The Highlight color picker is the white eyedropper in the *Tonal Range* window. See the *Color Picker* topic for a full description of how color pickers display pixel values. You can use the *Lock* command with these color pickers. This is useful if you want to use the *Color Info* panel to examine the effect of Tonal Range while using a pixel that is not visible in the *Color Info* window as a reference.

Highlight and Shadow Sliders

The large panel in the *Tonal Range* window shows the current highlight and shadow settings both numerically and graphically. You can use the highlight and shadow sliders to change these settings directly using the mouse.

These controls offer a good way to fine tune the settings made with the Auto function or with the color pickers.

Histogram

The histogram shows the distribution of pixel brightnesses within the *Crop Box*. Each "spike" in the histogram represents a brightness value between 0 and 255. The height of the spike is an indication of how many pixels within the *Crop Box* have the corresponding brightness value.

Curve and Grid

The **Grid** shown on the Tonal Range window represents the input/output range derived from the current gradation and tonal settings. The **curve** shows the current combined tonal range and gradation mapping.

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Channel Setting

When in *Color Mode* and with **Preserve color balance** unchecked the **Channel** field has four options: Red, Green, Blue, and RGB. The default display is RGB. There is only one channel in gray mode.

The RGB option shows the full range of pixel values of all colors. Changes to the RGB highlight and shadow values will be applied to all other colors proportionally so that there will be no change in the color cast.

The three individual color displays (Red, Green, and Blue) each show the highlight and shadow settings for that particular color channel.

Removing a Color Cast

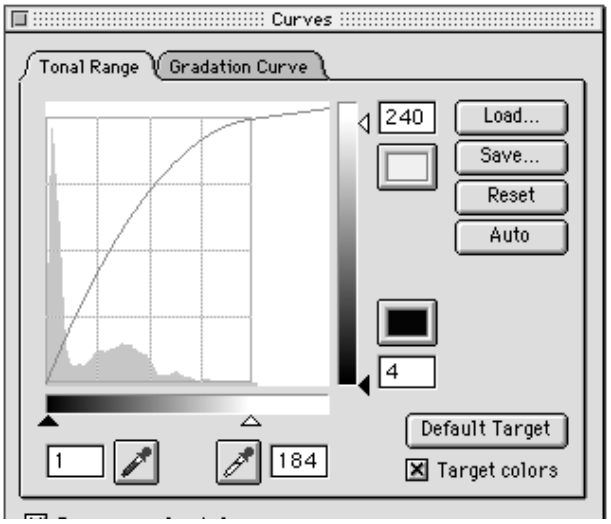
The best way to prevent color casts is to make a new *Gray Balance* calibration each time you start up your system or change your lights.

If you still see a color cast, you can use the tonal range window to adjust the highlight and shadow points of each color channel independently.

Target Colors

At the bottom of the *Tonal Range* window is a **Target Colors** check box. When you activate this the *target colors* range slider and color selector boxes appear..

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The default values for the shadow and highlight target colors are 0 and 255 respectively. This means that the pixel value that you choose as your shadow reference point is mapped onto a value of 0. If there are any pixels in your image with an original value lower than the shadow reference point, they will also be mapped onto 0, and consequently removing shadow detail.

If you now, for example, choose a target shadow value of 4 (by typing this in the numeric box), your shadow reference point is mapped to a pixel value of 4. Those pixels in the original image that are within a value of -4 from the shadow reference are now distinguishable in the image - whereas before they were “saturated”. The highlight target color works in the same way. When Preserve color balance is not checked, you can also set the target values by clicking on the target H/S color buttonss.

You should use Target Colors with care. It is usually best to keep the shadow and highlight target colors between 0–40 and 220–255 respectively. 10 and 240 are good starting points. You should also try to pick gray tones as your reference points to avoid color casts being introduced.

Adjusting the target colour is useful if, for example, the printing process does not allow 100% white (equivalent to 255).

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The gradation curve shown on the Tonal Range graph indicates how the target color settings affect the mapping. You will see extensions to the gradation curve outside the grid, indicating how “negative” and “overrrange” pixels will be mapped.

Saving and Loading Tonal Ranges

When you change the tonal range, the settings are automatically used in the current session for all future captures until you either change the range or exit the program.

Should you wish to save the current tonal range values for future use, then use the **Save** button on the Tonal Range window. The save option opens up a file selection dialog which prompts you to give the tonal range settings file a name. You can also add a text description to the file by clicking on the **Description...** button. The text you type in here is displayed in the Load dialog. The description feature allows you to give a meaningful account of how a saved tonal range setting affects the picture file.

When you have decided on the name and description, click on the OK button. The default folder for storing tonal ranges is the Tonal Range Settings folder in the Phase One hierarchy.

To **Load** a saved tonal range settings file into the current Phase One session, click on the Load button in the Tonal Range window. A file-finder dialog appears, allowing you to select a previously saved file.

Understanding Gradation

In the Phase One digital camera system there are three channels - red, green and blue - which are used to derive the hue, color and saturation of each pixel in an image. For a given pixel, each channel has a value (a number) which refers to the amount of red, green and blue light/pigment at that pixel position. The relative ratio between the numbers and their absolute value are used to compute the hue, color and saturation.

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In the camera back the numbers for each channel range in value from 0 to 4095 (giving 4096 possibilities).

Some examples of RGB pixel values in the **camera back** (not the computer) are:

Saturated red = 4095, 0, 0

Black = 0, 0, 0

White = 4095, 4095, 4095

Mid gray = 2048, 2048, 2048

To express a number scale most economically in a computer, the binary system is used. This means that to express 4096 different values, 12 digits holders are required, each capable of being either a 1 or a 0. Each digit holder in a binary system is called a bit. In the decennary system, 4096 requires four digit holders (thousands, hundreds, tens and units), each having a value from 0 to 9.

Therefore, we can say that the pixels in the camera back are described by 12-bits per color, or 36 bits in all.

In the computer, a traditionl image file contains the possibility of holding only 8-bits per color, thus requiring 24 bits to describe the RGB value at a pixel location. The TIFF 24-bit color specification is based on this 8-bit per color system. 16-bits per color require a 48-bit color specification. Phase One software can produce files with 16-bits per color files. However, you should note that since the source data from the camera is 12-bits, the 16-bits saved in a file are dynamically expanded from 12.

8-bit data has a maximum value of 255. We have seen that 12-bit data has a maximum value of 4095. There therefore needs to be a conversion process between 12-bit data in the camera and 8-bit data in the computer.

If the conversion were linear, then using the pixel examples from before:

Saturated red, 12-bits = 4095, 0, 0
Saturated red, 8-bits = 255, 0, 0

Black, 12-bits = 0, 0, 0
Black, 8-bits = 0, 0, 0

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White, 12-bits = 4095, 4095, 4095
White, 8-bits = 255, 255, 255

Mid gray, 12-bits = 2048, 2048, 2048
Mid-gray, 8-bits = 128, 128, 128

You can see that each 8-bit value is close to or equal to $^1/_{16}$ of the 12-bit value. Close to or equal indicates that there can be interpolation problems with converting from one system to another, since 4095/16 = 255.9375 and the maximum permitted value is 255.

This means that the conversion process needs a look-up table to decide on the final value. In the case of linear conversion, camera values between 4080 and 4095 map onto TIFF values of 255. Those between 4064 and 4079 map onto 254, and so on until values between 0 and 15 map onto 0 and between 16 and 31 map onto 1. Numbers in the Phase One system are always rounded down to the nearest integer value.

However, the exact 12 to 8 bit conversion ranges are up to you, and that is what using the gradation tool is all about.

For example, instead of having a linear range where values from 16 to 32 map onto 1, you can choose values of 12 to 45 to map onto 1. This obviously changes the available ranges for mappings between 32 and 4095.

You need not worry about the re-calculation. The computer does this for you automatically. All you need to do is visually change the mapping curve using the gradation tool of the PC software.

Why read 12-bit data?

Most image applications use 24-bit TIFF files (8-bits-per-color-per-pixel multiplied by 3 colors), so you will rarely see a 12-bit image as it is read by your camera back. But this does not mean that this extra information is useless.

When you change a gradation curve (or indeed the tonal range settings), you have the full 4096 levels to choose from when you decide which 12-bit values map to which 8-bit values. This means that fine changes in shade, detectable only with 12

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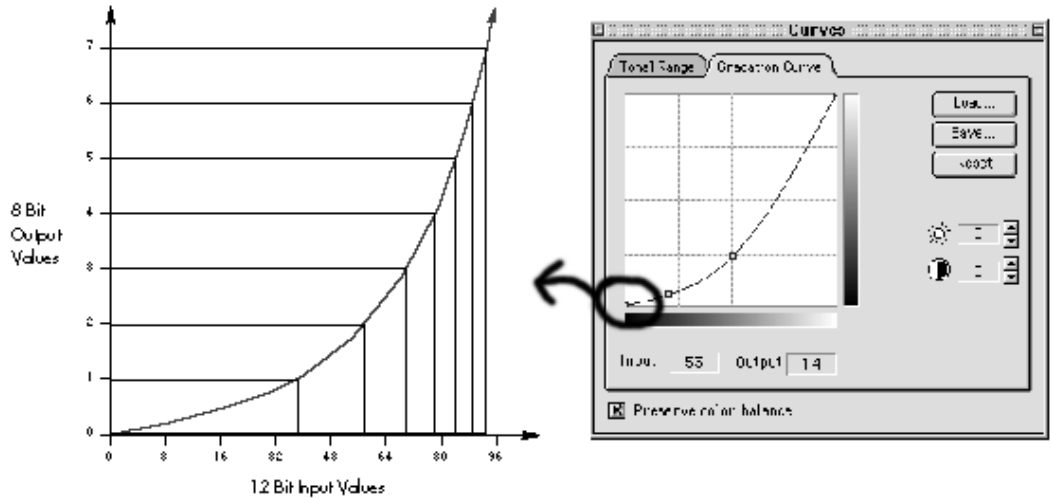
bit data, can be brought out with greater contrast in the final 8-bit image.

How does gradation work?

The software uses the gradation curve to decide how to translate the incoming 12-bit data into the 8-bit output.

For each channel (RGB), the software uses a look-up table to find what the new channel value should be when expressed as 8-bits. This look up table is represented graphically with the gradation curve. (Note: In fact, the look-up table also takes into account the tonal range highlight and shadow settings, the calibration information and any gamma correction.)

To get an idea of how this process works, imagine you are the software and you have just read a pixel with a Red channel 12-bit brightness value of 48. Look at the diagram overleaf of an enlarged section of a gradation curve.



Find 48 on the horizontal input axis, look straight up to the curve, and then read the output 8-bit value from the vertical output axis. In this case, the output value lies between 1 and 2, but since the Phase One software rounds down, the resulting output value is 1. In this example, all 12-bit values from 40 to 57 will be

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mapped to an 8-bit value of 1.

The computer now reads the next input pixel in the line, and continues this procedure for each color of each pixel in the image.

Slope of Gradation Curve

Notice also in the figure that the first 50 input levels, where the gradation curve is flattest, are converted to only 2 different 8-bit levels in the output. However, the next 50 input levels (where the curve is steepest) are represented with 5 different 8-bit levels in the output, therefore retaining much more detail in that range.

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Embed Copyright

Icon:

To Activate: Click on the icon

To De-activate: Click on the icon

To Edit Values: Click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

Description and Use

The *Embed Copyright* plug-in allows you to include a copyright string in your image. The string produced is either located in a banner at the top or bottom of the image, or within the header or footer region. The *Embed Copyright* feature is useful for ensuring that the image is traceable in the future or for putting captions directly on the image. If you have not installed this plug-in, refer to the Software Installation manual to find the correct procedure.



To edit the *Embed Copyright* string, click on the icon in the toolbar or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

The background color of the banner (if the banner region is selected) is changed by clicking on the coloured patch called **background** and then choosing the new color.

The color, size and font of the text are changed similarly.

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Exit

Note:	*Exit* is PC specific. Macintosh users should see the topic on *Quit*.
Menu Item:	File ➜ Exit
Keyboard Short-cut:	Alt+F4

Description and Use

Selecting this entry exits the Phase One application and closes all windows associated with the Phase One software.

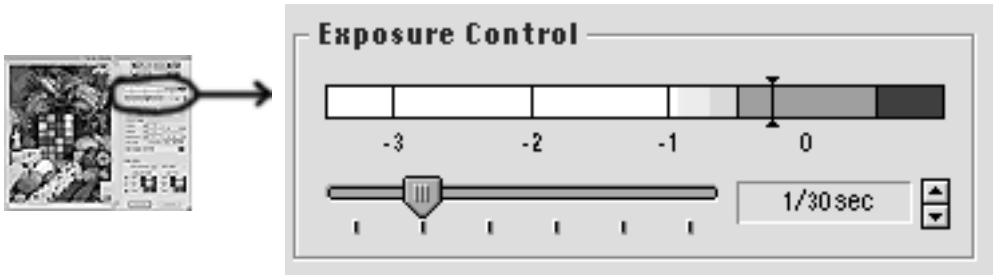
The non-image settings of the application at the time of exit are saved in the preferences file. Any preview data will be lost as this is kept in a temporary file applicable to the current session only.

Image data is automatically saved when you make a capture, so you never need worry that a take has not been recorded.

Tonal Range and *Gradation* settings are only saved when you specifically do so using the Save... option on their respective windows.

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Exposure Control



Description and Use

Exposure Meter

When a preview scan is displayed on your screen, the meter bar in the *Exposure Control* panel shows the result of measuring the value of brightest image point within the crop box relative to the dynamic range.

Note: The meter bar reading can be misleading if you have only a small area of bright pixels in your image. Always look at the image when setting the exposure.

If no crop is selected, the whole image is used. The brightest point is indicated with a dark vertical line. This line will lie in one of the following colored areas:

- Red area above zero: This area indicates overexposure.
- Green area at zero: This area indicates a correct exposure.
- Light green below zero: This area indicates an acceptable but slightly underexposed shot.
- White area below zero: This area is numbered from -1 to -3.

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The numbers represent the number of f-stops your image is underexposed. To correct the exposure, decrease the exposure time or open your aperture the number of f-stops indicated.

If your preview is overexposed and the marker appears in the red area, the application is not able to tell how overexposed your shot is, only that there are pixel values higher than the camera back is able to read.

If you are not using a lightmeter, you should always try to underexpose your first preview, and then adjust the exposure time until the exposure control indicator is in the green.

Exposure Time

Adjusting the **exposure time** is similar to selecting the shutter speed when you use film. Increasing the exposure time is like decreasing the shutter speed; it will increase the amount of time the CCD is exposed, and therefore lighten the exposure.

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Gamma

Menu Item: File ➜ Preferences...

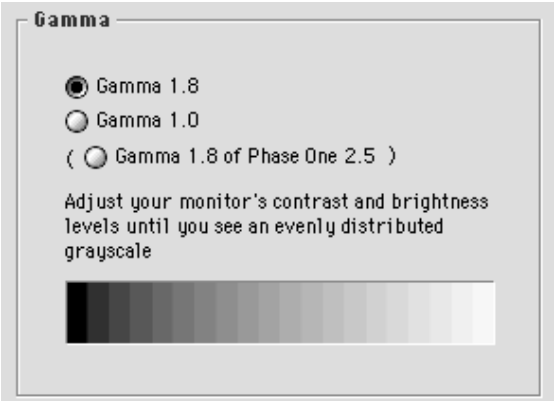
Keyboard Short-cut: Macintosh: Y PC: CTRL+P

Description and Use

The grayscale graphic on this tab helps you set the computer monitor's brightness and contrast controls.

The gamma correction setting allows you to set the gamma correction of scanned image so that the image appears to have the correct tonal range and contrast when viewed by your monitor or printing system.

Note: The Phase One application applies a gamma correction to the image data as it is scanned. This means that the gamma setting you choose will always be part of the image's data. You must therefore select the gamma correction to match your color separation software's expectation.



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Gradation Curve

Menu Item:	Image ➜ Gradation Curve
Keyboard Short-cut:	PC: Alt+M
Icon:	
To Display	Click on the icon
To Hide:	Click on the icon

Description and Use

This entry opens the **Gradation** window, which controls the way the camera back reacts to light of various brightnesses.

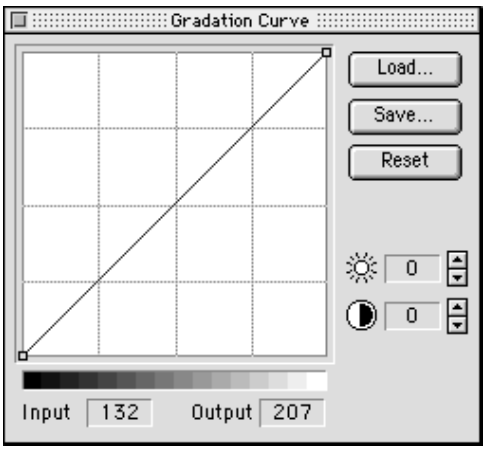
Gradation refers to the transformation of pixel levels within the *Tonal Range* defined with the highlight and shadow settings.

The gradation window contains a curve showing how the brightness of the pixels coming from the camera back (shown on the horizontal axis) are mapped to the brightness of the pixels stored in the PC (shown on the vertical axis).

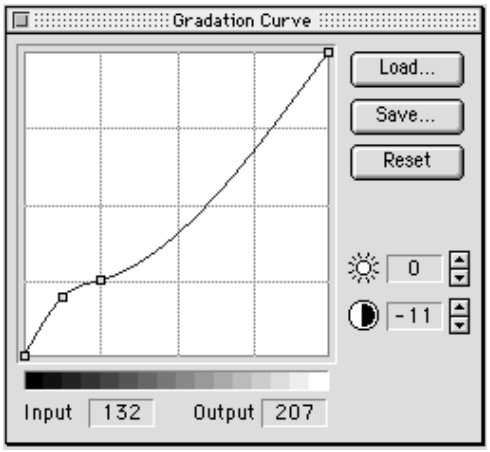
A neutral gradation setting is represented as a straight diagonal line from the bottom left to the upper right of the gradation graph. With this setting, all pixel levels are evenly distributed within the tonal range. By making changes to the gradation graph, you can hide or bring out details in selected brightness areas of your final image.

For more information about gradation and what it does to you image, read the Understanding Gradation section at the end of this topic.

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The contrast control ◑ applies changes to the gradation curve that will increase or decrease the contrast in your image. The Contrast control effectively changes the slope of the curve between input values 32 and 64. When you use the Contrast control, two “handles” (markers) appear on the curve at the 32 and 64 input value positions. The handle associated with 32 moves with respect to that at 64.



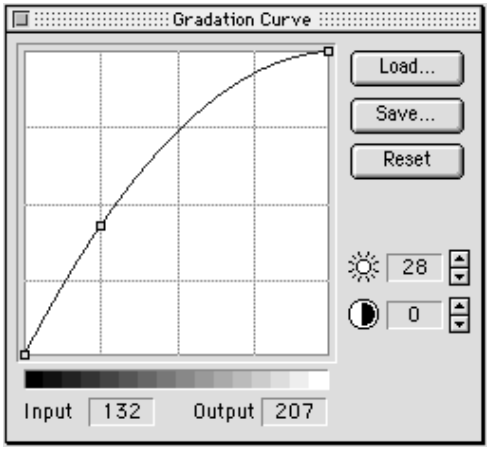
The brightness setting ☼ make changes that will increase or decrease the overall

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brightness of your image. When you use the brightness control, one handle is added to the curve.

The Brightness control effectively changes the y-value (output value) of the curve at input values 32 and 64. When you use the Brightness control, two “handles” (points) appear on the curve at the 32 and 64 input value positions. Both handles move up and down by the same amount when the brightness control is adjusted.



Changing Brightness and Contrast

Click on the Up or Down arrow under the appropriate heading in the *Gradation* window to increase or decrease the image brightness or contrast. Click several times to apply further adjustment.

The numerical field next to the Up and Down buttons shows the relative change you have applied. The graph shows the new gradation curve that results from your changes. The preview image

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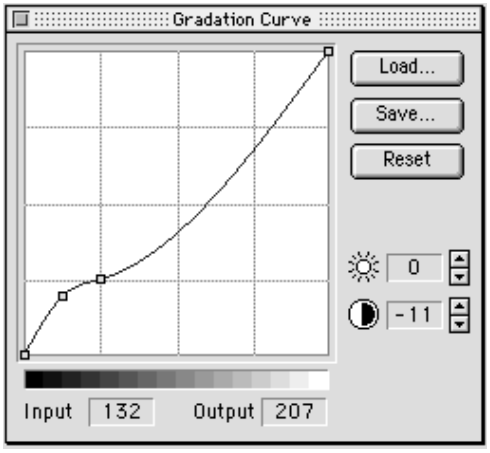
Making Customized Gradation Curves

You can make changes directly to the gradation curve by using the mouse to place handles and reshape the curve. You can combine contrast, brightness, and custom changes in any order.

1. Apply handles to the curve.

Select a point on the curve by clicking on it with the mouse. This will place a "handle" at that point.

Handles are points on the curve that you can move with the mouse. They also work as anchor points. The curve is automatically kept smooth, so dragging a single handle will alter all points along the curve — except those points anchored with other handles.



When you use the **Brightness** and **Contrast** buttons, handles are automatically applied to the curve at the input values 32 and 64, and the curve is adjusted appropriately. When you make adjustments with these buttons, existing handles remain anchored, as they do when making custom adjustments with the handles.

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2. Use the handles to modify the curve.

Move the mouse cursor over a handle. The cursor changes to a cross with four arrowheads. Left-click on the handle and hold down the mouse button while you drag the handle to wherever you would like it to be. Release the mouse button to drop the handle.

3. Removing a handle from the curve.

To remove a handle from the curve, just drag it away from the Gradation Window. To remove all the handles from a curve, press the Reset button. This also applies to the handles placed automatically by the Contrast and Brightness functions

Saving and Loading Gradation Curves

When you change the tonal range using the Gradation Curve window, the settings are automatically used in the current session for all future captures until you either change the curve or exit the program. If you start a New Session or Exit the Phase One application, the gradation curve values will be lost.

Should you wish to save the current tonal range values for future use, then use the Save button on the Gradation Curve window. The save option opens up a file selection dialog which prompts you to give the gradation curve settings file a name and a folder location. When you have decided on the name and location, click on the OK button.

To Load a saved gradation curve settings file into the current Phase One session, click on the Load button in the Gradation Curve window. A file-finder dialog appears, allowing you to select a previously saved file.

Understanding Gradation

See the *Curves* topic.

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Gray Balance

Menu Item: Camera ➜ Gray Balance

Keyboard Short-cut: Macintosh: none PC: Alt E P

Description and Use

Select this command to set the application into *Gray Balance* mode.

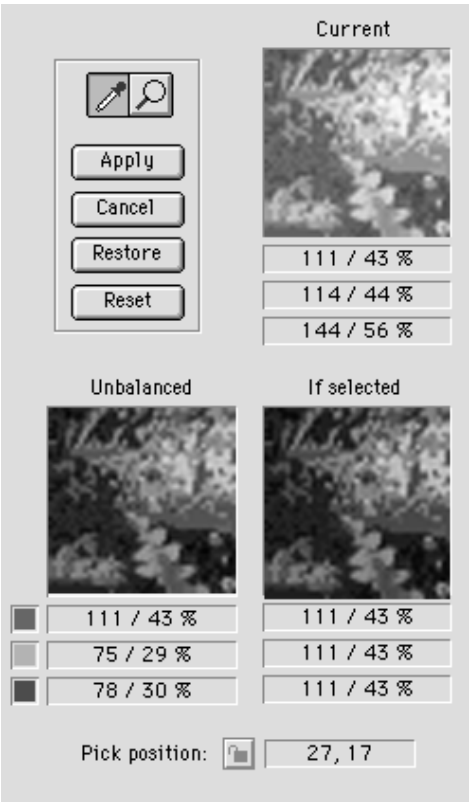
Camera gray balance calibration helps to ensure accurate color captures. Do a gray balance calibration each time you change your lighting arrangement, or at any time you notice your system is not capturing colors correctly. Phase One also recommends that you do a gray balance each time you start the software to ensure that your color captures are as perfect as possible before the image is manipulated in the computer.

Gray tones are "colors" that are defined as having equal intensities of red, green and blue pigment. When the three lines of CCD sensors in the digital camera back see a gray patch in an image, they should produce the same electrical output. Depending upon the lighting conditions (different lights have different proportions of red, green and blue wavelengths), the output from each of the RGB sensors may not be equal. Gray balance calibration ensures that for a particular set-up the outputs are equal. Gray balancing applies a scaling factor to the RGB levels of the captured image.

When doing a *Gray Balance* use an evenly colored, light gray object, such as a test card that contains a grayscale. Use the lights you plan to use on your subjects. Focus your camera on the gray object and make sure the gray object is evenly and adequately lit.

The Gray Balance window has three cursor viewer displays of the preview image. You can use the *Zoom* functions in these windows.

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The **Unbalanced** display shows the image as captured by the camera (but including *Gamma* correction).

The **If selected** display shows how the image would be modified if the pixel under the *Color Picker* cursor was to be used as the reference for correction.

The **Pick Position** shows the position of the *Color Picker* cursor.

The **Current** display shows the preview image after the current gray balance calculation is applied.

When you click the mouse button over a pixel its RGB values are used to compute scaling factors which will equalize your chosen color values.

If you are not satisfied with the effect on the image, click on another part of the gray area in the image.

When you are satisfied with the image, click on **Apply** to keep the new gray balance values and to return to the *Preview Window*.

If you wish to leave the gray balance window without setting a new gray balance, click on **Cancel.**

If you have made a number of choices and the result is not satisfactory, you can use the **Reset** button to give no gray balance correction. The effect of reset is to use the image data exactly as received from the camera without any correction(but including *Gamma* correction).

If you have previously applied a gray balance correction to the image, you can recall the effect this had on the image by clicking on the **Restore** button.

See the *Lock* topic for details on how locking the Color Picker affects the Gray Balance window.

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Grid

Icon: 

To Activate: Click on the icon

To De-activate: Click on the icon

To Edit Values: Double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

Description and Use

This is a toggle command that overlays either a square grid or a set of crosshairs on the image preview area. Theses are for guidance only, and are not part of the image itself.

You use them to align an image in the vertical and horizontal planes. That is, you adjust the physical positioning of your subject after making a preview and seeing how the image aligns relative to the grid or crosshairs. You can move the crosshair target around the preview image by dragging it.

When a grid is selected, the number of **horizontal** and **vertical** lines is as specified in the *Grid* panel. To change the number, double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed), then enter new values.

To change the colour of the grid or crosshairs, click on the coloured patch on the *Grid* panel.

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Hide Floating Windows

Menu Item: Windows ➜ Hide Floating Windows

Keyboard Short-cut: Macintosh: H PC: Alt W H

Description and Use

When you select this command for the first time in a session, all the floating windows that the Phase One application has control of are temporarily closed (hidden).

By selecting *Hide Floating Window*s again, the hidden windows re-appear.

You might use this command to "tidy-up" your screen if there are too many windows open or to see the whole preview image without it being covered by floating windows.

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Image File Info

Icon: 

To Edit Values: Click on the icon.

Description and Use

This pop-up window allows you to attach **Artist**, **Copyright**, **Computer** and **Description** information to the image file header, but only when the **Store image information in capture file** option is checked.

Storing image information is useful for cataloguing your images.

The text editing features (*Cut*, *Copy*, *Paste* and *Select All*) are available when this window is open.

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ISS Control Plugin

Icon: 

To view Window: Click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed)

To close Window: Click on the icon

See Also: *Plugins*

Description and Use

Note: This icon is only displayed when the ISS plug-in has been installed.

Note: Only one shutter plug-in must be installed, otherwise a communications conflict will occur. If you have more than one shutter plug-in installed (in the Phase One plug-ins/utility folder), you must remove all except the shutter plug-in you intend to use. To install a shutter plug-in, choose Custom during the installation procedure.

The ISS (Intelligent Shutter System) is an electronic shutter and aperture for use with large format cameras. Phase One software supports full remote control of the ISS via a serial port on your computer.

The ISS window gives you access to the control functions of the ISS system, allowing you to set the size of the ISS aperture to within 1/10 of an f-stop.

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Load Preferences...

Menu Item: File ➜ Load Preferences...

Description and Use

The *Load Preferences...* function allows you to load personal set-ups for the Phase One Image Capture Software.

Any changes you make to the program settings (for example position of the tool-bar, preview windows, gray balance settings, and so on), are always saved in a file called “Phase One Preferences “ each time you end a session. They are automatically loaded again the next time you re-start the program.

However, if there is more than one photographer using the system, each person can save their preferred camera and screen set-up, ready to be recalled next time they use the system using the *Load Preferences...* function.

Each time you invoke *Load Preferences...*, a file-finder dialog box is displayed, allowing you to search for and open your personal preferences file.

See also *Save Preferences...*

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Lock

Icon:  (Shown locked and unlocked)

To Activate: Click on the lock icon or, when in *Color Picker* mode, hold down the Alt key and click on the desired pixel.

To De-activate: Click on the lock icon

Description and Use

Some numerical data fields in the Phase One application are able to be locked. This means that the data does not change until the data field is unlocked again.

Locking a pick position when in *Color Picker* mode stops the cursor view windows following the color picker. This is useful when you want to continuously monitor the effects of your *Gray Balance*, *Tonal Range* and *Gradation* changes in a critical area.

Locking the data fields in the *Capture Specifications* panel is useful when you want to produce an image with a specific size or resolution.

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Maintenance

Menu Item: Camera ➜ Maintenance

Description and Use

This function opens up a dialog box that allows you to move the CCD sensor to the middle of the scan area.

You would want to do this when cleaning the CCD sensor. See *Care and Cleaning* in your camera back user's guide.

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Mask

Icon: 

To Activate: Click on the icon

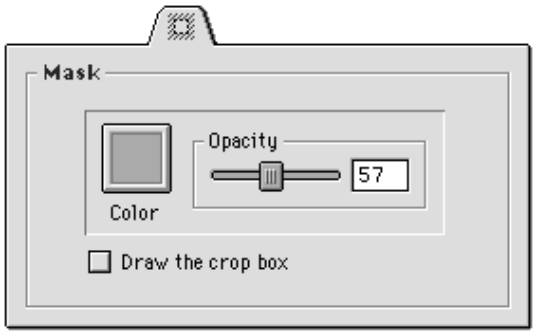
To De-activate: Click on the icon

To Edit Values: Double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

Description and Use

The *Mask* function allows you to "hide" areas of your preview image that are not within the *Crop Box*. This is useful when non-selected parts of the preview image distract you from seeing your proposed composition correctly. In effect the mask is adding a frame around your selected capture area.

To edit the *Mask* values, double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).



The **Opacity** value is changed by moving the slider or typing in a percentage between 0 and 100. Reduce the opacity value if you wish to "see" behind the mask.

The mask colour is fixed within the grayscale range.

The **Draw Crop Box** option allows you to turn the dotted outline of the *Crop Box* on and off. When set off, you are still able to use the *Crop Box* resize and move tools.

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Open...

Menu Item: File ➜ Open...

Keyboard Short-cut: Macintosh: O PC: Ctrl+O

Description and Use

The **Open...** command allows you to open a captured image file using the Phase One *Capture Viewer*.

A file selection dialog appears from which you can select the captured image you wish to view. The default folder for the file selection dialog is the folder selected by the *Capture File* option .

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Orientation...

Menu Item: Camera➜ Orientation...

Keyboard Short-cut: Macintosh: none PC: Alt C O

Description and Use

This function allows you to set the *orientation* of the preview image, making it easier to make composition and colour judgements, for example when making "landscape" captures.

After changing the Orientation, the effect is applied only when the next *Preview* is made.

The system default is with zero rotation. If you set a new orientation, it is only valid until you *Quit* the program.

Note: Rotation only applies to *Preview* images (not a *Capture*)

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Paste

Menu Item: Edit ➜ Paste

Keyboard Short-cut: Macintosh: V PC: CTRL+V

Description and Use

The *Paste* command is available only when you have selected a text field to work in.

Use *Paste* in combination with *Copy* to transfer text data from one field to another within the Phase One software, or to get text information from the computer's clipboard.

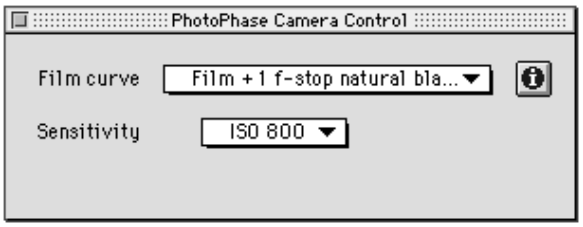
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PhotoPhase Control

Note:	This window is only available when you have a PhotoPhase camera back attached to your computer.
Menu Item:	Camera ➜ Settings
Keyboard Short-cut:	Macintosh: none PC: Alt C S
Icon:	
To Activate:	Click on the icon

Description and Use

The *Settings* command displays the PhotoPhase Camera control window.



Use the *PhotoPhase Control* window to set the equivalent ASA rating for your next image and what film curve you might want to use. For information on film curves, please see the *PowerPhase Control* topic.

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Plugins

Description and Use

Plugins are software packages that add extra functionality to the Phase One software. Some plug-ins are included with the Phase One software and you are free to install these if you would like to use the facilities they offer. Other *Plugins* are for use with cameras or other hardware. These must be purchased as required.

Plug-ns can be installed ("plugged in") at any time. To do this, start the software install procedure (see the *Software Installation* manual) and select the **Custom Install** option. Altertnatively, you can drag-and-drop the plugin into the plugins folder.. You can then select which plug-ins to install. To find out what plug-ins are intalled, click on *About Plugins* menu. Below are some typical plugin options:

For Information on:	See topic:
	*BatchTool* in BatchTool Manual
	*Embed Copyright*
	*Focus Tool* in Focus Tool Manual
	*ISS Control*
	*Quicktime Tool*
	*Scan Progress*

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PowerPhase Control

Note: This window is only available when you have a PowerPhase camera back attached to your computer.

Menu Item: Camera ➜ Settings

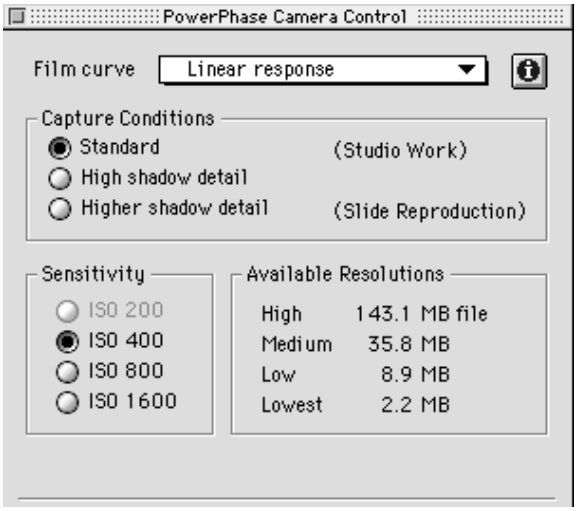
Keyboard Short-cut: Macintosh: none PC: Alt C S

Icon: 

To Activate: Click on the icon

Description and Use

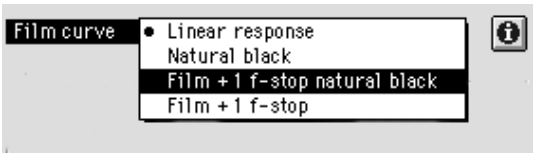
The *Settings* command displays the PowerPhase camera control panel.



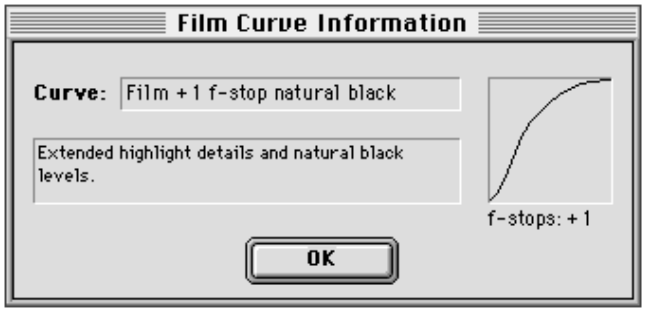
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Film Curve

A film curve is a *Gradation* type curve that can be loaded with the camera. A film curve makes the camera behave in a non-linear way, pre-correcting your data before it enters the computer. Example film curves are shown below:



The information button at the side of the pop-up list allows you to graphically see the effect the curve on the transfer function. An example is shown below that extends the highlight details and provides natural black levels.



Film curve files are provided with the software and are stored in the Film Curves folder.

Some of the film curves provided automatically exclude sensitivity and scan settings if the system would be overranged by using them.

You should always take a new preview after changing the film curve.

Setting the Task

The **Capture Conditions** panel allows you to select the type of work that you will be doing with your PowerPhase camera.

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When set to **Higher Shadow Detail**, the Phase One software maximizes the contrast ratio of the image, an important factor when capturing transparencies or other type of "finished" artwork where detail in the shadow and highlight areas lie close together. Maximizing the contrast ratio reduces the sensitivity, but this is not considered to be a hinderance, since lighting levels are not so critical when scanning flat artwork.

When set to **Studio Work**, the sensitivity is maximized, giving you two f-stops more than when set to Slide Reproduction. This allows you a lot more freedom in choosing lighting conditions and aperture size, since up to 1600 ASA is available.

Sensitivity Setting

After you have chosen the **Capture Conditions**, you should choose the **Sensitivity** to match the type of finished product you need. A rule of thumb is that the lower the sensitivity, the higher the **Available Resolution** (file size).

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Preview

Menu Item:	Camera ➜ Preview
Keyboard Short-cut:	Macintosh: J PC: Alt C P
Icon:	
To Activate:	Click on the icon
See Also:	*Preview Crop*

Description and Use

This function starts a preview scan. *Preview* scans are made at very low resolution; this means that a preview image takes less time to scan, meaning screen updates are quicker when the effect of changes are shown.

Super Preview scans are made at twice the resolutionof preview; for more information see the *Super Preview* topic.

Making a *Preview* is similar, in composition terms, to taking a Polaroid shot of a particular scene. However, the Preview image is used extensively for judging color balance and exposure, so its use is critical for producing good final images.

The result of a preview scan is shown in the *Preview Window,* selected by clicking on the *Preview* tab at the bottom of the *Preview Window.*

Note: If the *Preview* outline is flashing, this indicates that you have changed one or more settings affecting the picture and you are advised to make a new preview scan.

To **start** a preview, click on the *Preview* button.

To **stop** a preview prematurely, click on the  icon.

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Preview Crop

Menu Item: Camera ➜ Preview Crop

Keyboard Short-cut: Macintosh: I

Icon: 

To Activate: Click-and-hold on the *Preview* button for more than 0.1 second, then select *Preview Crop*

See Also: *Preview* and *Super Preview*

Description and Use

Similar to *Preview* or *Super Preview,* this function starts a *Preview* scan, but only the crop area is updated. This makes taking previews even quicker, especially when there are long exposure times involved.

The result of a preview scan is shown in the *Preview Window,* selected by clicking on the *Preview* tab at the bottom of the *Preview Window.* Remember, only the crop area is updated. Preview information outside the crop area remains "as is".

Note: If the *Preview* button is flashing, this indicates that you have changed one or more settings affecting the picture and you are advised to make a new preview scan.

To **start** a preview crop, click-and-hold on the *Preview* button for more than 0.1 second, then select *Preview Crop*.

To **stop** a preview prematurely, click on the 

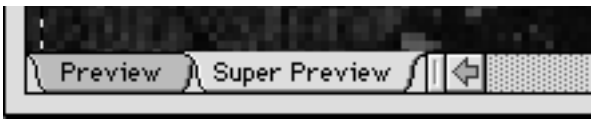
icon.

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Preview/Super Preview Tab

Description

The *Preview/Super Preview tabs* are part of the main user interface for the Phase One Image Capture Software. They are located at the bottom of the preview area.



The *Super Preview* window behaves in a similar fashion to the preview window. The resolution is twice as high, therefore the scan takes twice as long to complete. You can reduce scanning time by activating the *Preview Crop* command.

You should note the apart form the crop outline box, the *Preview Window* and the *Super Preview Window* are independent.

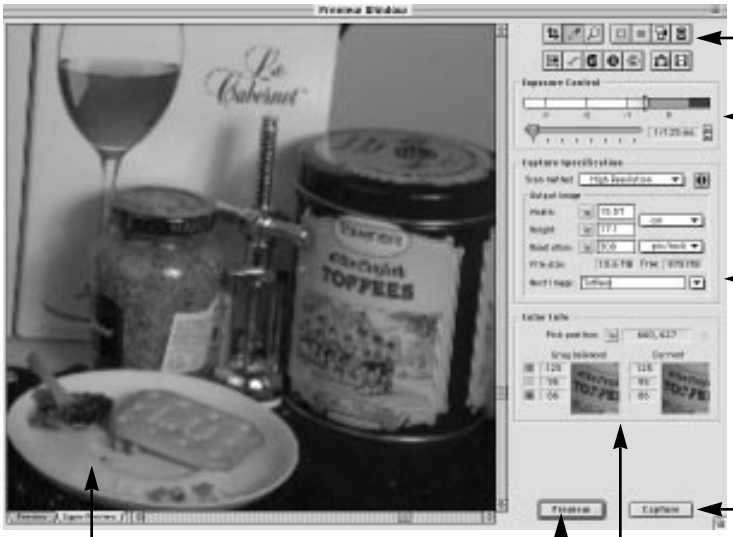
The most important features of the *Super Preview Window* are shown in the sketch in the *Preview Window* topic.

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Preview Window

Description

The *Super Preview Window* is part of the main user interface for the Phase One Image Capture Software. It is accessed by clicking on the *Super Preview* tab at the bottom of the preview area. The most important features are shown in the sketch below



Cursor Tools and View Modes
Use these icons to activate different cursor tools and view modes

Exposure Time
To change the exposure time, move the slider left and right with the mouse.

Capture Specification
This panel gives you information about the name and size of your image

Capture
Click on this button to start a capture scan.

Image Area
Your preview image is displayed here when the scan is finished.

Preview
Click on this button to start a preview scan.

Color Info
This panel tells you about the color of the selected pixel

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Profiles

Note: *Profiles* is Macintosh specific.

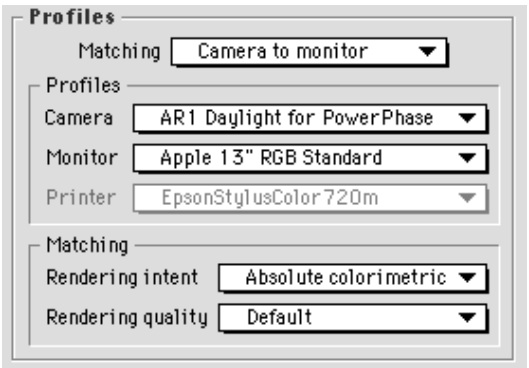
Icon:



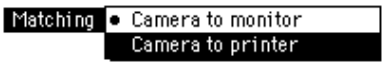
Menu Item: File ➜ Preferences...

Description and Use

The *Profiles* panel allows you to specify the settings to be used with ColorSync, the color management system for Macintosh computers. Read the small discussion at the end of this topic for more information on ColorSync and its terms.



The Matching field has two options, **Camera to monitor** and **Camera to printer**.



When set to **Camera to monitor**, the camera profile is matched (targeted) directly to the monitor profile. You would use this when the image is going to be edited on screen by another image processing application (or example Photoshop) before

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Profiles

A file containing information about the color reproduction capabilities of a device, such as a a digital camera, a monitor or a printer is called a **Profile**. Commonly, two profiles (source and output) are used during a color matching session.

A **source profile** represents the color gamut of a device from which an image was originated. For example, with an image captured by a Phase One digital camera, the camera profile is the source profile. If an image is created and viewed on a monitor, then the monitor profile is the source profile.

An **output profile** represents the color gamut of a device on which an image is to be outputted. For example, if an image is to be printed on a color printer, then the printer's profile is the output profile. Or, if an image is to be viewed on the monitor, the monitor profile is the output profile. In the publishing arena, the printer profile usually refers to the profile developed for an imagesetter/film-based proofing combination (e.g. MatchPrint) or for a particular offset press.

Proofing is the process of using one device to predict the output of an image on another device. A **proofer profile** represents the device which is used for the prediction. For example, if an image whose output on a color printer is to be proofed on a monitor, the monitor profile will be the proofer profile.

Rendering

Because of the differences among devices' color capability, different methods exist for applying color matching to an image. This **matching style** or **rendering intent** is usually selected according to the content of the image.

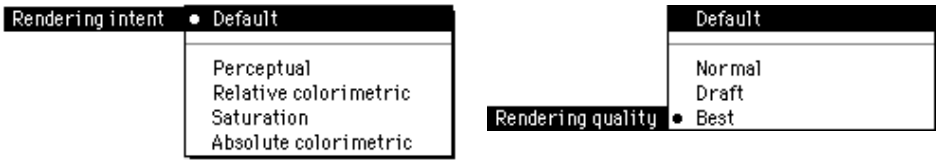
A **perceptual** matching style gives the most pleasing reproduction given the capabilities of the devices involved. It gently squeezes the entire source gamut so that it just fits inside of the destination gamut. The hue is always preserved. This is the most commonly used style, especially for reproduction of photographic images.

A **colorimetric** matching style reproduces colors exactly the same as the eye can

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printing. When set to **Camera to Printer**, the camera profile is matched to the specified printer profile. It is also further matched to the monitor profile so that the colors seen on the monitor screen **during preview** are close to the colors produced by the printer., allowing soft-proofing.

The Profiles sub-panel contains three items; **Camera**, **Monitor** and **Printer**. Use the pop-up menus to select the profiles according to the equipment you are working with – for example, if you have a PowerPhase camera back with an AR1 filter installed, select "AR1 Daylight for PowerPhase" as your profile.The " Extra Saturation" profile adds more color saturation to the image.



The **Matching** panel has two entries, **Rendering intent** and **Rendering quality**. Use the pop-up menus to select the rendering type you want with the current set-up. (See below for a discussion of the rendering types available.) The default intent is "Perceptual" and the default quality is "Normal".

About ColorSync

ColorSync is a process of making a controlled transformation of color values generated from one device to values intended for another device. Imaging devices such as displays, printers and Phase One cameras are only capable of using a subset of all visible colors. The color subset that a device is capable of reproducing is called its color **Gamut**.

In general, different devices show the same color differently, so when two or more devices are used together (e.g., a digital camera plus printer or digital camera plus monitor), it is very unlikely their gamuts will match. In these cases the gamuts must be manipulated to resolve these differences in a pleasing way. This process is called color matching (gamut mapping).

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distinguish. This may result in clipping of certain colors which can not be reproduced on a device.

Colorimetric matching can further be divided into **relative colorimetric** matching and **absolute colorimetric** matching, where relative matching accounts for the ability of the human eye to automatically adapt to the surround white (e.g., white of the paper the image is printed on), and absolute does not. Colorimetric matching is most commonly used for reproducing Logo colors where the exactness of the color is important.

Saturation matching best preserves the vividness of the image. This expands and contracts the source gamut so that it exactly fills the destination gamut. Therefore, fully saturated source colors always map onto fully saturated destination colors. This style is mostly used for reproduction of business graphics and presentation graphics including graphs and pie charts.

Matching quality

The matching quality indicates the overall computation precision of a particular matching session. Higher computation precision requires more run-time memory. It is always best to use the highest matching quality your system allows.

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Quicktime Tool

Menu Item: View ➜ QT...

Keyboard Short-cut: Macintosh: A

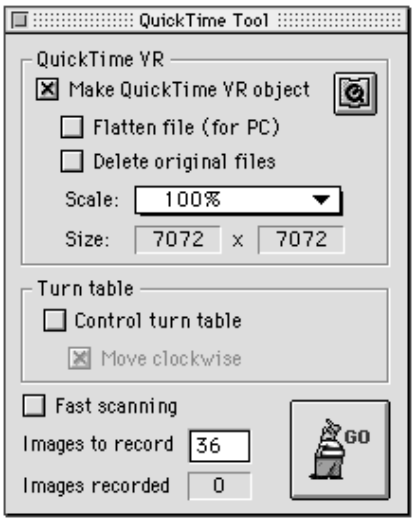
Icon:



To Activate: Click-and-hold on the *Preview* button for more than 1 second, then select *Preview Crop*

See Also: *Preview* and *Super Preview*

The *QuickTime* tool allows you to do batch scanning to produce QTVR files. QTVR is an acronym for QuickTime Virtual Reality. This is a specification for animation files used in multimedia presentations, typically on the Internet.



Check the **Make QuickTime VR object** box if youwant to generate a Quicktime VR file from all the captures of the next batch.

If you expect the QuickTime file to be used on a PC, be sure to set **Flatten File**.

To clean up your disk-space as you go, check the **Delete original files** box. This removes the original TIFF files when the QTVR file is ready. **Note:** Be sure that the Open Image after Capture option is not active (see the *Capture File* topic)

You can apply a scaling factor from 25% to 100% using the **Scale** list. Scaled images may have increased aliasing effects.

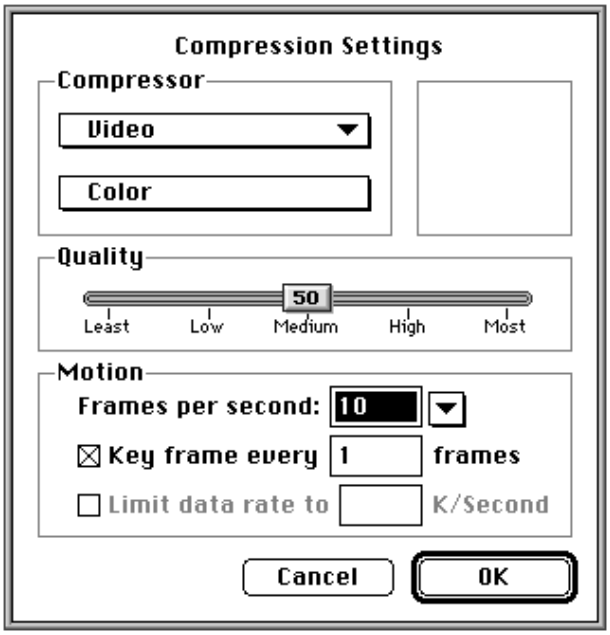
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If you have installed the QTVR Step Control plugin, you can gain control of the turntable by checking the **Turntable** box. If you do this, remember not to change the settings of the turntable control directly . The QuickTime dialog will take control when necessary.

If you choose the **Fast Scanning** option, the camera will not recalibrate between captures. **Note:** Fast Scanning should only be used with fast exposure times.

The **Images to record** item is the total number of images that will be captured. The **Images recorded** field shows you how many images have been captured.

 Clicking on this icon accesses the QuickTime Settings dialog.



The settings you choose in this dialog will depend upon your final media.

The higher the quality and the frame rate, the larger the final file size.

For normal use, set the parameters as shown in the dialog example given here *(left).

Click on OK when you have selected the appropriate parameters.

When you have completed all your choices, start the QTVR capture process by clicking on the Go icon. 

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Quit

Note:	*Quit* is Macintosh specific. PC users should refer to the *Exit* topic.
Menu Item:	File ➜ Quit
Keyboard Short-cut:	Q

Description and Use

Selecting this entry exits the Phase One application and closes all windows associated with the Phase One software.

The non-image settings of the application at the time of exit are saved in the preferences file. Any preview data will be lost as this is kept in a temporary file applicable to the current session only.

Image data is automatically saved when you make a capture, so you never need worry that a take has not been recorded.

Tonal Range and *Gradation* settings are only saved when you specifically do so using the Save... option on their respective windows.

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Save Preferences...

Menu Item: File ➜ Save Preferences...

Description and Use

Save Preferences... brings up a file location window that allows you to specify where the preferences of the current session will be saved.

Typically you would use this option if there is more than one user or camera/lighting set-up associated with the system. That is, each user or set-up can have a settings file that can be loaded in using the Load Preferences... function each time the the user or set-up changes.

Phase One recommend that to keep your files in order you create sub-folders of the Phase One Application folder named “Users” and “Set-ups”. You can then save the current session in the appropriate folder, ready for recalling at a later date. By using sub-folders you will minimize the time spent looking for the correct file to open.

When you end a Phase One Image Capture Software session, the settings at that time are automatically saved in the default preferences file. This means that the same settings will be loaded in next time you start the application.

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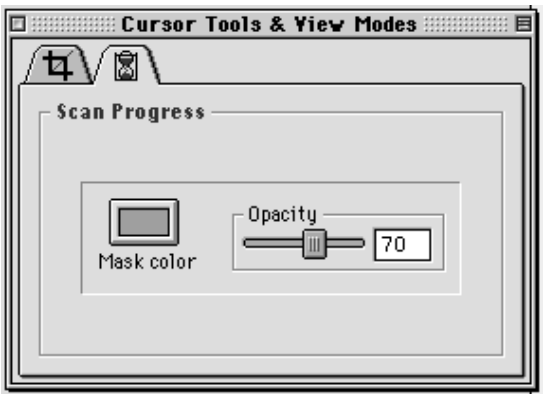
Scan Progress

Menu Item:	View ➜ Viewmodes➜ Scan Progress
Icon:	
To Activate:	Click on the icon
To De-activate:	Click on the icon
To Edit Values:	Double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

Description and Use

The *Scan Progress* plug-in allows you to see how far a scan is progressing in the preview window. If you have not installed this plug-in, refer to the Software Installation manual to find the correct procedure.

To edit the *Scan Progress* display, double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).



The **Opacity** value is changed by moving the slider or typing in a percentage between 0 and 100. Reduce the opacity value if you wish to "see" behind the progress indication

The indication color is changed by clicking on the coloured patch and then choosing the new colour.

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Select All

Menu Item: Edit ➜ Select All

Keyboard Short-cut: Macintosh: A PC: CTRL+A

Description and Use

The *Select All* command is available only when you have selected a text field to work in.

Use *Select All* to highlight all the text in a data field. You are then able to *Copy* or *Cut* this text.

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Settings

Menu Item:	Camera ➜ Settings	
Keyboard Short-cut:	Macintosh: none	PC: Alt C S
Icon:		
To Activate:	Click on the icon	

Description and Use

This command displays the control panel for the digital camera back currently attached to your system. From this panel you can control the **sensitivity** (the equivalent **ISO rating**) of the camera.

The control panel that appears depends upon the camera currently attached to your system. For details of the different control panels, refer to the topic with the same name as the camera back.

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Sinar Expolux Shutter

Icon: 

To view Window: Click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed)

To close Window: Click on the icon

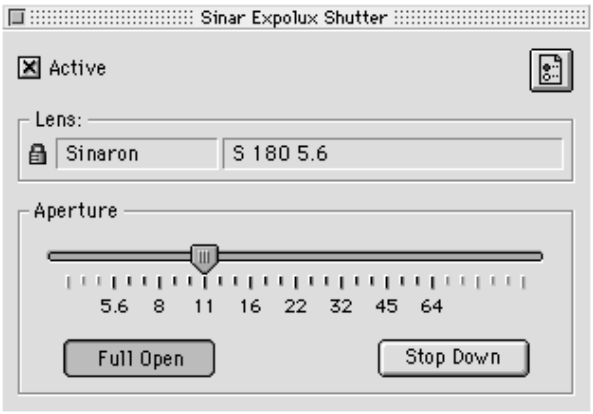
See Also: *Plugins*

Description and Use

Note: This icon is only displayed when the Sinar Expolux Shutter plug-in has been installed.

Note: Only one shutter plug-in must be installed, otherwise a communications conflict will occur. If you have more than one shutter plug-in installed (in the Phase One plug-ins/utility folder), you must remove all except the shutter plug-in you intend to use. To install a shutter plug-in, choose Custom during the installation procedure.

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The Expolux shutter is an electronic shutter and aperture for use with large format cameras. Phase One software supports full remote control of the Expolux via a serial port on your computer.

The Expolux Shutter window gives you access to the control functions of the Expolux Shutter system, allowing you to set the size of the aperture, etc.

Note: Shutter control is only available when the **Active** box is checked, even though the plug-in is installed.

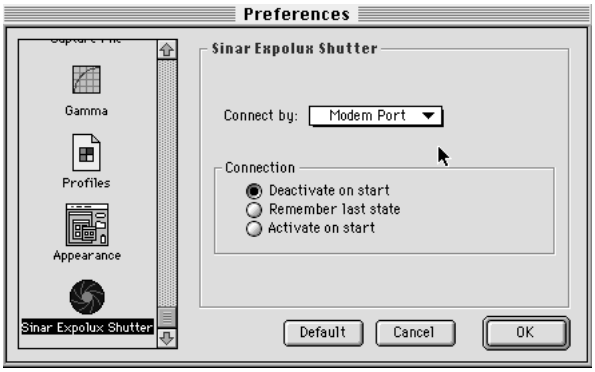
The **Full Open** button opens the aperture to its full extent. Use this for manually focussing your subject.

The **Shut Down** button moves the aperture until it is in the position corresponding to the f-stop you have set on the **Aperture** slider. Use this to manually check the depth of field, composition, etc.

When you preview or capture a picture using the Expolux shutter controlled via Phase One software, the shutter is always automatically set to the Aperture size set on the slider, regardless of the previous aperture position, for example Full Open.

The **Lens** field in the dialog box is for information only. This shows which lens the Expolux shutter has attached to it, and therefore what range of f-stops are displayed. The lens information is gathered from an electronic tag attached to the lens that mates with the Expolux hardware.

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The **Preferences** dialog box (accessible via the preferences icon on the shutter control dialog) will have an entry if you have a shutter installed. On this dialog you can decide which port the Expolux is connected to. Choose either **Modem Port** or **Printer** port, whichever is free in your system.

The **Connection** options allow you to decide the state of the Expolux communications path when the Phase One software starts. If you find you are getting conflicts in your system because a port is already in use, then **Deactivate on start** is a good option to choose. The **Remember last state** option sets the Active box in the same condition as you last left it (i.e. either set or not). Setting **Activate on start** activates the Expolux shutter every time the Phase One software starts.

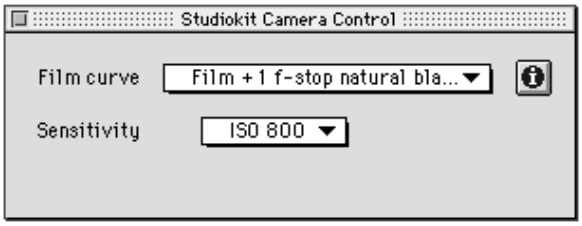
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Studiokit Control

Note:	This window is only available when you have a PowerPhase camera back attached to your computer.
Menu Item:	Camera ➜ Settings
Keyboard Short-cut:	Macintosh: none PC: Alt C S
Icon:	
To Activate:	Click on the icon

Description and Use

The *Settings* command displays the Studiokit camera control window.



Use the *Studiokit Control* window to set the equivalent ASA rating for your next image and what film curve you might want to use. For information on film curves, please see the *PowerPhase Control* topic.

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Super Preview

Menu Item: Camera ➜ Super Preview

Keyboard Short-cut: Macintosh: J PC: Alt C P

Icon: 

To Activate: Click on the icon

See Also: *Preview Crop*

Description and Use

This function starts a *Super Preview* scan if you have the Super Preview tab on the *Preview Window*. *Super Preview* scans are made at twice the resolution of a preview scan; for more information see the *Preview* topic.

Super Previews are independent of *Previews.*

Making a *Super Preview* is similar, in composition terms, to taking a Polaroid shot of a particular scene. However, the the *Super Preview* image is used extensively for judging color balance and exposure, so its use is critical for producing good final images.

The result of a super preview scan is shown in the *Super Preview Window,* selected by clicking on the *Super Preview* tab at the bottom of the *Preview Window.*

Note: If the *Preview* button is flashing, this indicates that you have changed one or more ssettings affecting the picture and you are advised to make a new super preview scan.

To **start** a super preview, click on the *Preview* button.

To **stop** a super preview prematurely, click on the 

icon.

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Tonal Range

Menu Item:	Edit ➜ Preferences...
Keyboard Short-cut:	PC: Alt E P
Icon:	
To Activate:	Click on the icon
To De-activate:	Click on the icon
To Edit Values:	Double-click on the icon or select the icon in the *Cursor Tools and View Modes* floating window (if displayed).

Description and Use

This entry opens the **Tonal Range** window, which enables you to optimize the tonal range in your images.

The tonal range of a digital picture is defined as:

(value of the lightest pixel) - (value of darkest pixel) +1

With Phase One cameras the maximum tonal range is 4096.

With an 8-bit TIFF picture, the maximum tonal range is 256.

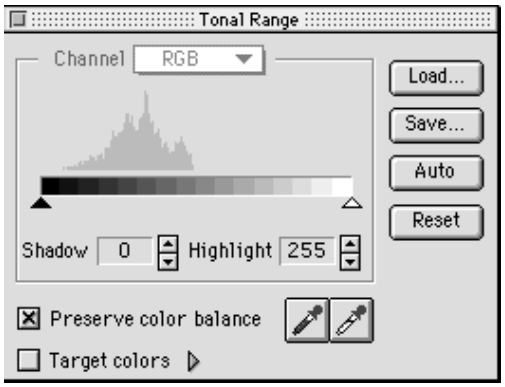
For example, if your preview scan reveals, via the *Color Info* window, that the brightest point in the image has a value of 159, and your darkest point a value of 10, your tonal range would be only 150 and your image would appear dark and unclear. By setting new highlight and shadow values, you can increase the tonal range to the full 256 levels, thereby maximizing your image's brightness range and definition in the highlight and shadow areas.

The Tonal Range window has a graphical area which shows a **histogram** of the

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image data and an overlay of the current *Gradation Curve*.

There are three different methods for setting the highlight and shadow values: automatic, graphical adjustment, and pixel selection. These methods can be used separately or combined.



The Automatic Tonal Range Function

The easiest way to set the highlight and shadow values is to use **Auto** button. The auto function works by analyzing the pixel values inside the *Crop Box* to find highlight and shadow settings that give an optimised tonal range. When using the **Auto** function, previous highlight and shadow values are overridden.

If the **Preserve Color Balance** box is checked, then the color cast will also be adjusted automatically. When unchecked, you can adjust the individual channels yourself.

Highlight and Shadow Color Pickers

The color pickers enable you to read pixel values and choose your highlight and shadow values directly from your image. The Highlight color picker is the white eyedropper in the *Tonal Range* window. See the *Color Picker* topic for a full

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description of how color pickers display pixel values. You can use the *Lock* command with these color pickers. This is useful if you want to use the *Color Info* panel to examine the effect of Tonal Range while using a pixel that is not visible in the *Color Info* window as a reference.

Highlight and Shadow Sliders

The large panel in the *Tonal Range* window shows the current highlight and shadow settings both numerically and graphically. You can use the highlight and shadow sliders to change these settings directly using the mouse.

These controls offer a good way to fine tune the settings made with the Auto function or with the color pickers.

Histogram

The histogram shows the distribution of pixel brightnesses within the *Crop Box*. Each "spike" in the histogram represents a brightness value between 0 and 255. The height of the spike is an indication of how many pixels within the *Crop Box* have the corresponding brightness value.

Channel Setting

When in *Color Mode* and with **Preserve color balance** unchecked the **Channel** field has four options: Red, Green, Blue, and RGB. The default display is RGB. There is only one channel in gray mode.

The RGB option shows the full range of pixel values of all colors. Changes to the RGB highlight and shadow values will be applied to all other colors proportionally so that there will be no change in the color cast.

The three individual color displays (Red, Green, and Blue) each show the highlight and shadow settings for that particular color channel.

Removing a Color Cast

The best way to prevent color casts is to make a new *Gray Balance* calibration each time you start up your system or change your lights.

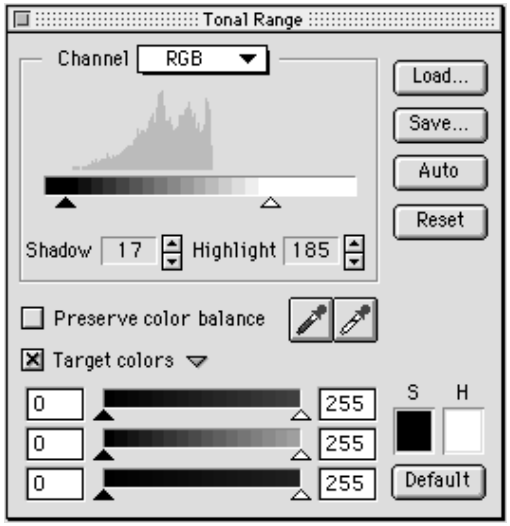
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If you still see a color cast, you can use the tonal range window to adjust the highlight and shadow points of each color channel independently.

Target Colors

At the bottom of the *Tonal Range* window is a **Target Colors** check box. When you activate this the *target colors* range slider and color selector boxes appear..



The default values for the shadow and highlight target colors are 0 and 255 respectively. This means that the pixel value that you choose as your shadow reference point is mapped onto a value of 0. If there are any pixels in your image with an original value lower than the shadow reference point, they will also be mapped onto 0, and consequently removing shadow detail.

If you now, for example, choose a target shadow value of 4 (by typing this in the numeric box), your shadow reference point is mapped to a pixel value of 4. Those pixels in the original image that are within a value of -4 from the shadow reference are now distinguishable in the image - whereas before they were “saturated”. The highlight target color works in the same way. When Preserve color balance is not checked, you can also set the target values by double/clicking on the S or H panels.

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You should use Target Colors with care. It is usually best to keep the shadow and highlight target colors between 0–40 and 220–255 respectively. 10 and 240 are good starting points. You should also try to pick gray tones as your reference points to avoid color casts being introduced.

Adjusting the target colour is useful if, for example, the printing process does not allow 100% white (equivalent to 255).

The gradation curve shown on the Tonal Range graph indicates how the target color settings affect the mapping. You will see extensions to the gradation curve outside the grid, indicating how “negative” and “overrrange” pixels will be mapped.

Saving and Loading Tonal Ranges

When you change the tonal range, the settings are automatically used in the current session for all future captures until you either change the range or exit the program.

Should you wish to save the current tonal range values for future use, then use the **Save** button on the Tonal Range window. The save option opens up a file selection dialog which prompts you to give the tonal range settings file a name. You can also add a text description to the file by clicking on the **Description...** button. The text you type in here is displayed in the Load dialog. The description feature allows you to give a meaningful account of how a saved tonal range setting affects the picture file.

When you have decided on the name and description, click on the OK button. The default folder for storing tonal ranges is the Tonal Range Settings folder in the Phase One hierarchy.

To **Load** a saved tonal range settings file into the current Phase One session, click on the Load button in the Tonal Range window. A file-finder dialog appears, allowing you to select a previously saved file.

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Undo

Menu Item: Edit ➜ Undo.

Keyboard Short-cut: Macintosh: Z PC: Ctrl+Z

Description and Use

This function, which has a toggle action, undoes or redoes the last *Tonal Range*, *Gradation* or *Crop Box* adjustment on a preview image.

Use it to "cancel" the last change made if the change does not have the desired pictorial effect.

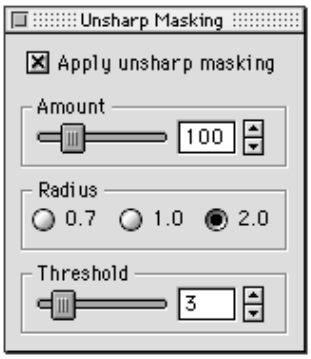
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Unsharp Masking

Menu Item:	Image ➜ Unsharp Masking.
Keyboard Short-cut:	Macintosh: U PC: Alt I U
Icon:	
To Display Window:	Click on the icon
To Close Window	Click on the icon

Description and Use

The *Unsharp Masking* feature enables you to add "sharpness" to your images as they are scanned by accenting the definition of edges and textures in your images.



The filter works by increasing contrast in areas where adjacent pixels have relatively large differences in value; areas of relatively even pixel values will be less affected. For example, if a nearly black pixel is adjacent to a nearly white pixel, the unsharp masking filter would make the values of these pixels black (value 0) and white (value 255) respectively.

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When the **Apply unsharp masking** check box is active, filtering will be applied to all image captures as they are scanned. To disable unsharp masking, make sure this box is unchecked. Click on the box to toggle the setting.

The higher the number entered for **Amount,** the stronger the effect of the sharpening filter will be. If your images appear too "blurred", then increase the sharpening amount. A high value will increase contrasts, but will also reveal more noise in your image. If your images appear noisy or speckled, then reduce the amount of sharpening applied.

The **Threshold** setting allows you to specify a tolerance range to prevent overall sharpening that might generate noise or cause other unexpected results. A typical threshold value is between 1-10.

Radius defines the size of the area around each pixel that is taken into account when making Unsharp Masking calculations. A larger radius gives better results, especially for high-reolution pictures, but computation time is much slower.

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Zoom 1:1

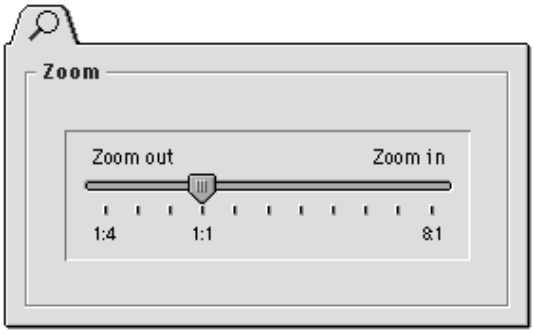
Menu Item:	Windows ➜ Zoom 1:1		
Keyboard Short-cut	Macintosh: 0	PC:	none
Icon:			

Description and Use

Use this function to display an image viewed with Phase One software without any enlargement or reduction.

The *Zoom 1:1* function is only available for images in the *Preview Window*.

The zoom-size slider, part of the *Cursor Tools & View Modes* window, allows you to set a zoom ration of 1:1.



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Zoom In

Menu Item: Windows ➜ Zoom In

Keyboard Short-cut Macintosh: + PC: none

Icon: 

To Activate in Preview: Click on the icon

To Zoom In: When the  cursor is displayed, click on the image.

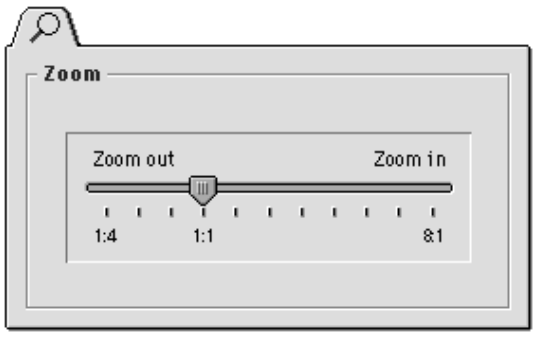
Description and Use

Use this function to increase the displayed size of an image viewed with Phase One software.

To **scroll** around the image, change the cursor to a  by holding down the **Ctrl** key, or use the scroll bars.

The zoom function is available for images in the *Preview Window*, *Gray Balance* window and the *Color Info* panel (cursor views).

The zoom-size slider, part of the *Cursor Tools & View Modes* window, is only available in the Preview Window.



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Zoom Out

Menu Item: Windows ➜ Zoom Out

Keyboard Short-cut Macintosh: - PC: none

Icon: 

To Activate in Preview: Click on the icon

To Zoom Out: When the cursor is displayed, hold down the Alt key to change it to a and click on the image.

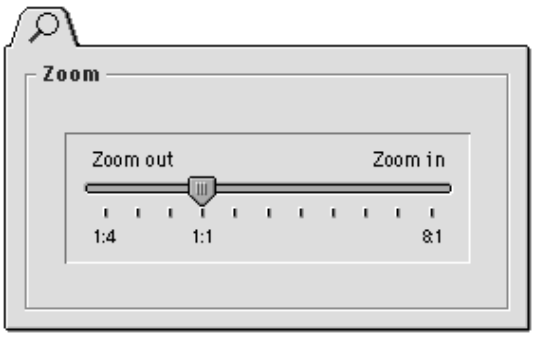
Description and Use

Use this function to reduce the displayed size of an image viewed with Phase One software.

To **scroll** around the image, change the cursor to a by holding down the **Ctrl** key, or use the scroll bars.

The zoom function is available for images in the *Preview Window*, *Gray Balance* window and the *Color Info* panel.

The zoom-size slider, part of the *Cursor Tools & View Modes* window, is only available in the Preview Window.



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Glossary

This glossary gives definitions of many of the technical words used in this manual. The definitions used are those that most closely apply to Phase One image capturing software.

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Glossary

Application: A computer program designed to do a certain task, such as word processing, image manipulation, or image capture. When you work with your digital studio camera system, you work with the Phase One application program that came with your camera back system. The Phase One application displays the user interface, and manages and runs all other Phase One software associated with your system.

Camera Calibration: Adjustments made by the computer to incoming camera signals which correct for variations in the electronics, thus maintaining consistent and accurate readings.

Camera Control Plug-in: This software contains code that enables the application to control and receive data from the camera back.

Capture: The full process of scanning an image, applying all settings (e.g. tonal range, gradation, interpolation, unsharp masking, etc.) and storing the image file on disk.

Color Cast: Discoloration in an image caused by the spectrum (color temperature) emitted by studio lights or reflections in the studio. Colored filters are sometimes used to add a color cast for effect.

Color Management: A system for making sure that colors are represented consistently by the camera back, computer monitor, and output device. It assures that the colors in your final print will match the colors in your studio.

CCD Array: The light sensitive area of the camera back.

CCD Calibration: Amplification or attenuation applied to each pixel on the CCD array. It is used to calibrate the CCD array so that all pixels react uniformly.

Click: To press and quickly release the mouse button, usually while the mouse pointer is over some specified part of the screen, for example “Click on **OK**”.

CMYK: Stands for Cyan, Magenta, Yellow, and blacK. These are the basic ink colors used in a color printing press. In order to print your images on CMYK printers, they must be converted from their scanned values (expressed in red, green, and blue) to their CMYK equivalent values. Also called process separation colors.

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Glossary

Color Picker: A feature of the user interface which allows you to read the color and location of any pixel you point to with the mouse. It is also used to select pixels for the highlight and shadow settings.

ColorSync: A system of color balancing used by Apple Computers Inc. that attempts to ensure that all devices used to display and handle colored images have translatable gamut ranges.

Color Table: The internal look- up table which modifies each pixel value. It is created from merging the *Gamma, Tonal Range*, *Gradation*, and *Gray Balance* functions.

Crop: To select a reduced area of the exposure for use. When an image is cropped, only the selected area is scanned. All other pixels are ignored.

Cropping Tool: A tool to enable you to use the mouse to define the cropping area.

Dialog Window: A window in which you can read and change settings currently used by the application.

Double Click: To quickly press and release the mouse button twice in short succession, usually while the mouse pointer is over some specified part of the screen.

Drag: To press and hold the mouse button while the mouse pointer is over an object you wish to stretch, move, or copy. An outline of the object will then follow the mouse pointer. Move the outline to the new desired location, and release the button to "drop" the object there.

Dynamic Range: The number of levels which are available in an image. 12-bit data has a dynamic range of 4096. 8-bit data has a dynamic range of 256.

Exposure Area: The dimensions of the light sensitive area of the camera back which will be scanned in the final take. The exposure area can be reduced by cropping.

File: A collection of related data that is stored on a computer, and is accessible as a single unit. For example, all data used to make a single image is stored as a single file. The Phase One application program is also stored as a file.

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Final Shot or Final Take: A capture which is made after examining and correcting the preview shot. This is the picture you will use in your work. It is scanned, the color table is applied, and it is stored on disk. You take a final shot by clicking on the **Capture** button.

Folder: Folders give you a way to organize the computer files on your hard disk. By grouping several related files together in a folder, you make it easier to find your files when you want them. For example you could keep all your pictures of flowers in a folder called “flower pictures”. You can keep folders inside of other folders, so your flower pictures folder might be one of several folders kept in a folder called “Images”.

Gain: Amplification or attenuation applied to an electronic signal to make it stronger or weaker.

Gamma: A mathematical way to represent the logarithmic way a device (e.g. CCD or monitor) reacts to light of various intensities.

Gradation: The distribution of pixel levels in a picture. Refer to the Tutorial for a full discussion of gradation.

Gradation Curve: A curve on a graph that shows how the grey levels of an incoming image will be appear in the output image.

Gray Balance Calibration: A process which calibrates your camera back to eliminate undesirable color casts in your images.

Handles: Points on the gradation curve or cropping area which you can move by dragging them with the mouse.

Highlight: The brightness value above which all pixels are considered white.

Icon: A picture appearing on the computer screen to represent a file, folder, piece of hardware or a function.

Image Capture: The full process of scanning an image, applying the color table, and storing the image file on disk.

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Image File: A TIFF file created by the Phase One application after you take an image capture or preview.

Interpolation: The process of reducing or increasing the size of an image.

Look-up Table: A group of numbers used to manipulate pixel values. It contains a factor for each pixel level possible in the image, so when a single pixel is read, the factor for that pixel is found in the look-up table, the number is applied (added, subtracted, multiplied, divided), and the modified pixel value is saved. (see also the Glossary entry on Color Table).

Menu Bar: A bar located at the top of the computer screen. It contains a line of pull down menu titles and icons.

Parameter: A numeric value which describes some aspect of an object or process, such as height, width, speed, etc.

Pixel: The smallest picture unit , having a single brightness value made up of three color components. An image is made of thousands of pixels set out in a rectangular array.

Preview: A low resolution shot taken to check the image and create the color table for the final shot.

Resolution: Refers to the number of pixels per unit length in an image. High resolution images contain more pixels than low resolution images for the same size image, and are therefore able to produce more detailed images.

RGB: Stands for Red, Green, and Blue. This refers to the three colors which are mixed at varying strengths to produce all shades of color possible, for example on the computer screen. They are the primary colors of the additive light model.

Scan: The process of moving the linear CCD array across the exposure area to capture a full two dimensional image.

Shadow: The brightness value below which all pixels are considered black.

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Sharpening: A mathematical operation on an image which increases contrasts at edges and brings out textures in your pictures.

Shadow: The brightness value below which all pixels are considered black.

Shot: A single picture scanned, processed, and stored. Also called a take.

Take: A single picture scanned, processed, and stored, sometimes called a shot.

TIFF or .tif file: Stands for Tagged Image File format. This is a standard format for storing image data. It is understood by most digital imaging software.

Target Colors: A target color is a highlight or a shadow point. The brightness value of a target colour need not be pure black or white. Target color are generally used in printing processes where a margin is allowed when printing inks close to black and white.

User Interface: The interactive graphics you see on your computer screen, including the main window, pull down menus and pop-up windows and menus. The user interface shows you what the computer is doing in a way that is easy for you to understand, and translates your instructions into a form that the computer can understand.

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