

User Guide

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PHASE ONE

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1 Macintosh Getting Started

The Phase One camera back has been designed for ease of installation and use. There are just a few easy steps to follow, from unpacking the Phase One camera back to developing the first shot.

- Connect hardware, install software
- Launch the Capture One application
- Determine the exposure and shoot
- Select images to develop from Capture Collection
- Gray Balance
- Crop desired image
- Adjust Gradation Curve/Tonal Range
- Set any desired Color Management, naming, etc.
- Click Develop

The following sections have all of the basic information you need for getting started, step by step.

Hardware Set-up

The Phase One camera back connects to the computer via an IEEE 1394 connection. This new, extremely fast connection does not have many of the limitations of the SCSI technology used in previous digital cameras. Many of the problems related to SCSI such as setting ID numbers, termination, and not being able to "hot-plug" (having to shut down before unplugging the device) are nonexistent with 1394. The cable length can be extended using the Phase One Power Conditioners to move the camera far from the computer.

Install The PCI IEEE 1394 Card (if required)

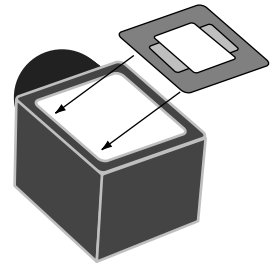
While the owner's manual for the particular computer should be consulted, the basic steps to installing the card are as follows:

- 1) Shut down and unplug the computer.
- 2) Remove the cover, exposing the motherboard.
- 3) Choose an empty PCI slot and remove the screw and cover.
- 4) Gently place the card into the slot with the 1394 connectors facing through the opening.
- 5) Press straight down and slightly rock the card until it is firmly seated in the slot.
- 6) Replace the screw to hold the card in place.
- 7) Replace the case, restart the computer.

Photographic Equipment Set-up

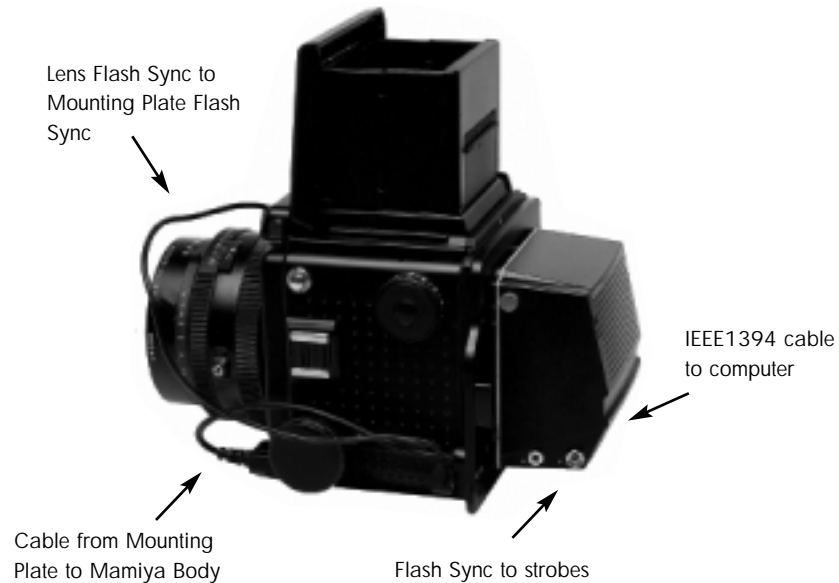
In addition to setting up the computer, the camera must be prepared for working with the Phase One camera back. This involves a few simple steps:

- 1) A Ground Glass Mask is included. This must be installed in the viewfinder to ensure correct framing. Remove the camera viewfinder and focusing screen (refer to the camera users manual for detailed instructions). Insert the Ground Glass Mask and replace the viewing screen and the viewfinder.



- 2) If a Mamiya RZ67 Pro II is used, connect the mounting plate to the camera and then connect the cable from the mounting plate to the connector on the front of the Mamiya. Be sure that the cable is connected and locked properly; the latching mechanism will be on the bottom.





Cable Connections for the Mamiya RZ67 Pro II

3) Connect the Phase One camera back to the camera or mounting plate. Be sure that the back is firmly connected to the camera before releasing! The small screw on the top of the Phase One camera back can be tightened with the supplied screwdriver to prevent it from being accidentally removed.

4) Connect the included Sync Cable from the lens' flash sync to either the connector on the Phase One camera back marked "C" or the Mamiya Mounting plate.

5) If a motorized camera is used, connect the included Motor Cable to the connector on the right side of the back, marked "M".

6) If flash is used, connect the Flash Sync Cable (not included) from the strobes to the connector on the right side of the camera back, marked "F".

7) Finally, connect one end of the included IEEE 1394 cable to any one of the empty ports on the newly installed card, or the built-in port. Connect the other end to the back of the Phase One camera back. These cables can only be inserted one way and may require a little pressure to insert.

8) Please note: For the Mamiya RZ the camera must be set to take multiple exposures in order to use the Phase One camera back. The multiple exposure selector (M) is combined with the film back revolve switch (R).



Updating the Camera Software

Phase One generally recommends that updating the camera back with the newest camera software in order to benefit from the latest stability and performance improvements. Information concerning the installed camera software version can be accessed in the pull-down menu Camera/Info. The Camera Updater program will indicate if the latest camera software is installed. If it is not installed, it automatically downloads the camera software into the camera. The Camera Updater is located on the CD-ROM under Goodies/Camera Updater/"Camera Updater".

Before Running The Camera Updater

Shut down all programs including the Capture One application. Remember to disconnect all third party FireWire (IEEE 1394) devices that were NOT delivered by Phase One

The Camera Updater must not be interrupted when running as the camera back can lose the camera software. Clear indications of the loss of camera software are that both the green and red LEDs are lit and the text "N/A" appears under Primary Code and Secondary Code in the Camera Updater program. In this case the Camera Updater must be run again.

Installing The Camera Software/Firmware

Run the Camera Updater Software and follow the instructions displayed on the screen. Only certain Macintosh computers can be used for updating the camera back.

LightPhase Unit Only:**Serial Number BB021132 or higher**

Any Macintosh can be used in order to update the LightPhase camera software.

All Other Serial Numbers

To update the LightPhase camera software use a Power Mac, not faster than a G3 350 MHz, with virtual memory set to "on". Virtual memory is set in Control Panels/Memory. Remember to restart the Mac after changing the memory settings. Once the camera update has been successfully executed, the original memory settings can be restored. Please note: As soon as the LightPhase camera has been updated it can once again be connected to a Power Mac faster than a G3 350MHz.

Other Photographic Equipment

While the Phase One camera back has been made as compatible as possible with photographic equipment, there are a few issues to be aware of:

1) When using the Phase One camera back with a Hasselblad 555ELD, the setting on the front of the Hasselblad needs to be in the "Film" position (Phase One H 20 works in „Dig" position as well).

2) When using the Phase One camera back on a view camera use the "Two Shot Mode". This means that the shutter release is activated twice. To shoot an image, release the shutter, reset it, and shoot another frame. The first shot wakes the camera up, and the second is the actual exposure. Alternatively pressing the "Capture" button in the preview window will wake the camera up and then the shutter can be fired once to take a photo.

The camera will remain "awake" for 20 seconds or until the next capture.

3) When used on a Mamiya RZ67 Pro II the selector on the right side of the camera body must be in the "M" position.

4) The Phase One camera back fully conforms to the ISO 10330 Standard for Photographic Strobe Systems; unfortunately not all strobe manufacturers comply with this standard. Check with the manufacturer of your strobe system to prevent damage to the Phase One camera back.

5) The "Strobe Equipment" section of this guide provides a list of devices that have been tested.

LED Indicators Lights

On the back of the Phase One camera back are two sets of LED indicator lights. A red and green light on the left and a red and green light on the right. The left and right pairs are identical and should always display the same thing. These lights indicate the camera back status. The list below describes what the status lights indicate:

Green Lights Steadily On

This means that the Phase One camera back is receiving power and is ready to capture images.

Green Lights Flickering

After capturing an image the green lights will flicker on and off while transferring the image to the computer.

Both Red and Green Lights Steadily On

If the camera is improperly shut down or an error occurs both sets of lights may stay lit. If this happens, quit the Capture One software, unplug the camera back and wait ten seconds, then replugin the camera.

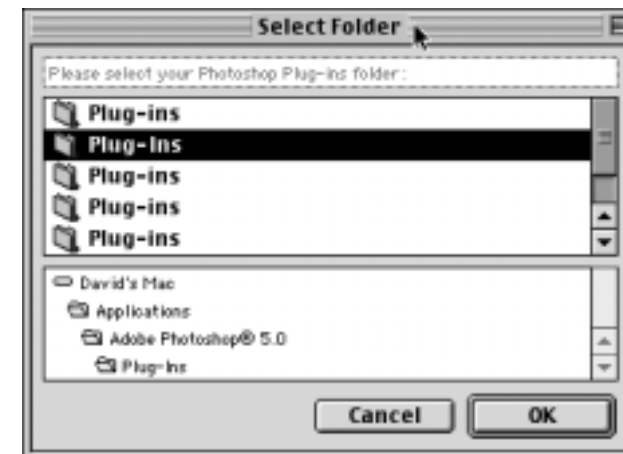
No Lights On

If the camera is properly plugged in and receiving power and there are no lights on, the camera back has shut down or may be damaged. Unplug all connectors, inspect all cables for damage, examine the IEEE 1394 card (if in use) for proper installation and reconnect everything. If the problem persists, contact your Phase One dealer for assistance.

2 Install the Software

After the computer is restarted, the software that will control the IEEE 1394 card must be installed, as well as the software for the Phase One camera back. We have included one easy-to-use installer that will place all of the necessary software on the computer. Follow these steps to install the software.

- 1) Place the included CD-ROM into the CD drive.
- 2) Double-click the item marked "Install Capture One".
- 3) Read the software license, and, if in agreement, click the "Agree" button to continue with the installation. Otherwise, click "Cancel" to quit the installation.
- 4) Select the language version you wish to install when asked.
- 5) When prompted for the Adobe® Photoshop® "Plug-Ins" folder, choose the correct folder from the list. Be sure to choose the Photoshop folder, as there may be many different plug-in folders on the hard disk. If installation is made on a non-English Macintosh, the installer may not be able to locate the Photoshop® plug-ins folder, so be sure to select the proper plug-in location.



6) Follow the on-screen prompts. When the installation is completed, restart the computer.

Once the software is installed plug the USB dongle into the USB port on the keyboard. Please do not run Mac OS 9.x while plugging in the dongle. If the dongle is not connected you are unable to develop/process images.

Installed Items

The installer creates a folder on your hard disk called "Capture One." This folder contains the application as well as several sub-folders. They are:

Captures

As photographs are taken with the Phase One camera back, this is the default location where raw capture files are stored. Also, you may organize your raw capture files by creating new folder on the harddrive.

Previews

The software application automatically creates a low resolution (approximately 1MB) preview image to use for color and tonal adjustments. All preview files are stored in the "Previews" folder. If any files are deleted from here the program will automatically generate new previews the next time the Capture One software is started.

Images

By default developed images will be placed in this folder. Again, the preferences can be used to change where developed files will be placed.

Goodies

The "Goodies" folder holds aliases to files on the install disk as well as other related files.

Using the Phase One Camera Back

Phase One has made using the Phase One camera back as close to using film as digital photography can be. The first step to using the Phase One camera back is to start the application. Double-click the folder called "Capture One Application" on the hard drive and then double-click the "Capture One" icon. This will start the program that controls the camera back. After a few seconds the software will make a small "click" sound and the camera will beep. These two sounds indicate that everything is ready.

In practice the Phase One camera back can now take pictures. However before shooting it is a good idea to ensure that the software settings are optimal. This will ensure the best possible image quality and workflow.

3 Software Set-up

At this point it may be a good idea to set up Photoshop and the system for Color Management. A brief guide to Color Management and Profiles is provided in the Tools and Preferences sections of this manual.

Taking Photographs

The camera back is designed for ease of use and high performance. First time digital photographers, as well as experienced digital photographers, can immediately begin taking images of excellent quality. The Phase One camera back can capture one image every 1.5 seconds/ 3 seconds for Phase One H 20. The camera makes a small “beep” when it is ready to capture the next image. If an attempt is made to shoot too quickly the camera will still respond, but images will not be recorded.

Technical Note

The camera has a choice of two sensitivities: 50 ISO or 100 ISO. As a rule, when working with long exposures, an exposure based upon 50 ISO at 16 seconds will yield a better quality image than an exposure based upon 100 ISO at 8 seconds. ISO values are selected in the Camera Settings dialogue box. Settings can only be changed when the camera is connected to a computer. Take a light reading. Just as with traditional film photography, exposure is critical. Because of the wide dynamic range (similar to the “exposure latitude” of film) the application can compensate for a certain amount of underexposure, but not overexposure. Once an image is overexposed, there is no detail for the software to work with and no hope of correcting the image. For this reason it is important never to unintentionally overexpose. The software offers several tools to help evaluate the exposure of an image. Compatible shutter speeds range from 16 seconds to faster than 1/1000 of a second. For general strobe photography it is recommended to use an exposure speed between 1/60 seconds and 1/500 seconds. Finally, select the desired aperture.

Composition Mode

Composition mode is very useful when setting up and adjusting the lighting and framing, prior to shooting. It is activated from the Camera pull-down menu. Warning triangles appear, to indicate that composition mode is activated. Composition mode only saves the last captured image, which means no deletion of unwanted capture files.

Selecting Film Curves

A film curve can be compared to a gradation curve. It shows how light values, recorded by the CCD, will be converted to light values in the image data file. Four different film curves can be selected in the application. Before each photo session, select the correct film curve for the type of work you are doing.

Film standard: A default film curve, which can be applied for general purpose photography.

Film extra shadow: A curve similar to the Film standard, with increased shadow detail.

Film outdoor: A film curve suitable for high contrast outdoor photography, with increased highlight detail. 100 ISO only.

Linear response: Film curve that gives exact linear response. It is especially useful for scientific photography with very low contrast scenes. This film curve should be used with care, as there is an inherent risk of over exposure in highlight areas.

Selecting Landscape or Portrait Orientation

The Phase One camera back can be mounted on a wide range of professional medium format cameras, technical cameras (also referred to as view cameras) and other camera systems where image orientation is not automatically detected. Here camera orientation must be determined manually in the Capture One Software. Select the desired camera orientation in the Camera Settings dialogue box. Images will automatically be rotated to landscape or portrait orientation.

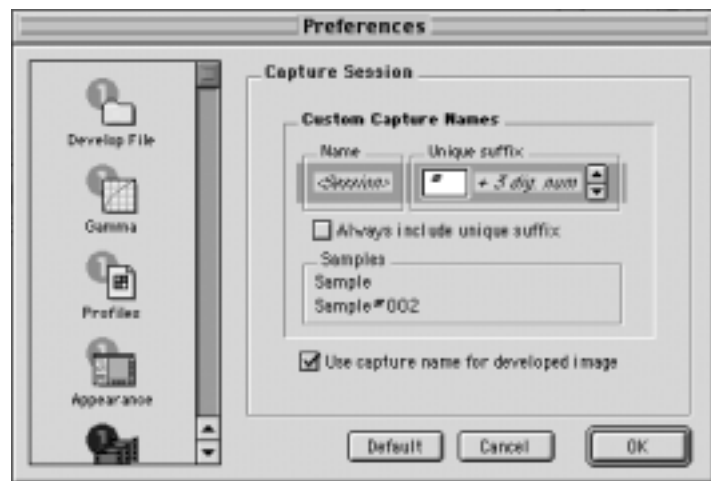
Organizing Images

Creating folders to hold captures and choosing session names, before or during shooting, will save time during the processing stage. If, for instance, you have a photo session of a model with different colored outfits, separate folders can be created in advance. When shooting, just click the Capture Folder button in the Capture Collection, and select one of the folders for image storage. Organizing files as you are shooting will save time later when you want to print a contact sheet or archive files. Any number of capture collections can be added. Click on the “+ folder” icon in the Capture Collection window to add a new collection. Click on the “x folder” icon to remove a collection. Files can be moved from one collection to another, or to the Trash, by dragging and dropping them with the mouse.



14 items, 4.02 GB available	
Name	Date Modified
▼ Captures	Today, 15:12
▼ Fashion	Today, 15:14
▶ Green outfit	Today, 15:14
▶ Red outfit	Today, 15:14
▼ Outdoor	Today, 15:14
▶ Cars	Today, 15:14
Film Curves	Sat, Dec 15, 2001, 13:25
▶ Goodies	Sat, Dec 15, 2001, 13:25
▶ Images	Fri, Dec 21, 2001, 13:44

Files can also be named and numbered automatically. Enter a name in the "Session" field of the Capture Collection window. All subsequent captures will now be named accordingly. To automatically add a number to each capture, open the Capture Session Preferences window and enter a number in the "Unique suffix" field. There is a maximum of six digits. Check the box next to "Always include unique suffix" and a sample of the naming and numbering will appear. The capture name is also used for the developed images unless the box is unchecked.

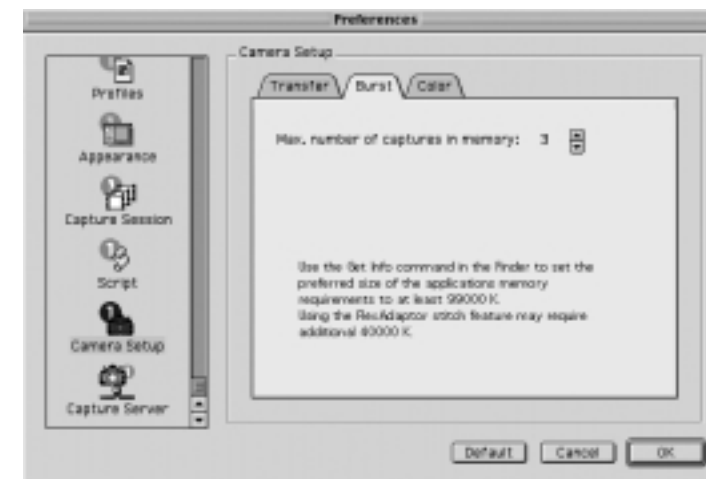


Workflow Optimization

If your Mac is connected to a network, capture collections can be created on another Mac. Using a network to improve workflow allows one photographer to concentrate on shooting whilst another photographer edits and develops the session.

To fully exploit the benefits of workflow networking, and the RAM installed in the host computer, an adjustment must be made to memory allocation. Under Camera set-up, in the Preferences window, the Burst capacity can be increased (see the technical note below). The maximum number of captures (Burst) that can be stored in short-term memory is limited by the amount of RAM installed in the Mac. More RAM can be automatically allocated to the Capture One software by checking the box for memory requirement.

Please note that the software must be restarted before any changes take effect.



Technical Note

Capture files are stored in the RAM before being moved to the capture collection folder on the hard disk or the Capture Server. Above the Capture button, in the Preview window, is a row of green lamps. These lamps indicate the number of RAM buffers ready to receive a new capture file. One green lamp indicates sufficient RAM for one capture. When a buffer is busy the green lamp turns yellow.

To optimize the capture rate, there are four factors to consider:

- The image transfer time
- The number of RAM buffers available
- Host computer speed
- Preview generation

Image Transfer Time

The image transfer time is set to 1.5 sec. as default (Preferences/Camera Set-up/Transfer tab). This is the time it takes to transfer images from the back to the host computer.

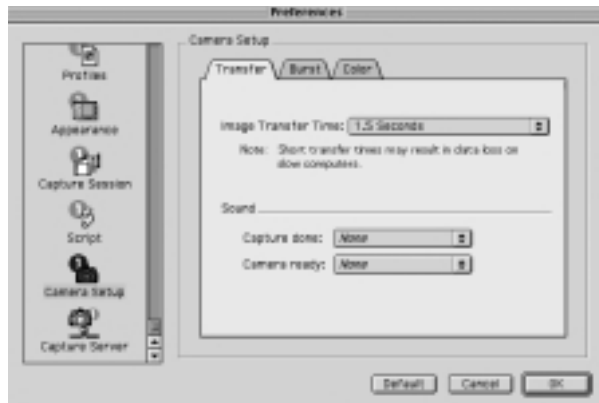


Image transfer time controls the capture rate. Newer Macintosh computers, which include fast OHCI FireWire ports, can reduce image transfer times to 1.0 second. However, if data dropout is experienced, please increase the image transfer time.

Maximum Number of RAM Capture Buffers

As described above, before captures are transferred to the capture collection folder on the hard disk, they are stored in a RAM buffer. If a hard disk is relatively slow, a high capture rate can be maintained, for a limited number of captures, by increasing the maximum number of RAM capture buffers.

With older Macintosh computers the maximum number of RAM capture buffers is the second most important capture rate controller.

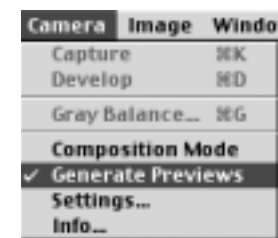
Host Computer Speed

The speed of the host computer influences the capture rate. If the capture collection folder is stored on a slow hard drive, increasing the maximum number of RAM buffers will only improve burst performance. To capture images at full speed over a longer period of time a faster hard drive is needed (min. 20MB/sec.)

Preview Generation

Preview generation is time consuming for the computer. Viewing previews after a session allows the computer to work faster. Enter the Camera Menu and select Generate Previews to uncheck it (hide the check mark). To enable preview generation select Generate Previews again and the check mark becomes visible. To generate the missing previews click on the Refresh button in the capture collection window (a folder shown with a "*").

Disabling preview generation on older Macintosh computers enhances capture rates, whereas as on newer models the capture rate difference is barely noticeable.



4 Editing and Selecting Images

Editing

After taking photographs, the next step in the process is to choose which images to keep and develop. Select "Capture Collection" from the "Window" menu at the top of the screen. ("Command-2").

The Capture Collection is similar to a contact sheet. It displays thumbnail images of all of the photos taken with the Phase One camera back.

Windows	Help
Zoom In	⌘E
Zoom Out	⌘R
Zoom 1:1	⌘0
Hide Floating Windows	⌘H
Preview Window	⌘1
Capture Collection	⌘2

Deleting

To delete an image, simply click on the thumbnail to select it. A blue box will appear around the image to show that it is selected. Click the "Trash Can" icon at the top of the Capture Collection window.

Multiple images can be selected by clicking on the first image thumbnail, and then "Shift-clicking" on any other images you wish to select (hold down the "shift" button on the keyboard and click on the next image). Each image will have a blue box around it to show that it is selected. After selecting all of the images to be deleted, click the Trash Can icon to remove them.



A deleted image is moved to the "Trash" folder of the Capture Collection. If an image is mistakenly deleted it can be restored to its original location by clicking on the Trash can icon marked with a red "X".

The trash is emptied by selecting the images in the Trash folder and clicking on the Trash Can icon. Deleted images are stored in the Mac's "Trash Can". They can be manually deleted from the Capture One application (as described above) or deleted via the Special menu in the Macintosh Finder.

Previewing

While the Capture Collection is a good place to judge images quickly, the Preview Window will provide a much better view of an image. To preview an image, choose one of the images from the Capture Collection and double-click it.

The thumbnail will then open in the larger Preview Window. The Preview Window provides improved image evaluation, as well as tools for adjustment of exposure, contrast, sharpness and color of the photo.

To move a new image into the Preview Window, return to the Capture Collection (remember the keyboard shortcut "Command -2") and double-click a new image. The Capture Navigator tool can also be used to preview images.

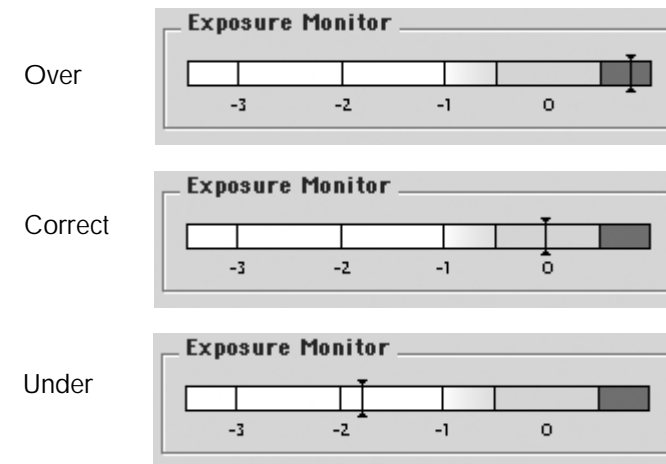
The Preview Window in Detail

The Preview Window is divided into several sections to help evaluate and control the development of images. The file name of the current preview is shown at the top of the Preview Window for easy reference. On the right of the window, at the top, is a row of buttons used to access the tools that control the image. These tools will be covered individually later in this guide. Below the tools section is a display providing information on exposure, development, color and gray balancing. A description of their function and use follows below.

Exposure Monitor

The Exposure Monitor is located below the Tools. This is a basic graphical gauge of the overall exposure of the image in the Preview Window. If the indicator line is in the green area, the exposure is considered acceptable. If the pointer is in the red area it is overexposed. If it is in the white area it is underexposed.

The Phase One camera back is sensitive to overexposure. Avoid shooting images when the indicator line is in the red area. Here are examples of what the meter will look like with different exposures:

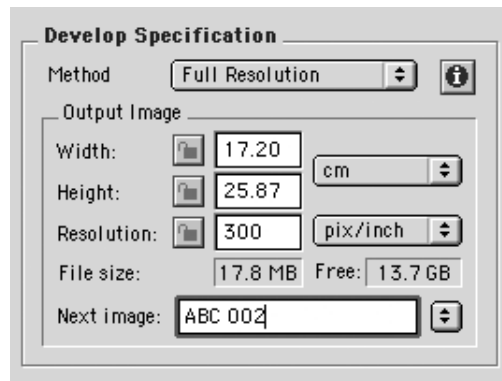


Develop Specification

This section of the Capture One application is used to control the final output size of the image to be developed. A full image, with no cropping will read approximately 26x17 cm (10x7 inches) at 300 pixels (dots) per inch. The file size of this is approximately 18MB, as listed in the "File Size" section. If a crop is made, the output size of the cropped area will be listed in the Width, Height and Resolution fields. If you know what size the image will be in its final printed form, you can enter the measurements here and save the resizing step later. By adjusting the size of the image at the developing stage you save time and get a higher quality final image, as all changes will be done at 16 bits/channel.

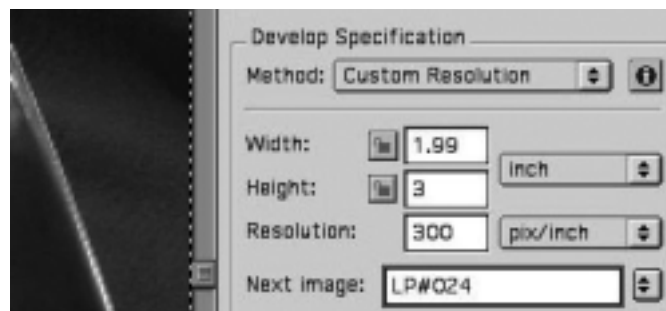
For easy reference, the amount of free hard disk space on the computer is displayed next to the file size. Be sure that there is always sufficient space on the hard disk.

Each image can be named in the "Next image:" field. Naming your images will make it easy for you to find and identify the photos later. If no name is assigned, the software application will pick a name for you based on the preferences you have set in the "Name" tab of the "Develop File" section.



Resizing Images

If you wish to resize a capture file then select 'Custom Resolution' instead of 'Full Resolution'. Now apply a crop to the entire image and change its size and/or resolution. Please note that in order to guarantee the best image quality Phase One recommends that you check your images in Adobe Photoshop prior to output.



Color Info

One of the most important displays of the Preview Window is the "Color Info" window. This panel shows the individual **R**ed, **G**reen and **B**lue channel information (or **C**yan, **M**agenta, **Y**ellow and **B**lack. CMYK where K stands for key). With film photography the evaluation of final exposure and development levels is a manual, and often subjective, process. With digital photography accurate evaluation is made using the Color Info picker. By pointing the on-screen cursor at any point in the image you can read the precise values of that point in the Color Info window.

Knowing the precise values of any part of the image is useful when full control of the printing process is needed. As printers, and printing processes, have individual characteristics, exposure levels can be adjusted to ensure a predictable and perfect result.

Values in the Color Info window are represented as a numerical scale from 0 to 255. A completely black pixel is represented as 0, a completely white pixel as 255. Again, it is important not to overexpose an image; if any of the Red, Green or Blue (RGB) values approach overexposure (a value of 255) adjust the exposure level. Keep image highlights (areas that should record as white with detail, not as specular reflection) between 225 to 250.

Gray Balancing

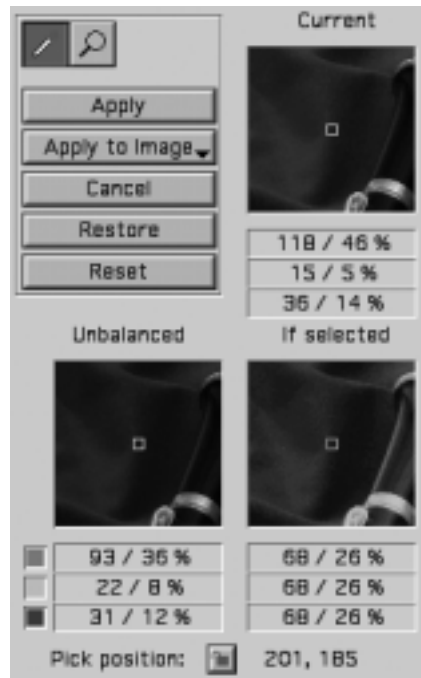
With film photography color bias in light sources, or film emulsion, can be corrected using color correction filters. With the Phase One camera back we correct color bias by using the gray balance. Unlike many other digital camera systems Phase One has made the gray balance feature easy to use.

Simply follow these steps:

1) Open the image to be corrected in the Preview Window.

2) Choose "Gray Balance" from the Camera menu.

3) Click the pointer on an area, which must be neutral gray in the final image. If the image contains no white or gray, repeat the shot and include something such as the Kodak Q14 Step Wedge.



Select the step with an RGB value of between 200 and 225, this will yield a well-balanced image.

4) Click "Apply". The gray balance will now be applied to all consecutive images.

Other gray balancing options available to ensure flexibility and to improve workflow. They are :

Apply to Image

When selected, the chosen gray balance will be applied to the current image and all subsequent images, until a new gray balance is set.

Current Capture

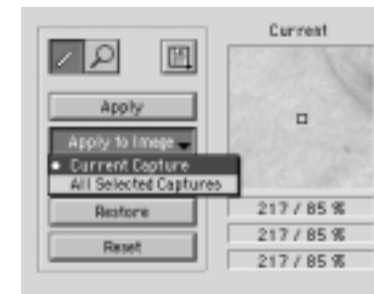
This only changes the gray balance of the current capture. All subsequent captures retain the gray balance set under Apply to Image.

All Selected Captures

Include a gray card in the first shot, and apply the gray balance setting to all other selected images.

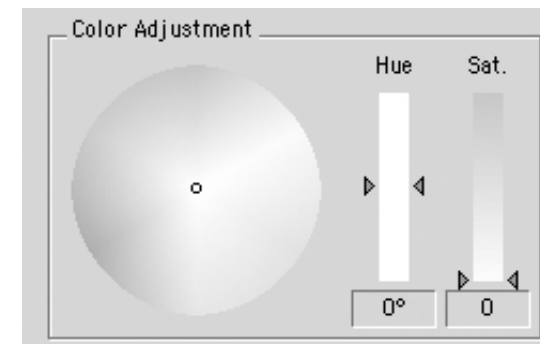
To use the „All Selected Captures“ option, first open the image with the step wedge in the Preview Window. Then return to the Capture Collection and select all the other images to be balanced. Now return to the Preview Window and select "Gray Balance" from the "Camera" menu.

Finally click on the step wedge and choose "All Selected Captures" from the pop-up menu.



Color Adjustment

Individual gray balance settings can be applied, and saved, to meet the requirements of a particular job, or to obtain particular effects such as evening or morning light.



Finally there are three options designed to help in the gray balancing process.

Restore

All adjustments to the gray balance are cancelled and previously defined values are used.

Reset

All color balancing is cancelled.

Pick Position

With the gray balancing tool active, hold down the command key. A lock is now visible next to the gray balancing tool. Click on a neutral area in the image. The exact position is now locked and recorded next to the Pick Position button. To release the tool click on the Pick Position button.

Developing Images

Images captured by the Phase One camera back are stored as raw calibrated files. They must be processed by the Capture One before they can be used in any other program. The raw files can be archived and processed at a later time, or processed immediately. Archiving raw files saves space and allows access to raw, un-manipulated, 16 bit data.

Using raw files makes it possible to process one single image for various purposes; a high resolution color image for a printed page, a low resolution image for a web site and a third copy to be used in black and white.

To process an image, it first must be opened in the preview window. If you think of the development stage as similar to printing in the darkroom, it may help. After loading the image into the Preview Window the first step will be to gray balance and crop the image.

Then adjust the brightness, contrast and color. Finally the image is developed by clicking on the Develop button.

On average it should take between 40 seconds and 1.5 minutes to develop an image. Development speed is entirely dependent on speed of the computer.

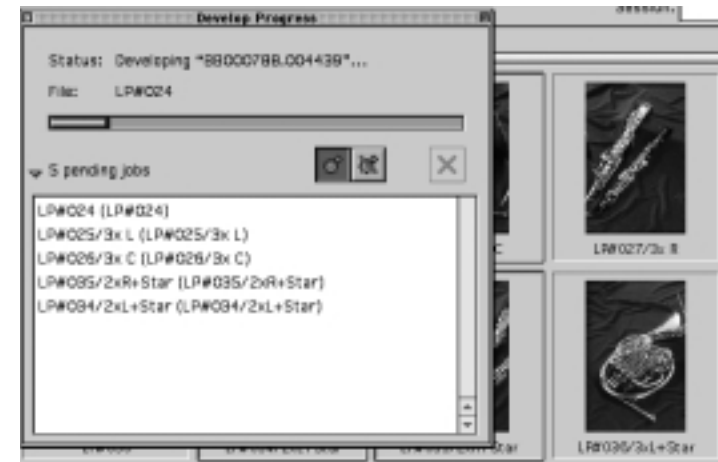
There are two ways to develop images.

Method One: Individual Control of Each Image

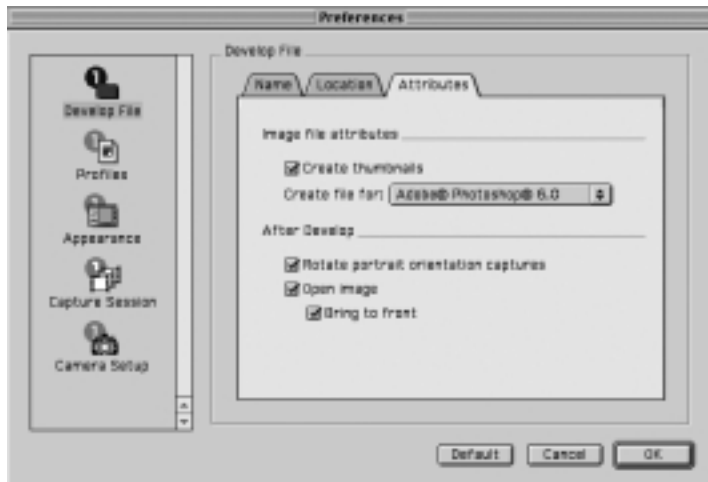
Open an image in the Preview Window. Name, crop and adjust the color settings as desired. Then click "Develop". Repeat these steps with all the images to be developed. Image development is performed in the background and will not affect the speed of the computer while shooting or performing other tasks.

Method Two: Batch Development

To develop multiple images to the same specifications select them in the Capture Collection and click the "Develop" button.



It is possible to open developed files in Photoshop, or another application, automatically. Open Preferences/Develop File/Attributes to set this option.



Export Previews

The export preview function allows generation of low resolution previews of the captured images. These previews can be sent to the customer for approval or used in image databases, on web sites or as contact sheets.

Select the capture file you wish to export in the Capture Collection. Then go to the Image menu and select 'Export Previews' and the Export Previews dialogue box appears.



The dialogue box provides you with the following options:

File Format

Choose the file format you prefer to work with - TIFF, JPEG, BMP, PICT etc. If JPEG is selected then please define the level of compression in the Quality field. 'Maximum' compression provides you with the smallest file and the fewest image details and vice versa.



Image Size

The Image Size field allows image resizing in percentages or pixels. 50% is the default size/resolution of a preview. The 'Apply Sharpening' box enables/disables the sharpening settings from the Capture One Software or from third party applications. The 'Use image crop' box is checked if you only wish to export the image crop.

Apply Color Management

The color management settings in export previews are independent of the application's color management set-up. However, it is recommended that you choose the camera profile that matches the image's capture conditions e.g. flash, tungsten etc.

Destination Folder

The Destination Folder is where you organize the workflow. You choose your own destination folder. If no destination folder is selected then a default folder called 'Exported Previews' is created inside the capture collection folder.

Name Postfix

In this field you can add unique image names/ID. To process the previews click on the 'Export' button. All settings in the dialogue box are stored as default settings and can be reused or changed at any time.

Automatic Image Stitching

Automatic image stitching allows stitching of two or three overlapping capture files. This fully automatic feature makes it extremely easy to stitch images captured by the Phase One FlexAdaptor together, and is a great alternative to the Adobe Photoshop actions. Automatic stitching can also be used for other stitching purposes.

- Capture two or three images with the FlexAdaptor
- Select the images/capture files you wish to stitch together in the Capture Collection (Use the Shift key)
- Press the 'FlexAdaptor Stitch Developer' button.



Now you have the following options:

Change Image Order

If you wish to change the order of the capture files, then click on the grey arrows displayed at the top of the capture files.

Rename Image

Enter the name of the image in the 'Image title' field. If no name is entered the stitched image is named after the first capture file that was selected in the Capture Collection.

Select Overlap

The Overlap pull-down box relates to the various capture modes the FlexAdaptor offers.

Select 'Narrow', if images were captured with a narrow overlap (about 100 pixels):

- LightPhase/Phase One H 10 two-shot mode (yellow dots) or three-shot mode (white dots)
- Phase One H 20 two shot mode (green dots)

Select 'Wide' if images were captured with a wide overlap (about 1,500 pixels):

- Phase One H 20 two-shot mode (yellow dots)

Select 'Landscape' if images were captured in landscape mode:

- LightPhase/Phase One H 10 two-shot mode (yellow dots)

Enlarge Preview Window

Press the 'Expand stitch preview area' button to the right to enlarge the preview window.

Process Image

Initiate the processing by pressing the 'Develop' button. The selected capture files are now stitched together, and can be opened as a TIFF file in Adobe Photoshop or other image editors afterwards.

Apple Scripting

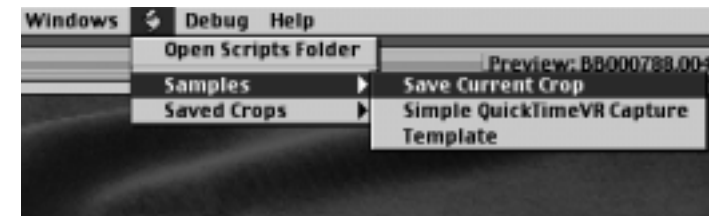
Via Apple scripting you can customize the Capture One user interface. Apple scripting is an easy-to-learn programming language for Macintosh systems, which can be used to automate common software and computer tasks. The Capture One application supports a range of Apple scripting commands, and allows you to do simple scripts to e.g. save crops, capture images for QuickTime VR recordings, export previews etc. For further information about how to use Apple scripting please visit Apple's web site: www.apple.com/applescript

In order to find out which scripting commands the Capture One application supports drop the application on the AppleScript 'Script Editor'. A directory will appear on the monitor including all the scripting commands available for the Capture One software.

Once, you have created your own scripts you can add them to 'Preferences/Script', and the application will run them automatically. For further information please confer with the 'Script menu/Samples/Template'.

Save Current Crop

The Capture One application includes one scripting feature, which is relatively easy to use: 'Save Current Crop'. This feature is especially useful if you work with predefined image crops.

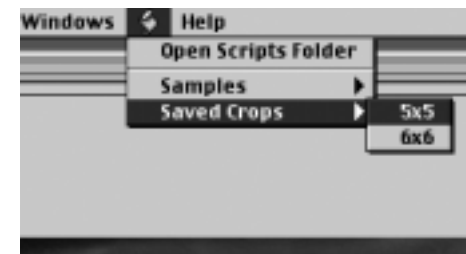


- Use the crop tool to define the image crop
- Go to the Script menu/Samples
- Select 'Save Current Crop'
- Name the crop (e.g. 5x5 inch)

The crop is now saved in the Script folder, which is located under the Capture One application.

Reuse Saved Crop

The saved crops can be accessed in the Script menu/Saved Crops. Select the crop you wish to use and it will be applied to the image you are currently working on.



5 Tools

Many of the tools in the Capture One application act in much the same way as the tools of popular image editing applications such as Adobe Photoshop. Many of these tools actually come from the traditional world; the cropping tool is the first example of this, mimicking the cropping “L’s” used by artists and photographers.

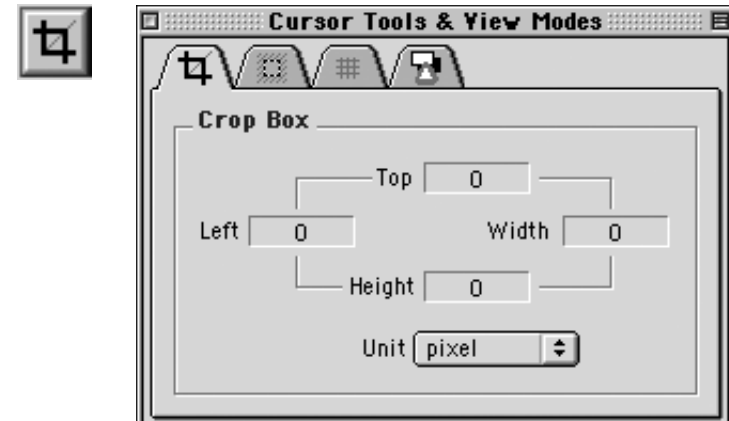
Cropping

Select the Crop tool (by clicking once on the tool button) from the upper right side of the Preview Window.

Move the on-screen pointer to the image to be cropped. Click and drag the mouse so that a box is drawn surrounding the area of the image to be kept. Then release the mouse button.

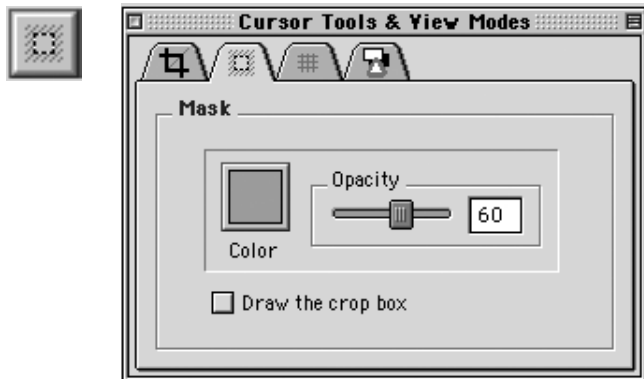
The rectangular box, which now surrounds part of the image, can be adjusted in size and position. There are points at the corners of this box that can be clicked and dragged, to change size and position.

Double-clicking this tool allows you to set the crop box size and units.



Crop Mask Tool

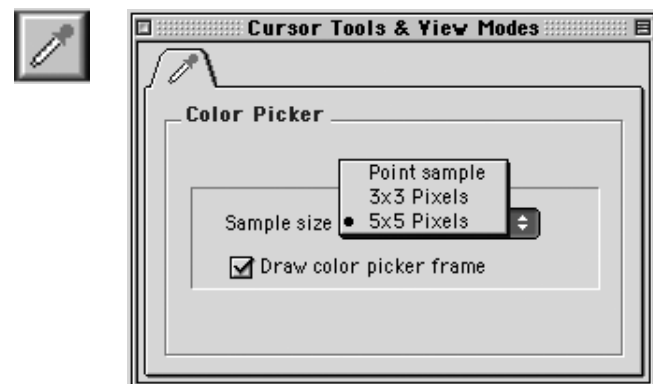
When turned on, the Crop Mask tool will mask the area of the preview image that is outside the selected crop area. Double-clicking this tool allows you to set the color and opacity of the crop mask. This tool is a useful feature when showing images on-screen, as the cropped area is clearly shown.



Eyedropper

The Eyedropper tool is used to read the RGB or CMYK values of a particular area of an image. Change the sample size by double-clicking the tool icon. The default size is a 5x5 pixel area.

This does not need to be changed, unless a reading from a smaller area is required.



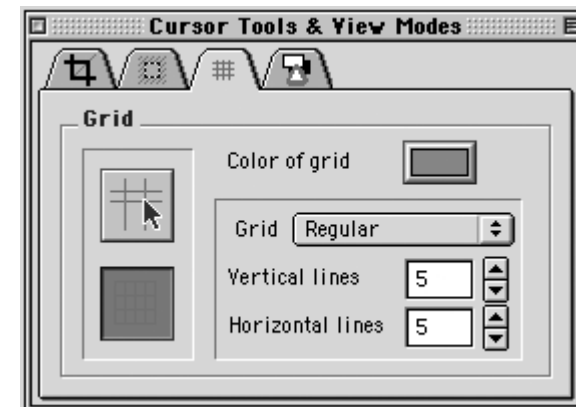
Zoom Tool

Select the Zoom tool and click on the preview image to zoom in. Use option-click (Alt key) to zoom out. Remember, the preview image is only a low-resolution image and will quickly pixelated when enlarged.



Grid Tool

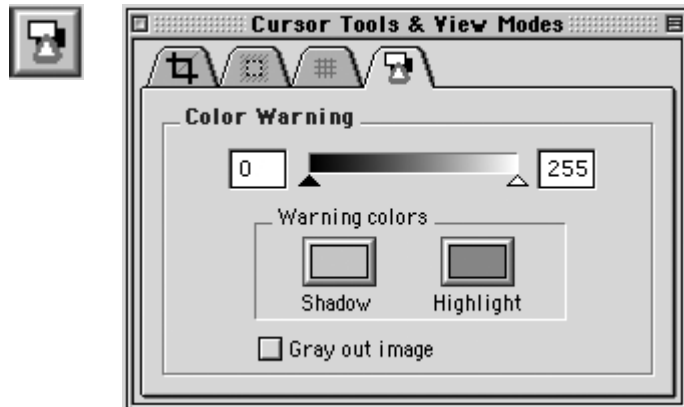
Two different grids can be used to help align and measure the objects in images. Click the Grid tool to turn the grid "on". Double-click the tool to toggle between the two types of grids and to set different grid options.



Exposure Warning Tool

This tool quickly shows which areas of the image are either over or under exposed. Much like Photoshop's "Gamut Warning" tool, when the "Exposure Warning Tool" is activated a colored mask will be applied to the image showing which areas of the image are above or below a set exposure value. Double-click the tool icon to set the over and under exposure values and to change the highlight colors.

In general, if the exposure warning is shown over a large area of the selected image, it indicates that the exposure level may need to be adjusted. Highlight areas are more critical than the shadows. Preserve highlight detail by not allowing values greater than 240.



Tonal Range/Gradation Curve/Film Curve

Clicking on the Tonal Range/Gradation Curve/Film Curve button opens the window to the Tonal Range tool. Switch back and forth between Tonal Range, Gradation Curve and Film Curve by using the tabs at the top of the window.



The Tonal Range and Gradation tools act much like the Levels and Curves tools in Photoshop. The Tonal Range pane of the window shows a Histogram, a graphical representation of the brightness of the pixels in the image. The darker areas of an image are made darker by sliding the dark triangle to the right. The lighter parts of an image are made lighter by sliding the white triangle to the left. This compresses the tonal range of an image, and either lightens or darkens the highlights and shadows.

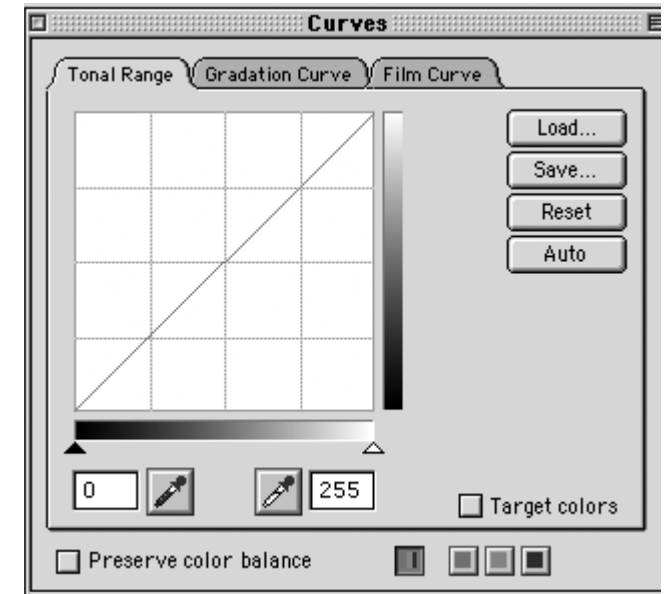
Further control of the tonal range is possible by unchecking the "Preserve Color Balance" box. Each color channel can then be adjusted individually.

A particular color is defined for the lightest, or darkest, part of the image by checking the "Target Colors" box.

This reveals a sliding scale and two color selection buttons.

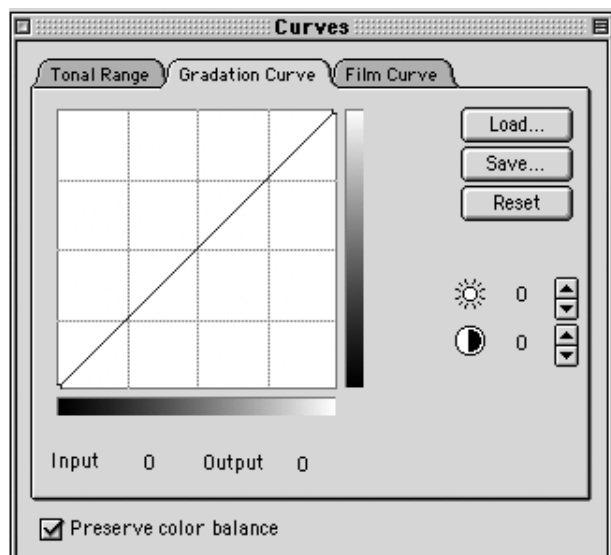
A single click on the light, or dark, color selection buttons

enables selection of a target color. The sliding scale enables adjustment of color saturation.



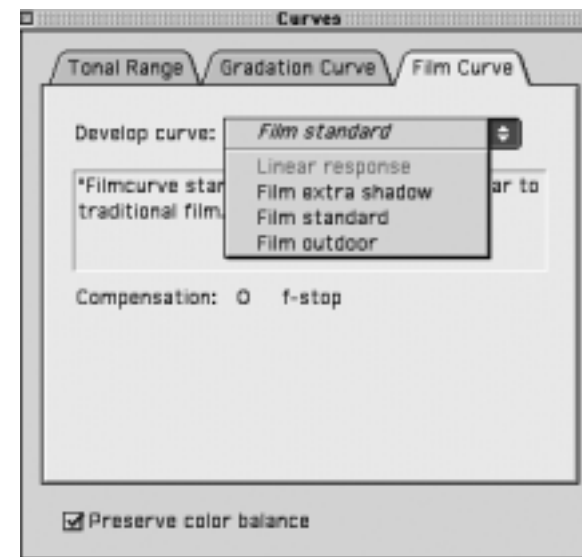
The Gradation Curves pane allows the control of an infinite number of points along the curve of an image (compared to the two points of the Tonal Range pane). The curve starts out as a linear curve. By clicking on the curve a point can be added that can be adjusted to control the image tone. To observe the effect of this tool, place a point on the middle of the curve and pull it up slightly. The midtones of the image become lighter. Other areas of the image are also lightened to some extent, so it may be necessary to place other point on the curve to control this. There are also easy to use up/down buttons to adjust brightness and contrast. Experiment with the buttons to quickly control the image curve.

The Gradation Curve pane also reads Input and Output values. These numbers show the “before” and “after” values of the pixels at the point you placed on the curve. The Input value shows the brightness of the pixel before the curve is applied, and the Output value shows the brightness of the pixel after the curve is applied.



The key to both Tonal Range and Gradation Curve is to be conservative with their use. Using these tools to attempt to correct an image that was poorly exposed will not result in a high quality image.

The configuration of the Phase One camera back is dependent upon the chosen film curves and ISO values. It is important that the correct settings are made before shooting. Please read Software Set-up / Selecting Film Curves. On occasion it may be necessary to alter film curves after shooting, to improve contrast or detail. Select the Film Curve tab, and drop out menu, in the Curves dialogue box to see the options.



Unsharp Mask

The name “unsharp mask” (USM) can be misleading. Using this tool actually gives an apparent increase in image sharpness by enhancing the edge differences between pixels of different colors.



When applied to an image, the software evaluates the contrast differences between pixels and either enhances the difference or not, based on your settings.

There are two controls over the USM:

Amount

The amount of change is entered here as a percentage. The higher the setting, the more sharpening will be applied.

Threshold

The threshold level controls at what level the sharpening will begin. At the default "0" setting the sharpening amount is applied to every pixel.

A third option found in many imaging programs, Radius, is fixed in the software application at about 1 pixel.

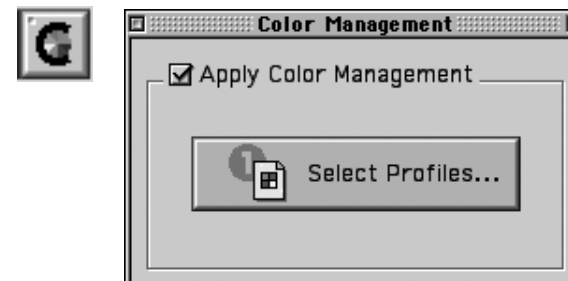
Using this tool to attempt to sharpen an image that is clearly out of focus will not give a pleasing result.

However, an image that appears to be soft, with low color contrast, can be significantly enhanced by careful application of USM.

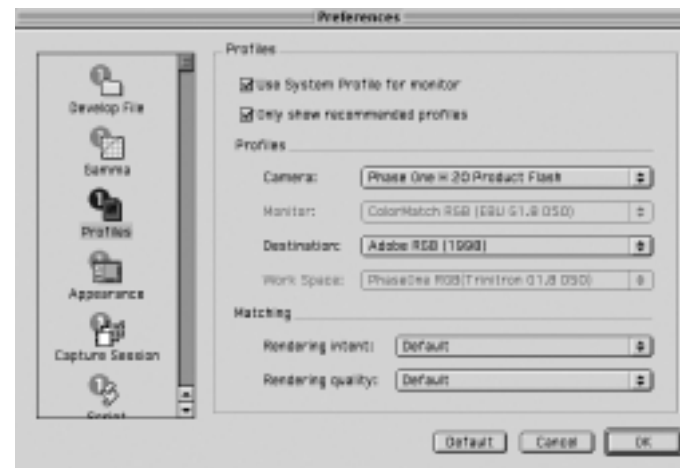


Color Management

The Phase One camera back is designed to work as part of an ICC color management workflow.



The camera, monitor and printer can be specified in the application, and the processed image will be customized for that specific input and output configuration. If the final images are to be printed, then the results, as they would appear in the final print, can be previewed on screen. In this way images can be adjusted to give optimal results, and costly errors can be avoided.



To use this feature first set the Profiles in the Preferences window.

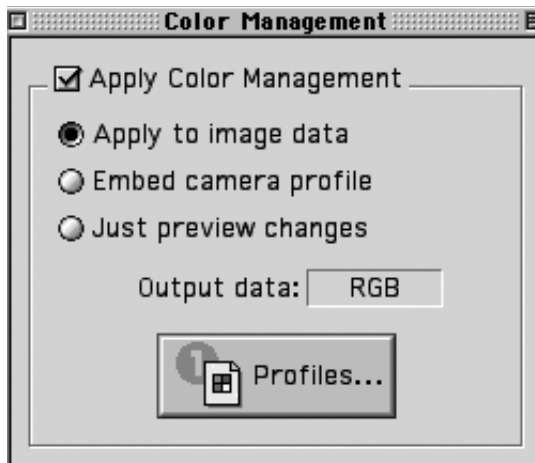
Refer to the Preferences/Profiles section of this manual for guidance.

Apply to Image Data

The software converts the colors of the image, using the specified settings.

In the above example the “Phase One H 20 Product Flash” camera profile and the “Adobe RGB (1998)” output profile are selected. Firstly, the image is captured using a profile suited for flash photography. After development the image will be specifically adjusted for the selected Adobe RGB color space.

The Color Management window will also display “RGB” in the “Output data” window to show that you are creating a RGB file and the on-screen preview image will change to simulate the final printed photograph.



Embed Camera Profile

This option can be used to embed the ICC camera profile into the developed TIFF image. Use this option when the images are going to be edited on a computer that does not have the Capture One software installed.

When a profile is embedded in an image, and the image is opened by Photoshop (or other ICC aware programs) the program will recognize the color characteristics of the camera back and ensure accurate color reproduction.

Just Preview Changes

When this option is selected, the on-screen image will change to simulate the printer or monitor set in the Preferences, but the actual image data will not be adjusted when the image is developed.

This option is used to preview how an image will look in e.g. CMYK, without converting the image color data.

Because the application is fully ICC compliant, it is an “open” system. Any ICC profile for any printer or monitor can be used. Place the desired profile in the “Color Sync Profiles” folder in the “System Folder”. Restart the program and the new profile will appear in the Preferences pop-up menu.

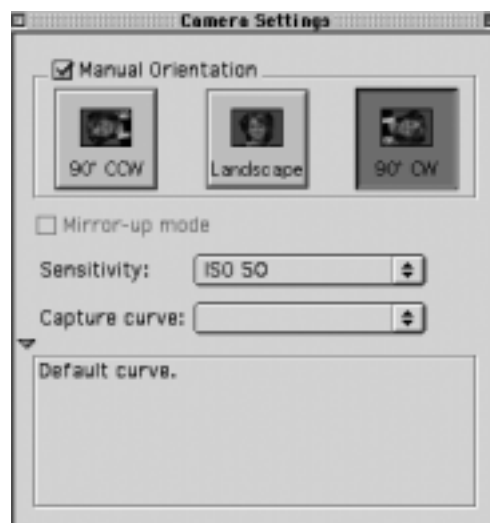
Using third-party software, customized printer or monitor profiles can be made and installed. This gives greater color management control of the workflow environment.

Camera Settings

The Camera Settings control is used to set the orientation of the image, if this is not set automatically.

Sensitivity

There is a choice between 50 and 100 ISO. Changes can only be made when a camera is connected.



Capture Curve

This tool enables a curve to be applied to the image without having to use the levels or curves control. For details on selecting curves please refer to Software Set-up/Selecting Film Curves for details.

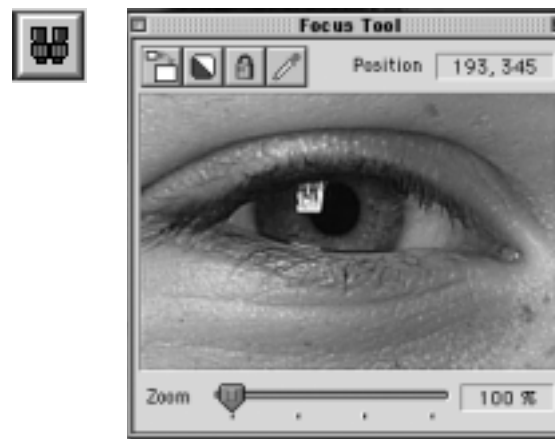
Capture Navigator

Click on the "Capture Navigator" button to bring up the "Capture Navigator" palette. The capture collection can be quickly previewed by using the next, previous, first or last image buttons. Use the "ctrl" and arrow keys to navigate between capture files. Images can be deleted from the capture collection by clicking on the "Trash" button.



Focus Tool

The tool is selected by clicking on the Binocular icon. While shooting, the focus tool can be used to verify the camera focusing and sharpening (USM) of the image. The focus tool performs an instant development of a small area of the selected image. This provides a very fast feedback on final image quality, in terms of focus, USM and Color Management settings.



Banding Suppression (Phase One H 20 Only)

In order to print or display images with correct colors a color correction as well as a tonal adjustment has to be applied to the image data. This color correction is typically taken care of by ICC profiles and internal correction tables like monitor gamma curves. An application like Adobe Photoshop uses ICC profiles to ensure correct colors.

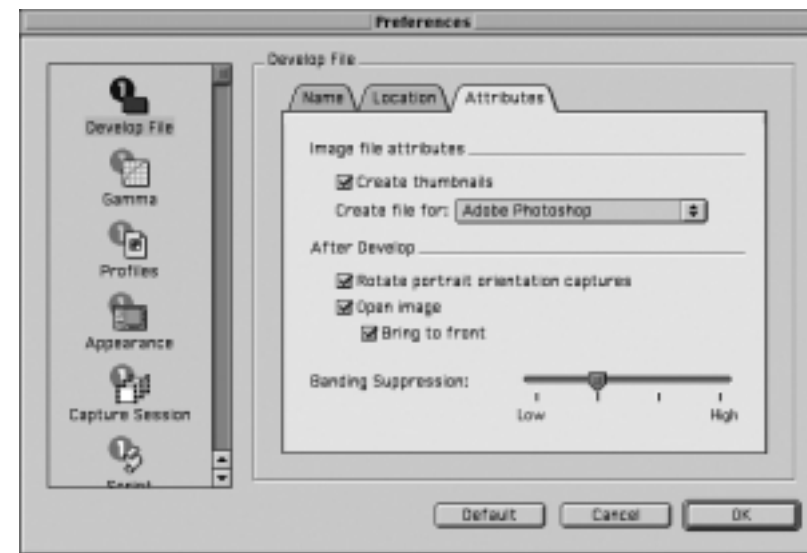
Currently monitors and RGB printers only handles 8 bit per channel i.e. 256 levels of shades per channel. The required color correction and the tonal correction will reduce the number of shades. In a perfectly clean image with smooth image gradients the lacking shades may appear as bands. The gradients seem to jump in tone values.

Offset printers and most RGB printers are not able to print 256 levels of shades, which means that visible monitor banding typically never shows up in the final print.

The Phase One H 20 produces very clean image files with very low noise and even in 8 bit per channel the H 20 produces all 256 levels of shades. However, due to the color corrections carried out by other applications like Adobe Photoshop or printer drives, image banding may be visible in smooth gradients. The visible banding is likely to be enhanced if the image is manipulated in 8 bit per channel.

In order to minimize visible banding you can use the banding suppression slider. The slider will during the development of H 20 images in 8 bit adaptively introduce a certain amount of highly controlled variation/dithering to the image data.

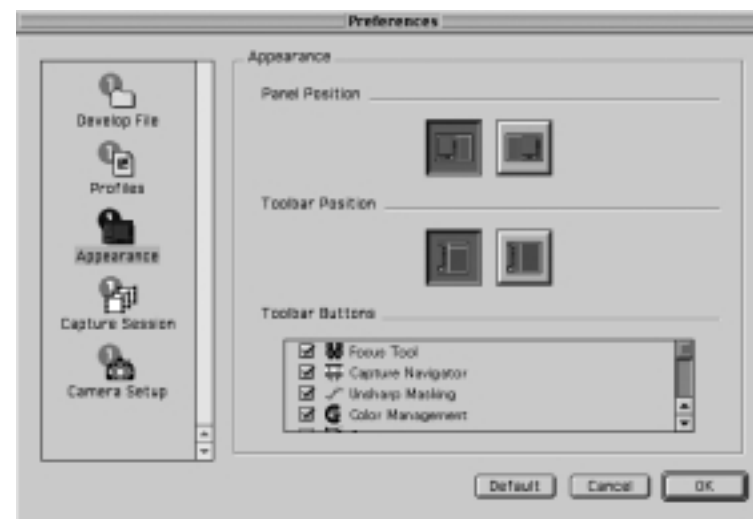
The banding suppression slider has 4 positions:



1. The first position adds a minimum of 'variations' to the image. Use this setting if you wish to maintain a very clean image, if banding does not seem to be a major issue and if the image does not have any critical areas (e.g. large uniform areas).
2. The second position is the default setting. This setting is the ideal compromise between maintaining a very clean image while suppressing banding.
3. The third position adds more 'variation' to the image than the default setting. This setting is recommended if the image shows signs of banding on a monitor or on the printer.
4. The fourth position adds a larger amount of 'variations' to the image. This setting is not recommended unless the banding is really severe as it will compromise image quality. The image quality can be compared to the quality of scanned films, and this setting could therefore be used for Phase One H 20 images that appear side-by-side with scanned image.

6 Preferences

Under the “File” menu is an option called “Preferences”. Select an option from the left-hand side of the window and then set Preferences on the right. It is also possible to change the appearance of the user interface.



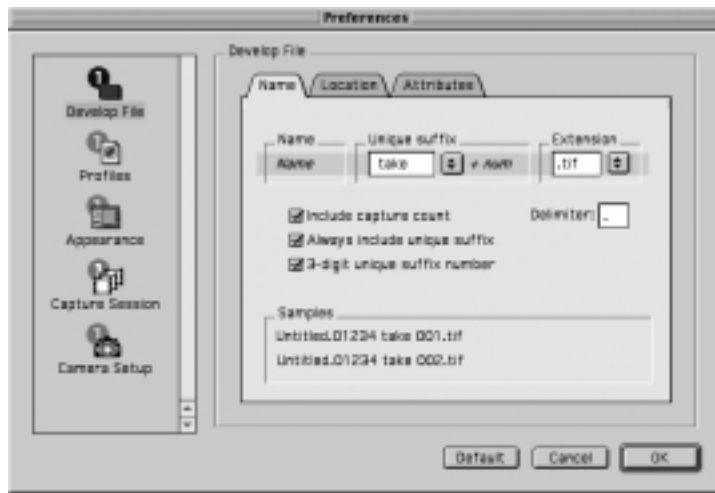
Develop File

The Develop File Section controls the naming, file location and other attribution settings.

Name Tab

The “Name” tab defines how the developed files are named. The software application can automatically name and number images as they are developed.

After the Name, a unique suffix can be added, followed by a number and finally a file extension, if desired.



Three options are available and are previewed in the Samples window:

“Include Capture Count”

Will append the last five digits, of the capture number, to the file name. Further numbers can be added by using the Delimiter option. This gives accurate and easy identification of developed capture files.

“Always include unique suffix”

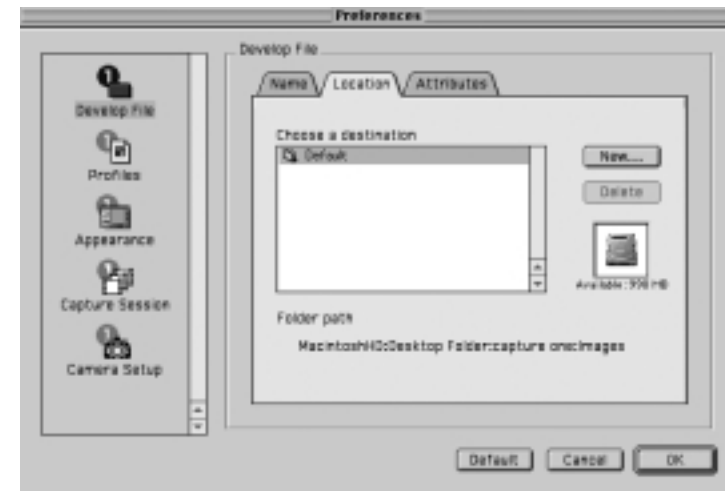
Adds a suffix and digit to the file name. This is a useful supplement to the default setting. Normally captures are identified with a pre-defined number, or name, and subsequent captures are numbered consecutively – for example “capture name”, “capture name.2”, “capture name.3”, and so on. When the “Always include unique suffix” option is selected the developed files will be identified as “capture name 1 suffix”, “capture name 2 suffix”, “capture name 3 suffix”, and so on. Finally it is possible to add the file extension in the Ext. field – for example “capture name 1 suffix. tiff”.

“3-digit unique suffix number”

Changes the naming from “capture name2” to “capture name002.” This is useful when developing a series of images that must stay in sequence (36 images for a QuickTime VR object movie, for instance). When the images are named “001”, “002”, “003”, etc, the Mac will display them in the correct order in Finder windows.

Location Tab

The “Location” tab is used to control where the developed images are stored. The default location for processed images is in the “Images” folder inside the application folder on the hard drive. A new folder can also be created or selected.



Attributes Tab

The following options are available:

“Create thumbnails”

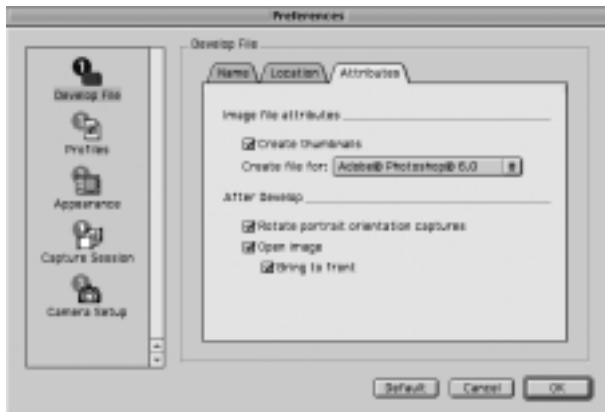
If checked, the software will create a small thumbnail icon image of the file when viewed in the Finder of the Macintosh.

“Creator file for:”

Here you select the application in which you wish to open your developed TIFF file

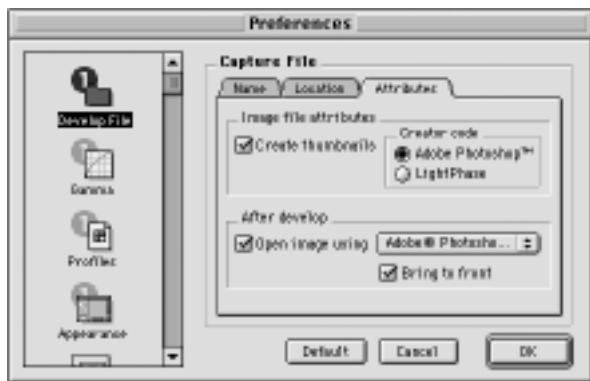
“After Develop”

This setting is used to open the image, and change orientation, immediately after development.



Gamma

The application can apply a gamma curve to the file as it is developed. This is often needed for images that are going to be used in Photoshop or other imaging applications; a standard 1.8 Gamma curve is applied to all images by default. However, some color management programs require images with a 1.0 Gamma curve.



Profiles

To use Color Management effectively, the profiles of the camera, monitor and destination must be defined. If all three devices are not correctly specified there is a risk that the final image will not correspond to the captured image.

The software installs basic profiles for the Phase One camera back as well as a generic monitor profile (e.g. Trinitron 1.8) and several CMYK printer profiles and RGB color space profiles.

A brief guide to preference settings is provided here:

Use System Profile for monitor – check to select the system monitor profile, or un-check to specify a monitor profile.

Camera – select a suitable profile for the current lighting and photography conditions. Select between the following:

- Phase One H 20 Outdoor Daylight
- Phase One H 20 Portrait Natural
- Phase One H 20 Product Flash
- Phase One H 20 Product Tungsten

Destination – Select a suitable output profile. An example could be:

- Adobe RGB (1998)
- Adobe RGB (1998)
- PhaseOne RGB(Trinitron G1.8 D50)

It is possible to create your own ICC profile and import them into the Capture One software. Any ICC compliant profiles can be used with the Phase One camera back.

For more information on Color Management, please refer to the Color Management User Guide.

Setting Up ICC Profiles in Adobe Photoshop 6.0

The Capture One Software sets up the recommended color Set-up for Adobe Photoshop 6.0 automatically. However, if the automatic set-up does not work then install the color setting file called PhaseOne PS60 Defaults.csf. This color settings file is found on the enclosed CD-ROM under Capture One Basic Install/Capture One Basic/Goodies/Color Management Goodies/Photoshop 6.0 — Settings.

To install the settings file close Photoshop 6.0 and copy the file to the root directory under System Folder/Application Support/ Adobe/ Color/ Settings. Then restart Photoshop and go to Edit/Color Settings/ Load and choose PhaseOne PS6.0 Defaults.

Camera Set-up

The “Camera Set-up” preference is used to control several basic camera functions.

Please refer to the Workflow Optimization section of this guide for details.

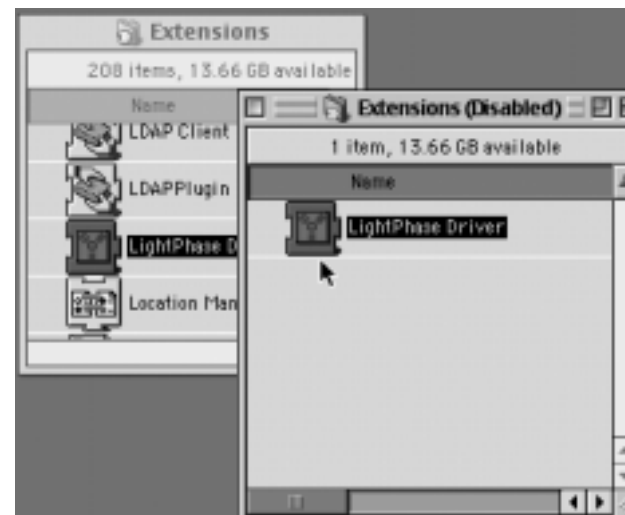
7 Capture Server

Being able to move captured photographs from computer to computer quickly is an important part of a workflow. This allows one photographer to be in the studio shooting while another connects to the capture computer and develops the images.

Phase One has written special software that allows the transfer of capture files over the IEEE1394 (FireWire) bus. This allows for almost seamless integration of two workstations. To set this system up two workstations must be connected together via IEEE1394 (FireWire) cables.

Preparing Both Workstations

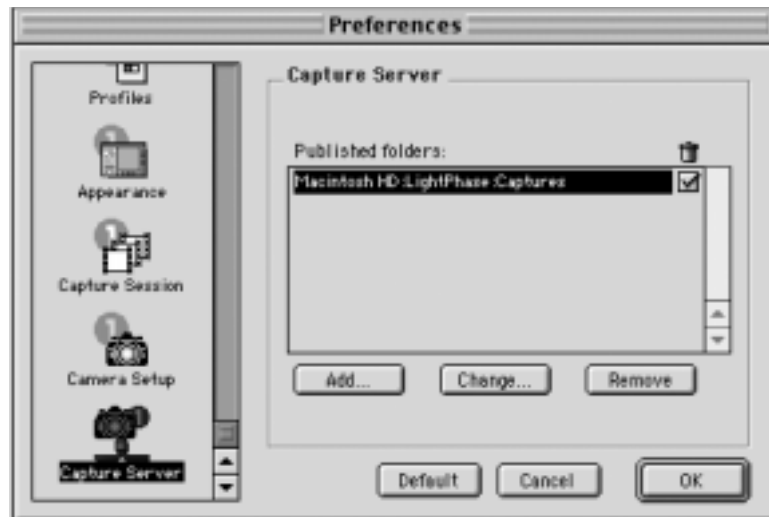
After installing the Capture One application on each workstation, disable the "Phase One Driver" extension on the workstation that is to be used for developing. This prevents the developing station from trying to control the camera back. To disable the extension, go to the Control panel extension manager and deselect the "Phase One Driver".



Once the software has been installed, and the camera back has been connected to one computer, both workstations must be restarted. The next step is to publish the capture folder on the capture station. This shares the capture folder with the developing workstation. The procedure is described below.

Setting Up The Capture Workstation

From the Preferences window scroll down to „Capture Server“ and select it. Click the “Add” button and then choose the main capture folder. Any sub-folder that contains captures will automatically be published at the same time. Select the folder from the list and then click the “Choose” button to publish the folder and return to the Capture Server Preferences.



Refer to the “Organizing Images” section of this manual to determine the best way to organize capture files.

The selected folders are now published and will appear in the list. To specify additional capture folders click “Add” again, select the folders and click “OK” to return to the program and begin shooting.

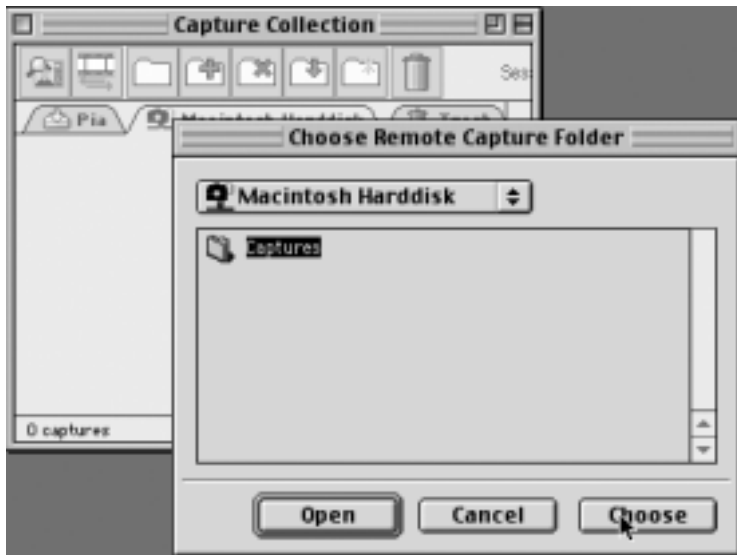
If the box in the “Trash” column is checked it allows a connected user to delete files from the specified capture file.

Setting Up The Develop Workstation

Move to the develop workstation and launch the program. An icon representing the capture workstation appears on the desktop.



There is now a new tab in the Capture Collection window that represents the capture workstation. Click on the "Select Folder" button and specify which published folder you wish to view.

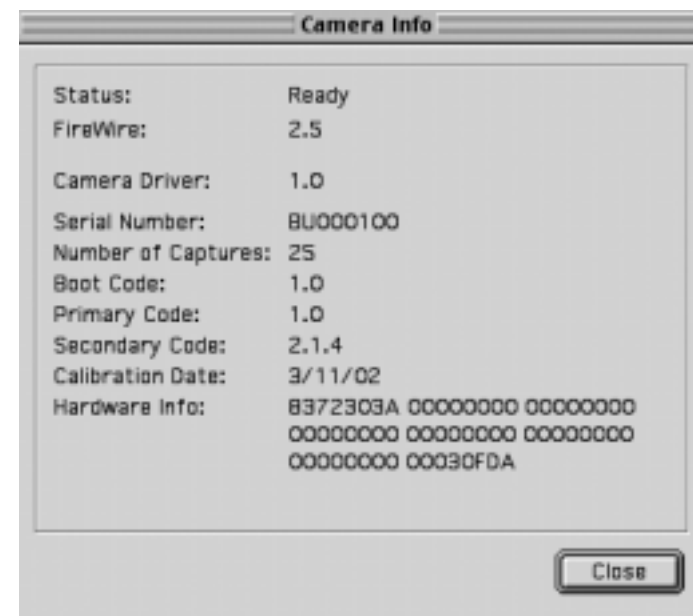


To develop an image you must transfer it to the developing station by clicking on the small icon at the top of the window. After a few seconds the raw capture file will have been transferred and will appear in the local capture folder tab. The file can then be developed as normal.



8 Camera Information

The Phase One camera back has an “info” function that displays important information about the camera. This information can be invaluable in troubleshooting problems. If you ever need to contact technical support, be sure to have this information available. To access this data choose “Info...” from the “Camera” menu. The following information box will appear:



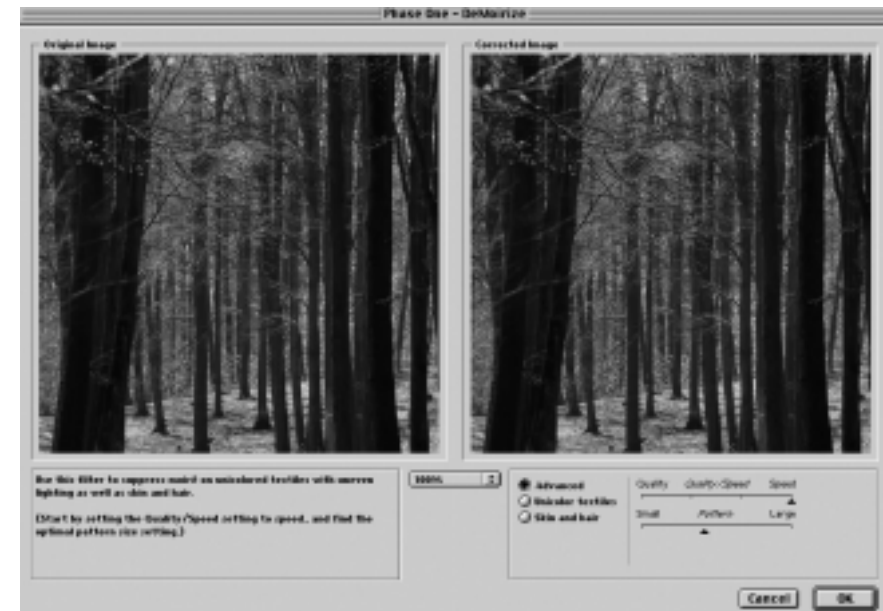
9 Additional Features

Demoirize Plug-in

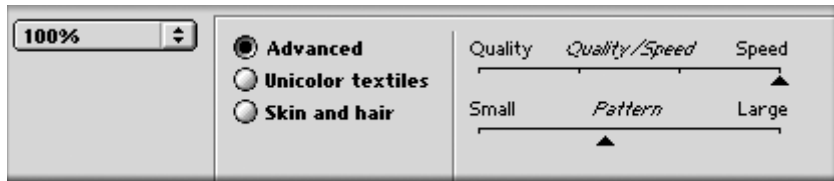
The Phase One Demoirize plug-in for Adobe Photoshop allows the removal of moiré patterns from images by means of three different filtering modes: Advanced, Unicolor Textiles and Skin and Hair.

The plug-in is enclosed on the CD-ROM and will be placed in Adobe Photoshop's plug-ins folder when installing Capture One Software.

The Demoirize plug-in window is divided into two separate previews:



Original Image, which displays the image before correction and Corrected Image, which displays the image after correction.



Advanced Mode

Advanced mode is a new filter tool. It is also the default mode of the Demoirize plug-in. In advanced mode the filter estimates colors by means of the Quality/Speed slider and the Pattern Size slider.

Often the color moiré is visible by multiple red/green or blue/yellow areas of discoloration. These areas of discoloration are seen as bands or stripes. The larger the band or stripe, the larger the pattern size setting should be.

Pattern Size

The best way of finding the optimal pattern size is by setting the Quality/Speed slider to Speed while moving the Pattern Size slider towards Large. While moving the slider the effects of corrections are seen on the screen. Selecting a larger than necessary pattern size will not generally enhance the result.

A circular arrow icon that turns indicates that the Demoirize filter is currently calculating image data.

Quality/Speed

When large areas of moiré stripes and bands are present the Quality/Speed slider should be set towards Quality, at the cost of Speed. Use the Quality setting when details smaller than the selected pattern size should be less affected by the filtering.

Using Advanced Mode on Skin and Hair

For skin and hair surfaces the optimal settings for the advanced filter would be to position the Quality/Speed slider at Speed and the Pattern Size slider very close to Small. Please note that large color moiré areas in hair may require a larger pattern size setting.

Using Advanced Mode on Textiles

On textile the optimal settings for the advanced filter would be to position the Quality/Speed slider towards Speed, or in an intermediate position. Then move the Pattern Size slider to the smallest possible setting.

In many cases the masking of unicolored, or nearly unicolored areas, may be carried out less accurately with the advanced filter compared to the Unicolor textiles filter. Since masking depends very much on the type of image, it is recommended to test different masking and filter settings.

10 Trouble Shooting

If technical problems are experienced when working with the Phase One camera back it may be necessary to contact Phase One's Technical Support department.

Phase One recommends that you do a screen dump of your system configuration. This can be done in the menu Camera - Info, then press Apple-Shift-3 to generate a screen dump of the current settings. This screen dump file can be found in the root of the main hard drive and is named Picture #.

Also, please make a system report of the Macintosh computer system. This can be done with the Apple System Profiles found in the Apple menu. Fax or e-mail your Camera Info and the Apple System Profile to Phase One's Technical Support department.

11 Windows Getting Started

The Phase One camera back has been designed for ease of installation and use. There are just a few easy steps to follow, from unpacking the Phase One camera back to developing the first shot.

- Connect hardware, install software
- Launch the Capture One application
- Determine the exposure and shoot
- Select images to develop from the Capture Collection
- Gray Balance
- Crop desired image
- Adjust Gradation Curve/Tonal Range
- Set any desired Color Management, naming, etc.
- Click Develop

The following sections have all of the basic information you need for getting started, step by step.

Hardware Set-up

The camera back connects to the computer via an IEEE 1394 connection. This new, extremely fast connection does not have many of the limitations of the SCSI technology used in previous digital cameras. Many of the problems related to SCSI such as setting ID numbers, termination, and not being able to “hot-plug” (having to shut down before unplugging the device) are nonexistent with 1394. The cable length can be extended using the Phase One Power Conditioners to move the camera far from the computer.

Install the PCI IEEE 1394 Card (if required)

While the owner's manual for the particular computer should be consulted, the basic steps to installing the card are as follows:

- 1) Shut down and unplug the computer.
- 2) Remove the cover, exposing the motherboard.
- 3) Choose an empty PCI slot and remove the screw and cover.
- 4) Gently place the card into the slot with the 1394 connectors facing through the opening.
- 5) Press straight down and slightly rock the card until it is firmly seated in the slot.
- 6) Replace the screw to hold the card in place.
- 7) Replace the case, restart the computer.
- 8) On a Windows computer after restarting, a dialog box appears indicating that Windows found new hardware (the IEEE 1394 card). There may be a prompted for the Windows 98/2000 CD if Windows cannot find the driver.

Optimizing IEEE 1394 Transfer Speed

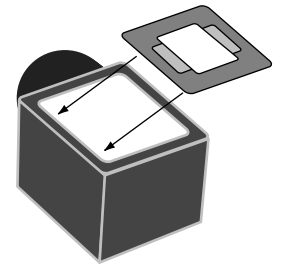
The default transfer speed is set to 60% or 80% bandwidth depending on the IEEE 1394 controller and the camera back model. On most computers (400 MHz and beyond) the transfer rate can easily be increased to 100%. If data dropout or lost frames is experienced - for instance if the software warns of lost frames or if the captured images appears to be damaged in any way - then transfer speed must be reduced. See Image Transfer Time.

Photographic Equipment Set-up

In addition to setting up the computer, the camera must be prepared to work with the Phase One camera back.

This involves a few simple steps:

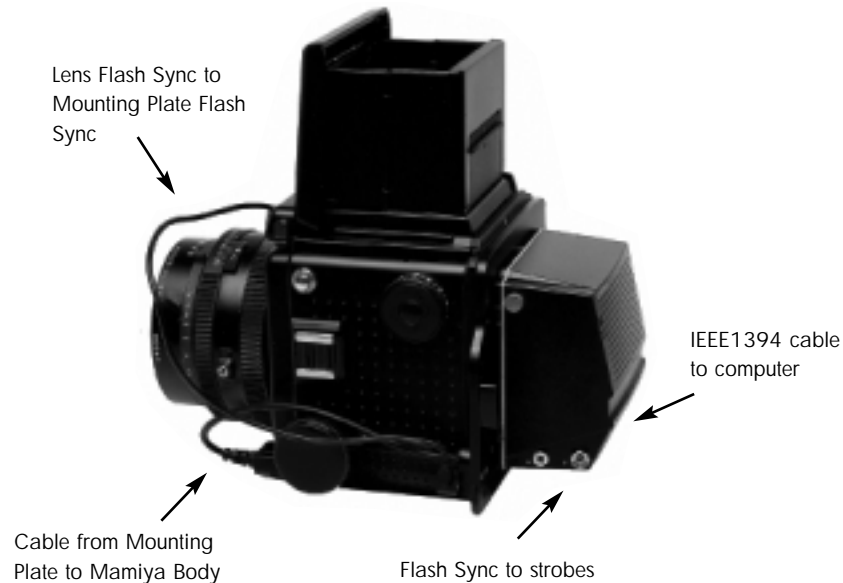
- 1) A Ground Glass Mask is included. This must be installed in the viewfinder to ensure correct framing. Remove the camera viewfinder and focusing screen (refer to the camera users manual for detailed instructions). Insert the Ground Glass Mask and replace the viewing screen and the viewfinder.



- 2) If a Mamiya RZ67 Pro II is used, connect the mounting plate to the camera and then connect the cable from the mounting plate to the connector on the front of the Mamiya. Be sure that the cable is connected and locked properly; the latching mechanism will be on the bottom.



- 3) Connect the camera back to the camera or mounting plate. Be sure that the camera back is firmly connected to the camera before releasing! The small screw on the top of the camera back can be tightened with the supplied screwdriver to prevent it from being accidentally removed.



Cable Connections for the Mamiya RZ67 Pro II

4) Connect the included Sync Cable from the lens' flash sync to either the connector on the camera back marked "C" or the the Mamiya Mounting plate.

5) If using a motorised camera, connect the included Motor Cable to the connector on the right side of the camera back marked "M".

6) If flash is used then connect the Flash Sync Cable (not included) from the strobes to the connector on the right side of the Phase One camera back marked "F".



7) Finally, connect one end of the included IEEE 1394 cable to any one of the empty ports on the newly installed card, or the built-in 1394 port. Connect the other end to the camera back. These cables can only be inserted one way and may require a little pressure to insert.

8) Please note: For the Mamiya RZ the camera must be set to take multiple exposures in order to use the Phase One camera back. The multiple exposure selector (M) is combined with the film back revolve switch (R).

Updating The Camera Software/Firmware

Phase One generally recommends upgrading the camera back with the latest camera software (also referred to as firmware) in order to benefit from stability and performance improvements. The Camera Updater program will indicate if the latest camera software is already installed. If an update is needed, it automatically downloads the camera software into the camera back. There is a dedicated Camera Updater program for each camera back model. The appropriate updater is enclosed on the CD-ROM in the Camera Updater folder.

Before Installing The Camera Updater

Shut down all other programs including the Capture One software. Disconnect all third party IEEE 1394 devices that were NOT delivered by Phase One.

Installing The Camera Software

Select the Camera Updater that corresponds to the camera back model. Note that the LightPhase model BB02 requires BB02Updater. Connect the camera back, run the Camera Updater software and follow the instructions displayed on the screen.

Please Note

The Camera Updater should not be interrupted. If interruption occurs please repeat the procedure. The camera update may take several minutes to complete. Re-connect the camera back once the update is completed.

Other Photographic Equipment

While the Phase One camera back has been made as compatible as possible with photographic equipment, there are a few issues to be aware of:

- 1) When using the Phase One camera back with a Hasselblad 555ELD, the setting on the front of the Hasselblad needs to be in the "Film" position. (The Phase One H 20 also works in „Dig“ mode).
- 2) When using the Phase One camera back on a view camera use the "Two Shot Mode". This means that the shutter release is activated twice. To shoot an image, release the shutter, reset it, and shoot again. The first shot wakes the camera up, and the second is the actual exposure. Alternatively, pressing the "Capture" button in the preview window will wake the camera up and then the shutter can be fired once to take a photo. The camera will remain "awake" for 20 seconds or until the next capture.
- 3) When used on a Mamiya RZ67 Pro II the selector on the right side of the camera body must be in the "M" position.
- 4) The Phase One camera back fully conforms with the ISO 10330 Standard for Photographic Strobe Systems; unfortunately not all strobe manufacturers comply with this standard. Check with the manufacturer of your strobe system to prevent damage.
- 5) The "Strobe Equipment" section of this guide provides a list of devices that have been tested with the Phase One camera back.

LED Indicators Lights

On the back of the Phase One camera back are two sets of LED indicator lights. A red and green light on the left and a red and green light on the right. The left and right pairs are identical and should always display the same thing. These lights indicate the camera back status.

The list below describes what the status lights indicate:

Green Lights Steadily On

This means that the Phase One camera back is receiving power and is ready to capture images.

Green Lights Flickering

After capturing an image the green lights will flicker on and off while transferring the image to the computer.

Both Red and Green Lights Steadily On

If the camera is improperly shut down or an error occurs both sets of lights may stay lit. If this happens, quit the Capture One software, unplug the camera back and wait ten seconds, then replug the camera.

No Lights On

If the camera is properly plugged in and receiving power and there are no lights on, the camera back has shut down or may be damaged. Unplug all connectors, inspect all cables for damage, examine the IEEE 1394 card (if in use) for proper installation and reconnect everything. If the problem persists, contact your Phase One dealer for assistance.

12 Install the Software

After the computer is restarted, the software that will control the IEEE 1394 card must be installed, as well as the software for the Phase One camera back. We have included one easy-to-use installer that will place all of the necessary software on the computer.

Follow these steps to install the software:

- 1) Place the included CD-ROM into the CD drive. Double-click the CD-ROM icon.
- 2) Double-click the item marked "CaptureOne Inst.exe".
- 3) Read the software license, and, if in agreement, click the "Agree" button to continue with the installation. Otherwise, click "Cancel" to quit the installation.
- 4) When prompted for the Adobe® Photoshop® "Plug-Ins" folder, choose the correct folder from the list. Be sure to choose the Photoshop folder, as there may be many different plug-in folders on the hard disk. If installation is made on a non-english PC, the installer may not be able to locate the Photoshop® plug-ins folder, so be sure to select the proper plug-in location.
- 5) Follow the on-screen prompts. When the installation is completed, restart the computer.

When the software is installed plug the USB dongle into the USB port (on the keyboard or on the harddisk). If the dongle is not connected you are unable to develop/process images.

Once restarted, plug the camera back into the IEEE1394 port. The driver for the Phase One camera back is automatically copied into the Windows driver directory during installation and this should ensure that the Driver Wizard does not appear when the camera back is connected for the first time. If Windows does detect new hardware (the camera back) and asks for a driver, then click on the "Browse" button and direct the Driver Wizard to the "c:/CaptureOne/" directory for the correct driver file.

Floppy Disk Installation for Portable Solution

If the Phase One portable solution is used, then installation can be performed from a floppy disk instead of from a CD-ROM. Copy the file CaptureOne Inst.exe from the CD-ROM to a floppy disk and run CaptureOne Inst.exe on the portable computer. Restart the computer after installation.

Installed Items

The installer creates a folder on your hard disk called "Capture One." This folder contains the application as well as several sub-folders. They are:

Captures

As photographs are taken with the camera, this is the default location where raw capture files are stored. Also, you may organize your raw capture files by creating new folders on the harddrive.

Previews

The Capture One application automatically creates a low resolution (approximately 1MB) preview image to use for color and tonal adjustments. All preview files are stored in this "Previews" folder. If any files are deleted from here the program will automatically generate new previews the next time the software application is started or if previews are missing then press the „Refresh“ button to refresh the capture collection.

Images

By default developed images will be placed in this folder. Again, the preferences can be used to change where developed files will be placed.

Using the Phase One Camera Back

Phase One has made using the Phase One camera back as close to using film as digital photography can be. The first step to using the camera back is to start the application. Double-click the Capture One short-cut.

Double-click the application icon to start the application that controls the camera back. After a few seconds the software will make a small "click" sound and the camera will beep. These two sounds indicate that everything is ready.

In practice the Phase One camera back can now take pictures. However before shooting it is a good idea to ensure that the software settings are optimal. This will ensure the best possible image quality and workflow.

13 Software Set-up

At this point it may be a good idea to set up Adobe Photoshop and the system for Color Management. A brief guide to Color Management and Profiles is provided in the Tools or Preferences section of this manual.

Taking Photographs

The Phase One camera back is designed for ease of use and high performance. First time digital photographers, as well as experienced digital photographers, can immediately begin taking images of excellent quality. The Phase One camera back can capture one image every 1.5 seconds/3 seconds for H 20. The camera makes a small “beep” when it is ready to capture the next image. If an attempt is made to shoot too quickly the camera will still respond, but images will not be recorded.

Technical Note

The camera back has a choice of two sensitivities: 50 ISO or 100 ISO. As a rule, when working with long exposures, an exposure based upon 50 ISO at 16 seconds will yield a better quality image than an exposure based upon 100 ISO at 8 seconds. ISO values are selected in the Camera Settings dialogue box. Settings can only be changed when the camera back is connected to a computer.

Take a light reading. Just as with traditional film photography, exposure is critical. Because of the wide dynamic range (similar to the “exposure latitude” of film) the software can compensate for a certain amount of underexposure, but not overexposure. Once an image is overexposed, there is no detail for the software to work with and no hope of correcting the image. For this reason it is important never to unintentionally overexpose. The software offers several tools to help evaluate the exposure of an image. Compatible shutter speeds range from 16 seconds to faster than 1/1000 of a second. For general strobe photography it is recommended to use an exposure speed between 1/60 sec and 1/500 sec. Finally, select the desired aperture.

Selecting Film Curves

A film curve can be compared to a gradation curve. It shows how light values, recorded by the CCD, will be converted to light values in the image data file. Four different film curves can be selected in the Capture One application. Before each photo session, select the correct film curve for the type of work you are doing.

Film standard: A default film curve, which can be applied for general pupose photography.

Film extra shadow: A curve similar to the Film standard, with increased shadow detail.

Film outdoor: A film curve suitable for high contrast outdoor photography, with increased highlight detail. 100 ISO only.

Linear response: Film curve that gives exact linear response. It is especially useful for scientific photography with very low contrast scenes. This film curve should be used with care as there is an inherent risk of over exposure in highlight areas.

Selecting Landscape or Portrait Orientation

The Phase One camera back can be mounted on a wide range of professional medium format cameras, technical cameras (also referred to as view cameras) and other camera systems where image orientation is not automatically detected. Here camera orientation must be determined manually in the Capture One Software. Select the desired camera orientation in the Preferences dialogue box. Images will automatically be rotated to landscape or portrait orientation.

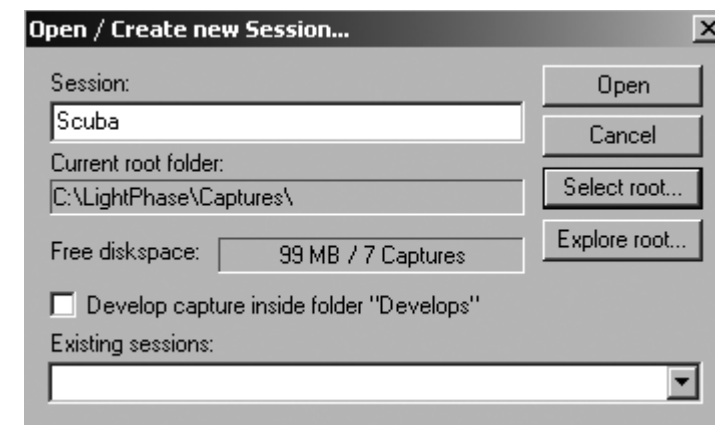
Organizing Images

Creating folders to hold captures and choosing session names, before or during shooting, will save time during the processing stage.

If, for instance, there is a photo session of a model with three different colored outfits, three separate folders can be created in advance. When shooting, just select one of the three folders for image storage. Organizing files as you are shooting will save time later when you want to print a contact sheet or archive files.

Naming Sessions

The Session Creator is a feature that enables you to name the capture folder, and associate this capture folder with a dedicated develop folder, in one simple operation.



All developed capture files are stored in a sub folder called Develops (C:\Program Files\Capture One\Scuba\Develops), which is automatically created by checking the box Develop capture in the Session Creator dialogue box.

The capture folder thus created is automatically set as the current capture folder and capture files are named according to the session name — in this case “Scuba”. The name can be altered at any time during shooting, or more folders can be added.

Files can also be named and numbered automatically. The Capture naming tab is located under the File/Preferences. Enter a name in the “Session” field of the Capture Collection window. All subsequent captures will now be named accordingly. To automatically add a number to each capture, open the Capture Naming Preferences window and enter a number in the “Delimiter” field. There is a maximum of six digits. Check the box next to “Always include number” and a sample of the naming and numbering will appear.

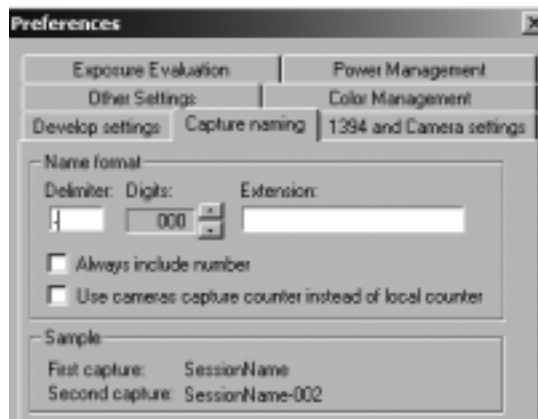


Image names can be altered at all times by clicking on the capture name field at the bottom of each preview.

Workflow Optimization

If the PC is connected to a network, capture collections can be created on another computer. Using a network to improve workflow allows one photographer to concentrate on shooting whilst another photographer edits and develops the session. For details, please consult the 1394 Capture Transfer section of this manual.

Technical Note

To optimize the capture rate, there are three factors to consider:

- The image transfer time.
- Host computer speed.
- Preview generation.

Image Transfer Time

The image transfer time is set to 1.6 seconds as default. The transfer time refers to the time it takes to transfer images between the camera back and the host computer. With a fast computer e.g. 400MHz Pentium II or more, with an OHCI-based IEEE 1394 adapter, the transfer time may be reduced to 1.0 second. However, if data dropout, or lost frames, is experienced then reduce the transfer time. The image transfer time can be changed by selecting the 1394 and Capture Orientation tab, which is located under File/Preferences.

Host Computer Speed

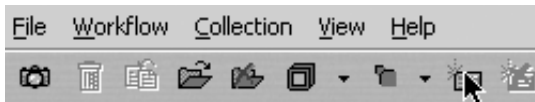
The speed of the host computer influences the capture rate. The best way to ensure a reliable capture rate (number of captures per minute) is by using a fast hard drive with an average speed of 20MB/second and sufficient RAM to minimize paging or operating system interference. 256MB RAM is recommended for stationary computers whereas for notebooks, for example a Sony Vaio, 128MB RAM is sufficient.

Preview Generation

Preview generation is time consuming for the computer. Viewing previews after a session allows the computer to work faster. Disable preview generation by selecting Rapid capture mode from the toolbar.



Re-generate all missing previews at a later time by simply clicking on the Refresh button in the capture collection window.



Although no preview is generated in Rapid capture mode the software still displays a memory-based preview of the captured image and performs exposure evaluation. On a fast stationary computer the capture rate improvement is barely noticeable, however, on notebooks it could amount to 5 captures per minute.

14 Editing and Selecting Images

The Phase One software main window is divided into three sections that make it functional and easy to use. The sections are:

Capture Collection

The Capture Collection is located on the left side of the interface screen and will show a small thumbnail of the images in the currently selected capture directory. The size of the thumbnails can be changed by using the drop-down menu in the tool bar.

Preview Window

The Preview Window shows an enlarged version of the image in the Capture Collection. To move an image from the Capture Collection to the Preview Window, simply click on its thumbnail in the Capture Collection.



Function Window

On the right hand side of the main interface is the Function Window. The options in this area change depending on which of the function tabs is selected. The tabs are: Preview, Gray Balance, Exposure, Focus and Develop. The use of these tabs will be covered later in this manual.

Editing

The Capture Collection is similar to a contact sheet. It displays thumbnail images of all of the photos taken with the camera. Two captures can be evaluated side by side. This is done by selecting the side by side icon from the tool bar. (C.f. Tools section)

The main purpose of side by side evaluation is to make it easy to select the best capture from a range of almost identical capture files.

Deleting Images

To delete an image, simply drag the thumbnail into the "Trash" tab or click the thumbnail and press the "Delete" key on the keyboard. The image will now be held in the Trash Capture Collection. Click the "Trash" icon at the top of the screen to remove all of the trashed images. This safety measure helps prevent accidental deletion of images. To "un-delete" an image, drag it out of the Trash tab and back into the Capture Collection.



Once the trash has been emptied the images are gone for good, so be careful! Images can be instantly and permanently deleted by selecting them and then pressing "Ctrl-Delete" on the keyboard; be careful when using this feature! Once an image is deleted it is gone forever.

Previewing

While the Capture Collection is a good place to evaluate images quickly, the Preview Window will provide a much better view of an image. To preview an image, choose one of the images from the Capture Collection and click it.

The thumbnail will then open in the larger Preview Window. The Preview Window provides improved image evaluation, as well as tools for adjustment of exposure, contrast and sharpness of the photo.



Function Tabs

The Function Tabs add features to the Capture One software without adding the clutter of multiple dialog boxes. Click on a tab to change the contents of the Function window and to enhance and evaluate the image before developing. The tabs are arranged in a logical workflow sequence.

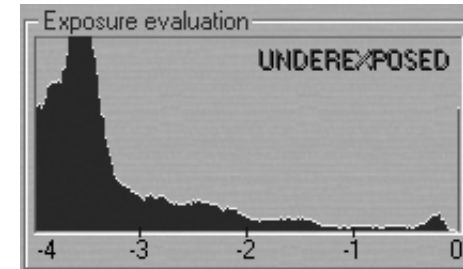
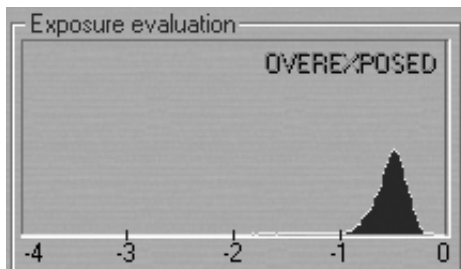
Capture Tab

The Capture tab is the option used most while shooting. This tab shows basic information about the most recently captured image. The top part of the window displays a histogram.

Exposure Evaluation

A histogram is simply a graphical representation of where the pixels are distributed in an image. The right hand side of the graph represents white or light colored pixels, while the left is dark or black pixels. If the image is of a light colored scene (or is overexposed) then most of the pixels (and the graph data) will be to the right.

Conversely, if the image is a dark subject (or is underexposed) then the data will all be to the left side of the graph. A well exposed image of a "normal" scene will have most of the graph data spiked in the middle with some highlight and shadow pixels to the right and left.

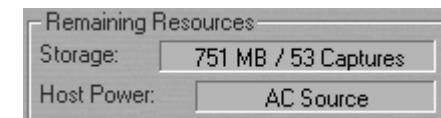


The Exposure area also has a powerful feature that can warn of overexposed, and underexposed, images.

Remaining Resources

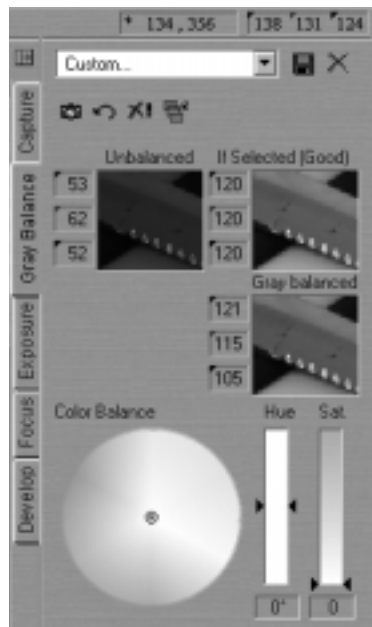
Also in the Capture Tab window is the section called Remaining Resources. This section helps gauge how much hard disk space is available. Some laptop computers also support a battery display which indicates the charge level.

The Power status indicator will display battery strength, AC source status, as well as the status of the camera back battery, if used. For this feature to work correctly, settings must be altered in the Windows Power Management Control Panel. (Start > Settings > Control Panels > Power Management/Options). Set the "Power Scheme" to be a "Portable/Laptop"



Gray Balance Tab

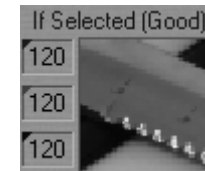
When shooting film under various light sources, such as fluorescent or tungsten lighting, compensation for color cast is made by using filters. With the Phase One camera back compensation is made by changing the gray balance.



Unlike many other digital camera systems Phase One has made the Gray Balance feature of the application easy to use. Simply follow these steps:

- 1) Open the image to be processed in the Preview Window.
- 2) Choose the "Gray Balance" tab.
- 3) Click the pointer on an area of the image that should be neutral gray. If there is nothing in the scene that is white or gray, include something such as a Kodak Q14 Step Wedge.

4) To help select a suitable area for gray balancing, if no Kodak Q14 Step Wedge is available, the **If Selected** image area will indicate either Good or Poor.



After completing these steps the image is completely neutral with no color cast.

There may be conditions where perfect neutrality is not always desirable. For instance, when shooting in the late afternoon the warm reddish glow from the setting sun may be an asset. To adjust the gray balance use the Color Balance selector at the bottom of the Gray Balance window. There are three controls in this section based on the HSB color model: Color Balance, Hue and Saturation. The appropriate gray balance is set by using the slider controls.

Finally there are four options designed to help in the gray balancing process.

Set As Capture Gray Balance

The selected gray balance is applied to all future captures.



Restore

All adjustments to the gray balance are cancelled and previously defined values are used.



Reset

All color balancing is cancelled



Apply Gray Balance to Current Captures

The selected gray balance is applied only to current captures.



Exposure Tab

One of the most important displays of the Exposure Tab Window is the "Color Info" window. This display shows the individual **Red**, **Green** and **Blue** channel information (or **Cyan**, **Magenta**, **Yellow** and **Black**. CMYK where K stands for key). With film photography the evaluation of final exposure and development levels is a manual, and often subjective, process. With digital photography accurate evaluation is made using the Color Info picker. By pointing the on-screen cursor at any point in the image you can read the precise values of that point in the Color Info display. Knowing the precise values of any part of the image is useful when full control of the printing process is needed. As printers, and printing processes, have individual characteristics, exposure levels can be adjusted to ensure a predictable and perfect result.

Values in the Color Info display are represented as a numerical scale from 0 to 255. A completely black pixel is represented as 0, a completely white pixel as 255. Again, it is important not to overexpose an image when using the Phase One camera back; if you see any of the Red, Green or Blue (RGB) values approaching overexposure (a value of 255) you need to adjust the exposure level. Keep image highlights (areas that should record as white with detail, not as specular reflection) between 225 to 250.

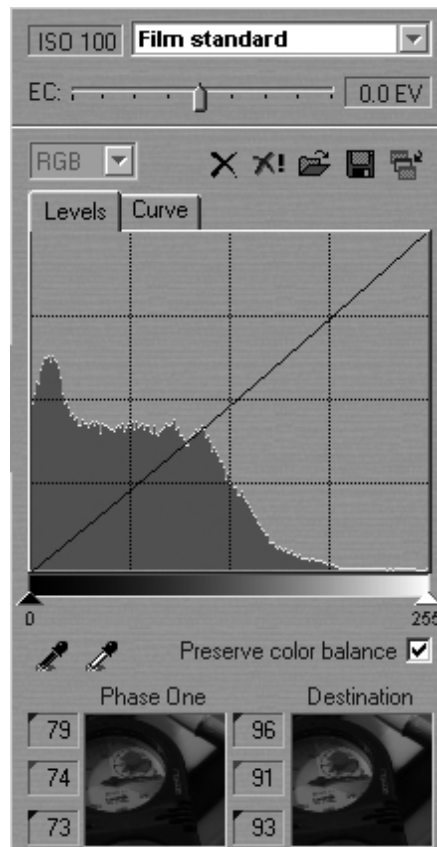


To control the brightness and contrast of the image two standard tools are available: Levels and Curves.

Levels

The first part of the Exposure Tab is the Levels control. This is a standard levels box similar to that of Adobe Photoshop. To make an adjustment drag the black or white slider left or right to either darken the shadows or lighten the highlight. Alternatively, click on the black or white eyedropper and select an area of the image to set as the shadow or highlight point. Beneath the display are preview windows showing the “before and after” of the changes.

At the top of the window settings and tonal adjustments can be loaded, or saved for future use. The “Preserve Balance” option ensures that all three color channels are adjusted simultaneously. If this option is un-checked the three color channels can be controlled independently.



Curve

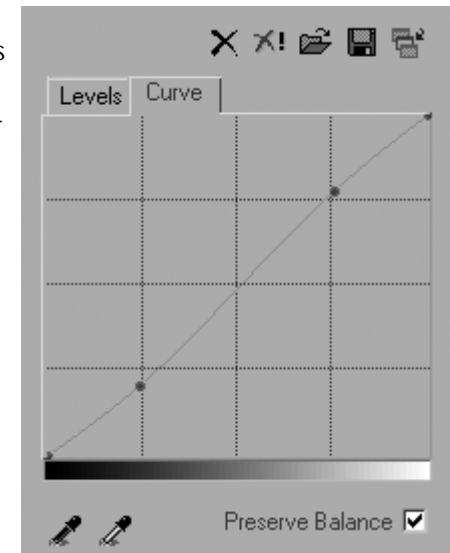
The next window in the Exposure tab is the Curve control, again this is a standard Curve control that may look familiar to those of other imaging programs.

The Curve control is extremely powerful and can be used to control every tone in the image.

An imaging curve is a graph that represents the original data along the bottom and the output or developed data along the side.

The dark tones are to the left, while the light colors are on the right. The default curve is a straight line, which means that the image data is not changed by the curve.

To use the curve, click anywhere along the line to add a point and then drag the point up or down to affect the tone in the image.



In the example a point has been added in the lower (darker) end of the curve (called the three-quarter tone) and pulled down. This will make that point darker in the developed image. A second point was added in the quarter-tone (light end of the curve) and pushed up. This will make that point lighter. In addition to darkening and lightening these two selected points, because the entire curve was shifted between these points an overall increase in contrast will occur from this “minor” change.

Curve control is extremely powerful and should be used with caution and discretion. Again, as with the Levels control, RGB channels can be controlled individually, and settings saved and loaded.

At the top of the Exposure tab is a drop-out menu. This is used to control what kind of default curve is applied to each image. In this way a curve is applied to the image without having to use the levels or curves control. By selecting a curve and then clicking the camera icon, the selected Curve is applied to all future captures. There are three different curves that can be applied.



The configuration of the Phase One camera back is dependent upon the chosen film curves and ISO values. It is important that the correct settings are made before shooting. Please read **Software Set-up / Selecting Film Curves**.

On occasion, it may be necessary to alter film curves after shooting. Select the Film Curve tab, and the film curve drop-out menu, to see the options.

Reasons for altering film curves can be:

- More detail in the shadows is needed.
Compensate by changing the current film curve from "Film standard" to "Film extra shadow"
- Images lack contrast.
Compensate by changing the current film curve "Film extra shadow" to "Film standard"

At the top of the exposure window is the standard "Apply to Selection" button. When there are several images selected in the Capture Collection the same levels or curves can be applied to all of them by clicking on this button.

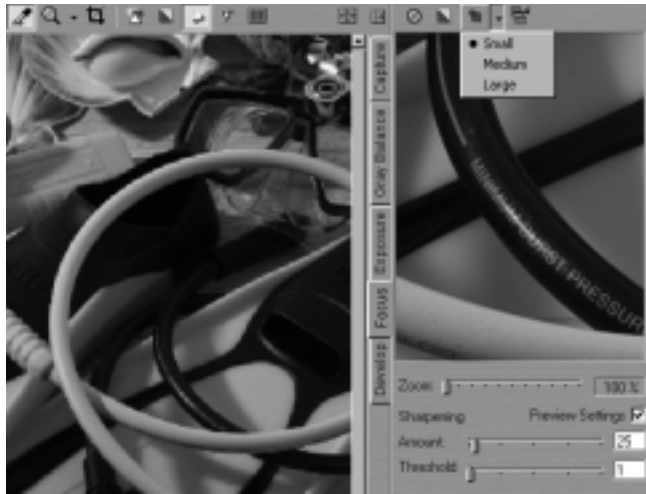
Exposure Compensation



In addition the exposure compensation slider can be used to raise or lower the overall exposure level. Choose between values from -1.0 to +1.0 EV.

Focus Tab

The focus tool does an instant development of a selected area of the image, which can be used for checking focus and sharpness (USM). In order to make image navigation easier and improve the focus tool new features have been added to the focus tool. One is the ability to choose between three different view sizes; small, medium or large. Another feature is the square orientation frame. The image displayed in the focusing window corresponds to the position of the orientation frame. Click on the focusing window to display the position of the orientation frame. The area shown in the focus window can be moved, either by moving the orientation frame directly in the preview window, or by dragging in the focusing window.



The orientation frame can be hidden automatically after a few seconds. Check the box “Hide focus orientation frame automatically” under the Other Settings tab in the Preferences dialogue box.

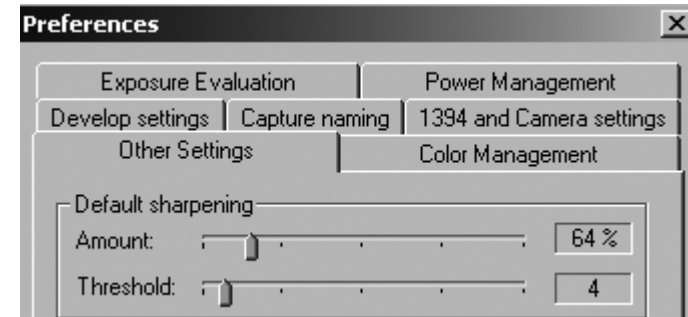
Focus Preview

To evaluate the focus of an image simply click on the area of the image (in the main Preview Window) and the Capture One software will zoom in to a 1:1 final image of that part of the photo. Zoom in more than 100% by using the slider below the Focus Window.

Sharpening

Also found under the Focus Tab is a preview of the Unsharp mask settings (also discussed later in this user guide). Experiment with different values to determine the correct setting for each image. Control the Amount (based on percentage values) from 0% up to 400% and the Threshold (the cut-off point where the sharpening will stop or start) from 0 to 50.

A third option found in many imaging programs, Radius, is fixed in the Capture One program at about 1 pixel. As the settings are adjusted they are updated in the preview image. This feature can be turned off by un-checking the “Preview Settings” box.



Automatic Focus Update

At the top of the focus window is the “Automatic Focus Update” button. When activated the Capture One software will automatically update focus window when subsequent images are taken. This is especially useful when setting up for a shot.

Show Focus in Grayscale

To make it easier to judge whether or not the focus is acceptable, click the “Show focus in grayscale”. This does not affect the developed file, it simply makes it easier to see the focus preview.

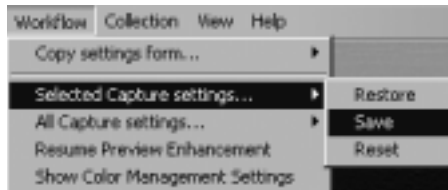


Menu Settings

You have various menu choices, among those are:

Save the Capture Settings

The capture settings you apply to the capture file prior to processing are stored along with its preview in the preview folder and can be used as a future reference. This means that settings like crop, USM settings, curves, capture name etc. can be restored at any time, even, if you intentionally or by mistake shut down the application.



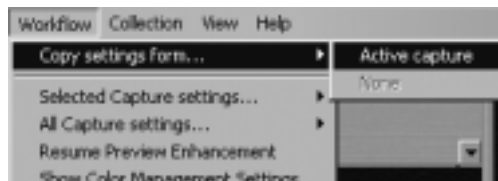
The capture settings are automatically saved when the application is closed down. To restore/save/reset the capture settings go to the Workflow pull-down menu or right-click on the mouse in the capture collection. Select 'Selected Capture settings...' or 'All Capture Settings...' followed by: restore, save or reset.

Reuse Capture Settings

The feature 'Copy settings from...' allows reuse of capture settings from for instance an earlier photo session.

Copy From Active Capture

You select the capture file you wish to copy from - the so-called reference, then you go to the Workflow pull-down menu and choose 'Copy settings from.../Active capture'.



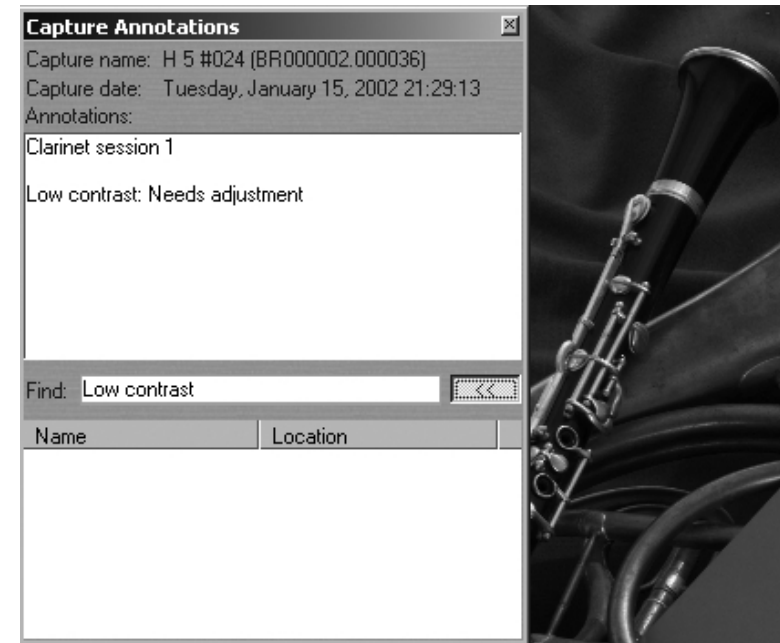
This feature is especially useful when shooting products where the lighting is fixed and where composition layout and cropping can be determined prior to the actual shooting.

As soon as you have appointed the reference file a magenta mark appears in the right corner of the thumbnail in the capture collection window. To deselect the reference file go to the Workflow pull-down menu, and choose 'Copy settings from.../None'.

Add Annotations

In the 'Capture Annotations' dialogue box you may add and store annotations relevant to the capture files.

Go to the Collection menu and select 'Show Annotations'. A dialogue box appears in which you can add or remove annotations.



The 'Capture Annotations' dialogue box also has search capabilities, which enable you to locate a specific capture file via its name or annotations. Key in search words in the Find field and click enter. The Find function will then locate all capture files matching the search. Once located, the capture file/files are displayed and can be selected directly from the result list, which appears by pressing the button to the left (<<).

Technical Note

All capture files include a dot as part of their original name (e.g. BR000204.009711), which means that if you only enter '.' in the Find field, then all capture files in the active capture collections (including Trash) will be displayed in the result list.

Embed Information in TIFF Files

For easy file tracking or integration with database systems you can choose to embed information in the developed TIFF file.



Go to 'Preferences' in the File menu, select 'Develop settings' and check 'Include capture information in TIFF Caption'. Once checked, information such as path file name, ID and Image Capture Software version is embedded in the TIFF image's caption tag.

Example

A TIFF file called "Outline" includes the following information:

Capturefile: D:\portraits\Outline

(corresponds to the actual path file name)

CaptureSN: B000059.001825

(corresponds to the unique ID of the capture file)

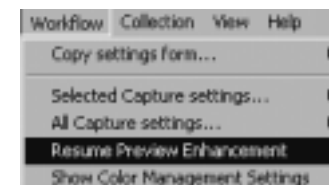
Software: Capture One 1.0 for Windows

This way you will always be able to identify your developed TIFF file later on in the process.

Automatic Preview Enhancement

The automatic preview enhancement guarantees that image previews are generated in a high quality in order to ensure an optimum image evaluation on the monitor.

It takes a while for the Capture One software to generate these previews and in some cases, for instance if you are working on-location with a lower performance portable computer, it might be a good idea to suspend this process to save time. Go to the Workflow menu and choose 'Suspend Preview Enhancement'. The preview enhancement is resumed again the same way.



Previews that have not yet been enhanced are marked with a small cyan mark in the Capture Collection.

Move To Collection

If a series of capture files are to be evaluated in order to determine which ones to keep and which ones to delete, then you can use the 'Move to' function. This allows you to move all the capture files to the collection that has been assigned the 'Move To' collection.

Select/create a collection: 'Keep'. Go to the collection pull-down menu or right-click on the mouse, and select 'Assign as the 'Move to' collection'. 'Keep' has been assigned as the 'Move to' collection and all selected capture files will now be transferred to 'Keep' if the Backspace-key is pressed. Also, you can right-click on the mouse and select 'Move To Keep' then all selected capture files are moved at once. If you wish to move the selected capture files to 'Trash' then use the Delete-key as a short-cut.

Develop Tab

Images captured by the Phase One camera back are stored as raw calibrated files. They must be processed by the Capture One application before they can be used in any other program. The raw files can be archived and processed at a later time, or processed immediately. Archiving raw files saves space and makes it possible to process one single image for various purposes; a high resolution color image for a printed page or a low resolution image for a web site.

To process an image, it first must be opened in the preview window. It may help to think of the development stage as similar to print making in the darkroom. After loading the image into the Preview Window the first step will be to gray balance and crop the image. Then adjust the brightness, contrast and color. Finally the image is developed by clicking on the Develop button. This section of the application is used to control the final output size of the image to be developed.

A full image, with no cropping will read approximately 26x17 cm (10x7 inches) at 300 pixels (dots) per inch.

The file size of this is approximately 18MB, as listed in the "File Size" section.

If a crop is made, the output size of the cropped area will be listed in the Width, Height and Resolution fields.

Clicking the "Soft Proofing" button will apply the color settings, selected in the Preferences.

Images can also be named in the "Image title" field. Naming images at this stage will make it easier to find and identify the photos later. If no name is assigned, the application names images automatically, based upon selected preferences.



A row of buttons in the Batch Editor section control when images will be developed. The buttons are:

Develop Image

When clicked the currently selected image will be developed immediately using the current settings.

Add Image to Batch

The application can develop a group of images in a batch mode. This allows the photographer to queue several images and develop them later. To add an image to the list click this button. The name of the image is added to the batch list.

Remove Image from Batch

To delete an entry from the develop list, choose the item from the list and then click the "Remove" button

Begin Developing Batch

To develop queued images, click the „Begin“ button and the application will begin processing the files.

Stop Developing Batch

This button cancels the development of the list of images.

View Recently Developed

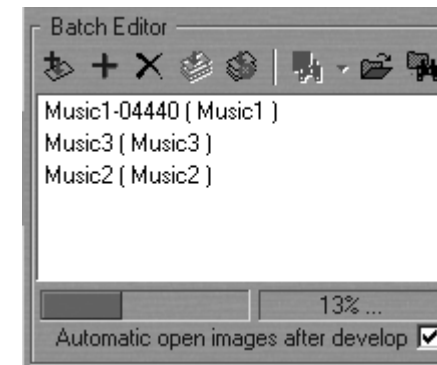
To access a list of the recently developed images use the "View Recently Developed" button.

Set Develop Folder

Select where developed images will be stored by clicking on this button and navigating to the desired folder.

Browse Develop Folder

Clicking on this button will open the currently selected develop folder.



At the bottom of the Develop tab is a status bar that shows a development progress bar and the percentage of the image that has been developed and the approximate time left to develop the image. After development images can be automatically opened in Photoshop. Images shot in portrait mode must be rotated using Photoshop's "Rotate" command.

Export Previews

The export preview function allows generation of low resolution previews of the captured images. These previews can be sent to the customer for approval or used in image databases, on web sites or as contact sheets.

The capture file you wish to export is selected the Capture Collection. Then you go to the Collection pull-down menu and select 'Export previews...' and the Export previews dialogue box appears (c.f. screen dump).

The dialogue box provides you with the following options:

File Format

You choose the file format you wish to work with - TIFF or JPEG. If JPEG is selected then you must define the level of compression in the Quality field. 'Maximum' compression provides you with the smallest file and the fewest image details and vice versa.

Image Size

In the Image Size field allows image resizing in percentages or pixels. 50% is the default size/resolution of a preview.

The 'Apply Sharpening' box enables/disables the sharpening settings from the Capture One software or from third party applications.

The 'Use image crop' box is checked if you only wish to export the image crop.

Apply Color Management

The color management settings in Export previews are independent of the application's color management set-up. However, it is recommended that you choose the camera profile that matches the image's capture conditions e.g. flash, tungsten etc.

Destination Folder

The Destination Folder is where you organize the workflow. You choose your own destination folder. If no destination folder is selected then a default folder called 'Exported Previews' is created inside the capture collection folder.



Name Postfix

In this field you can add unique image names/ID. To process the previews click on the 'Export' button. All settings in the dialogue box are stored as default settings and can be reused or changed at any time.

Create CD-ROM and Web Index

As a special feature you can use the export previews function to create CD-ROM and Web indexes.

To do so please use the following set-up:

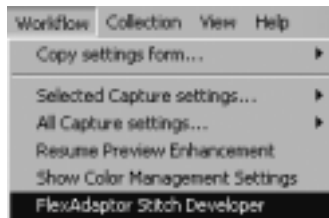
- Select medium JPEG compression
- Scale the images between 15% to 25%
- Apply color management and select the 'sRGB' destination profile
- Use the default destination folder
- Check the 'Create HTML index' box
- Enter a caption for the HTML page
- Press the 'Export' button

Then you burn the entire capture collection on a CD-ROM. The CD-ROM now includes all capture files as well as all the image previews. Also, if you have an Internet browser installed on your computer, you may double-click on the Index.html and view all previews via the internet.

Automatic Image Stitching

Automatic image stitching allows stitching of two or three overlapping capture files. This fully automatic feature makes it extremely easy to stitch images captured by the Phase One FlexAdaptor, and is a great alternative to the Adobe Photoshop actions. Automatic stitching can also be used for other stitching purposes.

- Capture two or three images with the FlexAdaptor
- Select the images/capture files you wish to stitch together in the Capture Collection (Use the Shift key)
- Go to the Workflow menu
- Select 'FlexAdaptor Stitch Developer'
- Press the red cross to import the capture files



Now you have the following options:

Change Image Order

If you wish to change the order of the capture files, you may do so by pressing the 'Identify stitch order' button (c.f. below). A grey dialogue box appears at the top of the capture files allowing you to change the order of the capture files by a simple mouse-click.



Rename Image

Enter the name of the image in the 'Image title' field. If no name is entered, the stitched image will be named after the first capture file that was selected in the Capture Collection.

Select Overlap

The Overlap pull-down box relates to the various capture modes the FlexAdaptor offers.

Select 'Narrow', if images were captured with a narrow overlap (about 100 pixels):

- LightPhase/Phase One H 10 two-shot mode (yellow dots) or three-shot mode (white dots)
- Phase One H 20 two shot mode (green dots)

Select 'Wide' if images were captured with a wide overlap (about 1,500 pixels):

- Phase One H 20 two-shot mode (yellow dots)

Select 'Landscape' if images were captured in landscape mode:

- LightPhase/Phase One H 10 two-shot mode (yellow dots)

Enlarge Preview Window

Press the 'Expand stitch preview area' button to the right to enlarge the preview window.

Process Image

Initiate the processing by pressing the 'Develop' button. The selected capture files are now stitched together, and can be opened as a TIFF file in Adobe Photoshop or other image editors afterwards.

15 Tools

Many of the tools in the Phase One application act in much the same way as the tools of popular image editing applications such as Adobe Photoshop. Many of these tools actually come from the traditional world; the cropping tool is the first example of this, mimicking the cropping “L’s” used by artists and photographers.

Right-clicking on the tool icon gives access to the preferences dialog box.

Eyedropper

The Eyedropper tool is used to read the RGB or CMYK values of a particular area of an image. The area measures 3x3 pixels.



Zoom Tool

Select the Zoom tool and click on the preview image to zoom in. Use option-click (Alt key) to zoom out. Remember, the preview image is only a low resolution image and will quickly pixelate when enlarged. Click the black arrow to the right. A zoom slider appears, which allows you to zoom in and out.



Cropping

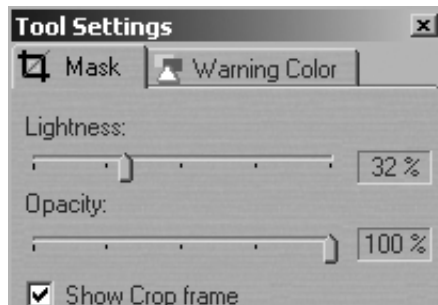
Select the Crop Tool, located above the Preview Window. Move the on-screen pointer to the image in the Preview Window. Click and drag the mouse so that a box is drawn surrounding the area of the image to be selected. Then release the mouse button.



The rectangular box, which now surrounds part of the image, can be adjusted in size and position. There are points at the corners of this box, that can be clicked and dragged, to change size and position.

Crop Mask Tool

When turned on, the Crop Mask Tool will mask the area of the preview image that is outside the selected crop area. Right-clicking the Cropping Tool allows the color and opacity of the crop mask to be set. This tool is a useful feature when showing images on-screen, as the cropped area is clearly shown.



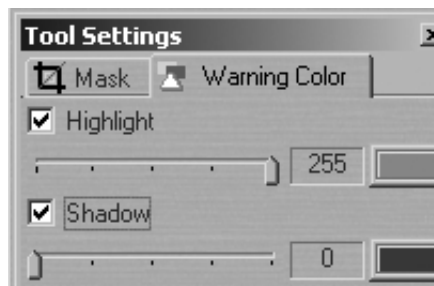
Exposure Warning Tool

This tool quickly shows which areas of the image are either over or under exposed.

Much like Photoshop's "Gamut Warning" tool, when the "Exposure Warning Tool" is activated a colored mask will be applied to the image showing which areas of the image are above or below a set exposure value.



Right-click the tool icon to set the over and under exposure values and to change the highlight colors.



In general, if the exposure warning is shown over a large area of the selected image, it indicates that the exposure level may need to be adjusted. Highlight areas are more critical than the shadows. Preserve highlight detail by not allowing values greater than 240.

Gray Scale Viewing

The preview is shown in grayscale. This does not affect the developed file.



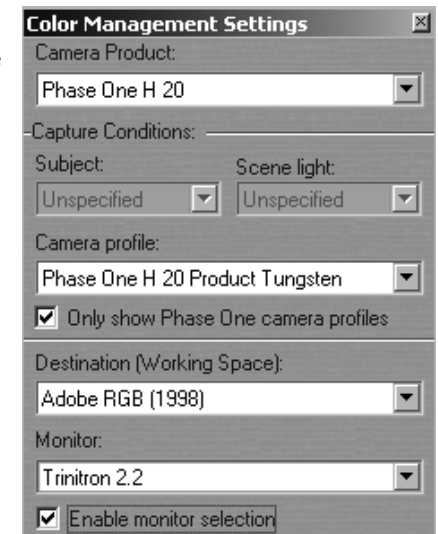
Soft Proofing and Color Management

The Phase One camera back is designed to work as part of an ICC color management workflow.



The camera, monitor and printer are specified in the Capture One application, and the processed image will be customized for that specific input and output configuration. By pressing the soft proofing button the application will display the image according to its color management settings.

It is important to select the appropriate camera profile before shooting, however, if required changes can be made to the profile settings from one capture to another. This is done by means of the ICC profile pull-down menus in the Tool Settings dialogue box. The effects of the changes are seen immediately in the preview and collection views provided that the color management button is active.



To use Color Management effectively, the profiles of the camera, monitor and destination must be defined. If all three devices are not correctly specified there is a risk that the final image will not correspond to the captured image.

The Capture One Software installs basic profiles for Phase One camera back as well as a generic monitor profile (Phase One - PC monitor) and a selection of destination profiles.

To set ICC profiles right-click on the Color Management button.

A brief guide to preference settings is provided here:

Camera Profile

Select the correct profile: Phase One Product Flash, Phase One Tungsten, Phase One Outdoor Daylight or Phase One Portrait.

Destination

Select between the available CMYK printer profiles or RGB color space profiles.

Monitor

A default monitor profile is selected. To enable the monitor selection - check the Enable Box.

When setting up ICC profiles select from the Develop tab/Color Management workflow either Embed Camera Profile or Match to Destination.

If **Embed Camera Profile** is selected the software will automatically embed the selected ICC camera profile in the developed TIFF file. The embedded profile then serves as a conversion table that can be used by other applications, e.g. Adobe Photoshop, in order to convert the image into the specified.



Match to Destination automatically embeds the selected ICC destination profile in the developed TIFF file. The application will convert the image on-the-fly to the default workspace or to CMYK.

Embed Camera Profile or Match to Destination can be selected as the default in the File /Preferences/Color Management/Default workflow. The default setting is activated the next time the application is started.

It is possible to create your own ICC profile and import into the Capture One software. Any ICC compliant profile can be used with Phase One camera backs

For Windows 2000 place the desired profile in the "Color" folder under WinNT/System32/Spool/Drivers.

For Windows 98 place the desired profile in the "Color" folder under Windows/System

Restart the application and the new profile will appear in the Preferences pop-up menu.

Using third-party software, customized printer or monitor profiles can be made and installed. This gives greater color management control of the workflow environment.

Simulate Sharpening Settings

The image is previewed with the specified Unsharp Mask (USM) settings. To alter the USM settings open the Preferences/Other Settings dialog box.



Unsharp Mask

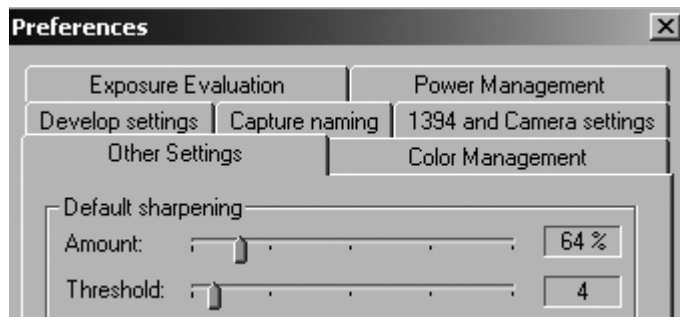
The name “unsharp mask” (USM) can be misleading. Using this tool actually gives an apparent increase in image sharpness by enhancing the edge differences between pixels of different colors. When applied, the software evaluates the contrast differences between pixels and either enhances the difference or not, based on setting made in the preferences. There are two controls over the USM:

Amount

The amount of change is entered here as a percent. The higher the setting, the more sharpening that will be applied.

Threshold

The threshold level controls at what level the sharpening will begin. At the default “0” setting the sharpening amount is applied to every pixel. As you adjust the setting up, you control where the sharpening will begin.



Banding Suppression (Phase One H 20 only)

In order to print or display images with correct colors a color correction as well as a tonal adjustment has to be applied to the image data. This color correction is typically taken care of by ICC profiles and internal correction tables like monitor gamma curves. An application like Adobe Photoshop uses ICC profiles to ensure correct colors.

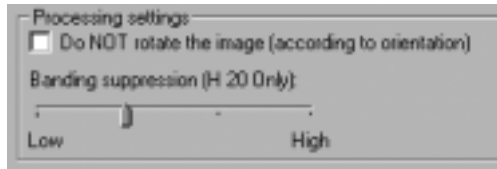
Currently monitors and RGB printers only handles 8 bit per channel i.e. 256 levels of shades per channel. The required color correction and the tonal correction will reduce the number of shades. In a perfectly clean image with smooth image gradients the lacking shades may appear as bands. The gradients seem to jump in tone values.

Offset printers and most RGB printers are not able to print 256 levels of shades, which means that visible monitor banding typically never shows up in the final print.

The Phase One H 20 produces very clean image files with very low noise and even in 8 bit per channel the H 20 produces all 256 levels of shades. However, due to the color corrections carried out by other applications like Adobe Photoshop or printer drivers, image banding may be visible in smooth gradients. The visible banding is likely to be enhanced if the image is manipulated in 8 bit per channel.

In order to minimize visible banding you can use the banding suppression slider. The slider will during the development of H 20 images in 8 bit adaptively introduce a certain amount of highly controlled variation/dithering to the image data.

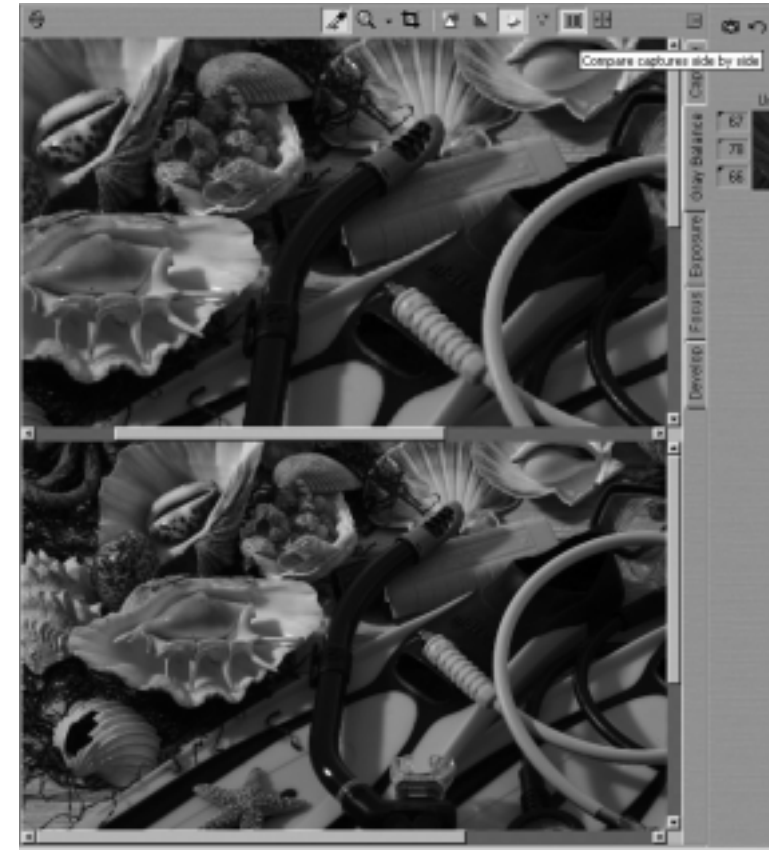
The banding suppression slider has 4 positions:



1. The first position adds a minimum of 'variations' to the image. Use this setting if you wish to maintain a very clean image, if banding does not seem to be a major issue and if the image does not have any critical areas (e.g. large uniform areas).
2. The second position is the default setting. This setting is the ideal compromise between maintaining a very clean image while suppressing banding.
3. The third position adds more 'variation' to the image than the default setting. This setting is recommended if the image shows signs of banding on a monitor or on the printer.
4. The fourth position adds a larger amount of 'variations' to the image. This setting is not recommended unless the banding is really severe as it will compromise image quality. The image quality can be compared to the quality of scanned films, and this setting could therefore be used for Phase One H 20 images that appear side-by-side with scanned image.

Compare Captures Side By Side

The active capture file is marked with a white frame, and is the one that can be edited with a change of gradation curve, gray balance, color balance or exchanged with a new capture file from the capture collection. Click on the other capture file to activate it. Files from different collections can also be compared. If you compare capture files from different collections use F2 to access the active capture file. The layout of the two captures is automatically adjusted to make full use of the preview area. However, if there is lack of space then hide the function tabs by pressing F6 (see also Expand Preview).



Zoom to Fit Preview

Click to fill the preview window with the image.



Expand Preview

Click to minimize the Function Tabs and expand the Preview window. To restore the original settings click on the button again, or click on the Function Tabs.



Composition Mode

Composition mode is very useful when setting up and adjusting the lighting and framing, prior to shooting. Warning triangles appear, to indicate that composition mode is activated.

Composition mode only saves the last captured image, which means no deletion of unwanted capture files.



Rapid Capture Mode

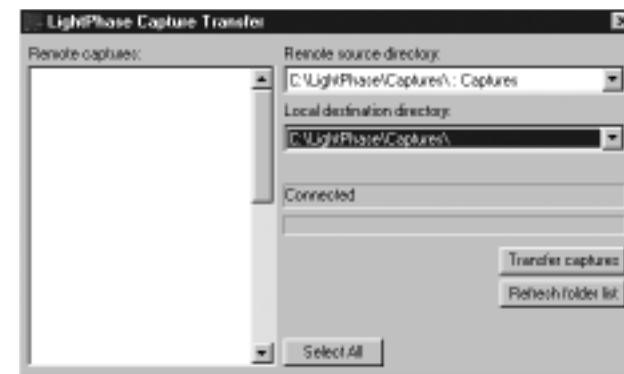
Disable preview generation by selecting Rapid capture mode from the toolbar. Viewing previews after a session allows the computer to work faster. This feature is particularly designed for notebook computers. Although no preview is generated in Rapid capture mode the software still displays a memory-based preview of the captured image and performs exposure evaluation. Missing previews can be regenerated at a later time by simply clicking on the Refresh button in the capture collection window.



16 1394 Capture Transfer For Windows Me/98

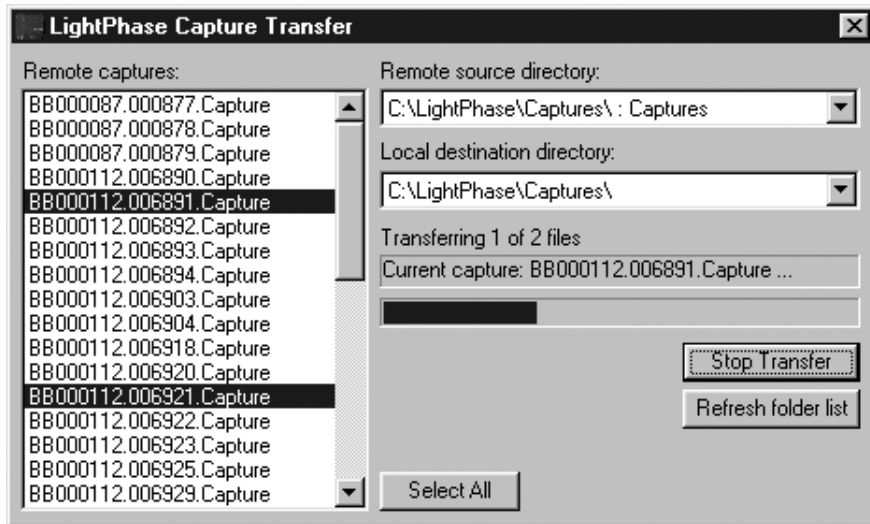
Being able to quickly move captured photographs from computer to computer is an important part of a workflow. This allows a photographer to be in the studio shooting while another person connects to the capture computer and develops the images. This utility also makes it easy to move files from a slow portable laptop computer to a fast desktop processing station. Phase One has written special software that allows the transfer of capture files over the IEEE1394 bus. This allows for almost seamless integration of two workstations. To set this system up you must have two workstations connected together via 1394 cables. After installing the applications (Capture program, 1394 Server software, 1394 Transfer software) on each workstation connect the two machines together via the 1394 cable. After the computers are connected click the default buttons allowing Windows to install the drivers.

When using 1394 to transfer captures, one machine acts as the "server" while the other runs the "Capture Transfer Utility" (found in the "Start—> Programs" menu). After starting the program it will say "Connected" in the status indicator showing that the application is connected to a remote server and is ready to transfer captures.



Use the "Remote source directory:" pop-up menu to choose the capture directory from the remote machine (there will be one entry in the menu for each capture tab in the application on the remote machine). Use the "Local destination directory:" tab to choose the "to" folder where you wish the capture files to be copied to. There will now be a list of all of the capture files available on the remote computer on the left hand side of the window. You can select the desired files manually or click the "Select All" button to choose all files.

Click the "Transfer captures" button to begin the transfer. As the captures are transferred the status indicator will show how many files have been moved. When finished, open the Capture One application and you can process the images as if they were captured on the local computer.



17 Camera Information

The Phase One camera back has an “info” function that displays important information about the connected camera back. This information can be invaluable in troubleshooting problems. If you ever need to contact technical support, be sure to have this information available. To access this data choose “About” from the “Help” menu. See also Trouble Shooting.

18 Additional Features

Demoirize Plug-in

The Phase One Demoirize plug-in for Adobe Photoshop allows you to remove moiré patterns from your images by means of three different filtering modes: Advanced, Unicolor textiles as well as Skin and Hair.

The Demoirize plug-in window is divided into two separate previews: Original Image, which displays the image before it was corrected (to the left) and Corrected Image, which displays the image after it was corrected (to the right). The plug-in is enclosed on the CD-ROM and will be placed in Adobe Photoshop's plug-ins folder when you install the Capture One Software.

Advanced Mode

Advanced mode is a new filter tool. It is also the default mode of the Demoirize plug-in. In advanced mode the filter estimates colors by means of the Quality/Speed slider and the Pattern Size slider. Often the color moiré is visible by multiple red/green or blue/yellow areas of discoloration. These areas of discoloration are seen as bands or stripes. The larger the band or stripe, the larger the pattern size setting should be.

Pattern Size

The best way of finding the optimal pattern size is by setting the Quality/Speed slider to Speed while moving the Pattern Size slider towards Large. While moving the slider the effects of corrections are seen on the screen. Selecting a larger than necessary pattern size will not generally enhance the result. A circular arrow icon that turns indicates that the Demoirize filter is currently calculating image data.

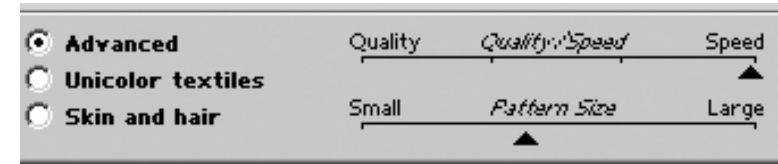
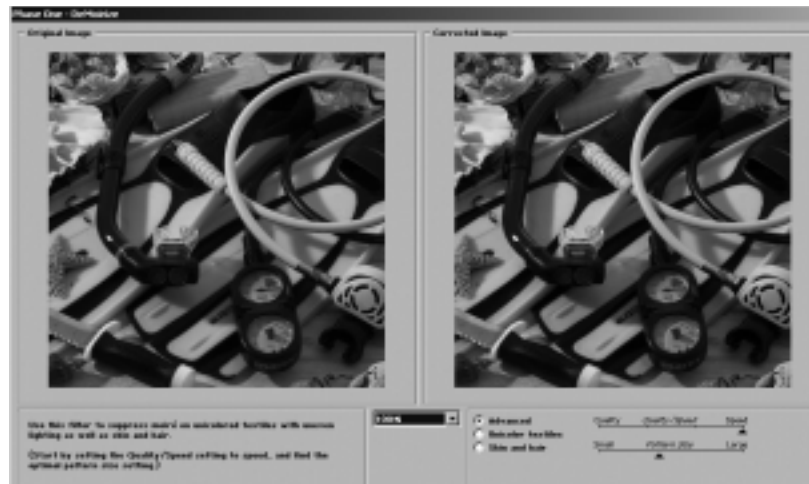
Quality/Speed

When large areas of moiré stripes and bands are present the Quality/Speed slider should be set towards Quality, at the cost of Speed.

Use the Quality setting when details smaller than the selected pattern size should be less affected by the filtering.

Using Advanced Mode on Skin and Hair

For skin and hair surfaces the optimal settings for the advanced filter would be to position the Quality/Speed slider at Speed and the Pattern Size slider very close to Small. Please note that large color moiré areas in hair may require a larger pattern size setting.



Using Advanced Mode on Textiles

On textile the optimal settings for the advanced filter would be to position the Quality/Speed slider towards Speed, or in an intermediate position. Then move the Pattern Size slider to the smallest possible setting. In many cases the masking of unicolored, or nearly unicolored areas, may be carried out less accurately with the advanced filter compared to the Unicolor textiles filter. Since masking depends very much on the type of image, it is recommended to test different masking and filter settings.

19 Trouble Shooting

If technical problems are experienced when working with the Capture One Software it may be necessary to contact Phase One's Technical Support department.

Phase One recommends that you do a screen dump of your system configuration. This can be done in the menu Help/About, then press Print Screen to generate a screen dump of the current settings. Then open and save the screen dump in any image editing software.

Fax or e-mail your Camera Info and the System Profile to Phase One's Technical Support department.

20 Strobe Equipment

Strobe Equipment Compatibility

Phase One's single shot digital imaging systems support photographic strobe equipment that is regulated by the ISO standard 10330. However, since some strobe equipment does not comply with this standard, Phase One has expanded the tolerances past those of the ISO standard. If your strobe system does not comply with the above-mentioned ISO standard please use the tolerances in the below tables as reference.

Trigger specifications for Phase One camera backs:

	ISO Standard Max.	Phase One Max.
Voltage*	24V DC	500V DC
Current**	100mA	1A
Fall time***	1ms	1ms

LightPhase S/N BB00/BB01:

	ISO Standard Max.	Phase One Max.
Voltage*	24V DC	300 VDC
Current**	100 mA	130 mA
Fall time***	1ms	20 μ s

Notes:

- * Voltage across the sync terminals of the camera and the ignition terminals in the flash
- ** Current through camera sync terminal
- *** The time it takes for the camera to short-circuit

Also, please note that many of the strobe systems in the below tables have not been thoroughly tested by Phase One. However, if they carry a "+" under status, then they either comply with the above-mentioned ISO standard or stay within the max./min. limits below.

Strobe Systems**Status**

Balcar P4 pack	.*
Bowens Estime 3000	-
Bowens Estime 3000AMF	+**
Bowens Estime 3000ASC	+**
Bowens Esprit 2 125	+**
Bowens Esprit 2 250	+**
Bowens Esprit 2 500	+**
Bowens Esprit 2 1000	+**
Bowens Esprit 2 1500	+**
Bowens Duo	+**
Bowens Equipe	+**
Bowens Redwing	+**
Bowens Travelite	+**
Bowens Prolite (old)	+**
Bowens Traveller "G" (Old)	+**
Bowens Estime 250(old)	+
Broncolor IRI (old)	-
Broncolor IRS 2 (old)	-
Broncolor Graphite	+
Broncolor Fashion	+
Broncolor Opus4	+
Broncolor IRX 2	+**
Broncolor IRQ	+**
Comet S-2400A	+
Comet ALS-2400A	+
Comet SS-600	+
Comet CA-1600	+
Comet CX-124T	+
Comet CX-124III	+
Comet CB-2400III	+
Comet CRW-1200	+
Comet CT-150	+
Comet PMT-1200	+
Comet CT-08	+
Comet ILS-800D	+

Hensel Nova	+
Hensel Linea	+
Hensel Logica	+
Hensel 500	+
Hensel 1000	+
Lumidyne Voltage Regulator	+
LPA Design LVT Trigger	+
Metz 60ct-4 Handheld	+
MultiBlitz Varilux	+
MultiBlitz Compact 300	+
Norman P40/40	+
Norman P24/24	+
Norman P800D	+
Norman P404	+
Norman 808	+
Norman Monolite	+
Norman P2000	+
Norman P1250D	+
Norman 2000PS	Warning
PocketWizard Radio Link	+*
PowerLight PL 300DR	+**
PowerLight PL 1250	+**
PowerLight PL 1250DR	+**
PowerLight PL 1250DRG	+**
PowerLight PL 2500DR	+**
Profoto ProCompact	+*
Profoto ProPack	+*
Profoto Acute 12A	+*
Profoto Pro 6	+*
Profoto Pro 7	+*
Quantum Radio Slave IV	+
Speedotron 1205 Pack	-
Speedotron 2405cx Pack	-
Speedotron Black Line	-
Speedotron Braun Line	-
StudioMax PG 4001ML	+**

Strobe Equipment

StudioMax PG 3001MLB	+**
White Lightning 5000 (old)	+
White Lightning 10000	+
White Lightning Ultra 600 (old)	+
White Lightning Ultra 1200 (old)	+
White Lightning Ultra 1800 (old)	+
White Lightning Ultra Zap 800	+
White Lightning Ultra Zap 1600	+
White Lightning Ultra Zap 2400	+
White Lightning X800	+**
White Lightning X1600	+**
White Lightning X2400	+**
White Lightning X3200	+**

Notes:

Warning: Norman 2000PS produces strong voltage should never be used with Phase One camera backs.

* = More tests need to be carried out - if in doubt please contact Phase One or send the above trigger specifications to the strobe manufacturer

** = Not compatible with older LightPhase models (S/N BB00/BB01)

21 Photographic Equipment

Photographic Equipment Compatibility

Phase One camera backs support various camera bodies and lenses.

The below table shows the photographic equipment that Phase One recommends (+) or does not recommend (-) you use together with Phase One camera backs.

Phase One H 5/H 10/LightPhase for Hasselblad

Camera Systems	Status
500 C	+
500 CM	+
501 CM	+
503 CW	+
553 ELX	+ ³
503 CW (Winder CW)	+ ³
201 F	+ ²
202 FA	-
203 FE (Do not use FE lenses)	+ ²
205 FCC	+ ²
903 SWC/Biogon CF38	+ ⁴
555 ELD	+ ⁵
ArcBody	+ ¹
FlexBody	+ ¹

Lenses

500mm f/6 APO	+
C-lenses	+
CB-lenses	+
CF-lenses	+
CFA-lenses	+
CFi-lenses	+
Distagon CF30	+
Distagon CF40	+
FE-lenses	-
Tele-Apotessar CF500	+
Variogon 140-280	+

Lenses via Adaptors

Rollei Xact2	+ ¹
Mamiya RB	+ ⁶
Fuji GX680	+ ⁶
Nikon 35mm	+ ⁶
Pentax 35mm	+ ⁶
Nikon 35mm	+ ⁶
Olympus 35mm	+ ⁶
Canon 35mm	+ ⁶
Minolta 35mm	+ ⁶
CONTAX 35mm	+ ⁶
Sinar 4x5 > f-90mm	+ ⁶
Horseman 4x5 > f-90mm	+ ⁶
Toyo 4x5 > f-90mm	+ ⁶
Arca Swiss 4x5 > f-90mm	+ ⁶
Linhof 4x5 > f-90mm	+ ⁶
Cambo 4x5 > f-90mm	+ ⁶
Alpa 4x5 ≥ f-35mm	+ ⁶
Resolution LP-Wide ≥ f-45mm	+ ⁶

Electronic Shutters

Horseman ISS-G2 Shutter	+
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Phase One H 5/H 10/LightPhase for Mamiya RZ67 Pro II

Camera Systems	Status
Mamiya RZ67 Pro II	+

Lenses	Status
RZ67	+
50mm f/4.5	+
65mm f/4	+
90mm f/3.5	+
110mm f/2.8	+
150mm f/3.5	+
180mm f/4.5	+
210mm f/4.5 APO	+
250mm f/4.5	+
250mm f/4.5 APO	+
350mm f/5.6 APO	+
500mm f/8	+
100-200mm f/5.2 Zoom	+
37mm f/4.5 Fisheye	+
75mm f/4.5W Shift	+
140mm f/4.5 Macro	+

Phase One H 5/H 10/LightPhase for Mamiya 645AF (NOT 645D)

Camera Systems	Status
Mamiya 645AF	+

Lenses	Status
Mamiya 645AF	+

Electronic Shutters	Status
Horseman ISS-G2 Shutter	+

Phase One H 5/H 10/LightPhase for CONTAX 645

Camera Systems	Status
CONTAX 645	+

Lenses	Status
CONTAX 645	+

Lenses via Adaptors

Hasselblad Carl Zeiss	+ ⁶
CONTAX 35mm	+ ⁶
Nikon 35mm	+ ⁶
Pentax 35mm	+ ⁶
Sinar 4x5 > f-90mm	+ ⁶
Horseman 4x5 > f-90mm	+ ⁶
Toyo 4x5 > f-90mm	+ ⁶
Arca Swiss 4x5 > f-90mm	+ ⁶
Linhof 4x5 > f-90mm	+ ⁶
Cambo 4x5 > f-90mm	+ ⁶

Electronic Shutters

Horseman ISS-G2 Shutter	+
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Phase One H 20 for Hasselblad/Mamiya RZ67 Pro II

Camera Systems	Status
501 CM	+
503 CW	+
553 ELX	+ ³
503 CW	+
503 CW (Winder CW)	-
555 ELD	+ ⁷
Mamiya RZ67 Pro II	+

Lenses via Adaptors

Rollei Xact2	+ ¹
Sinar 4x5 > f-90mm	+ ⁶
Horseman 4x5 > f-90mm	+ ⁶
Toyo 4x5 > f-90mm	+ ⁶
Arca Swiss 4x5 > f-90mm	+ ⁶
Linhof 4x5 > f-90mm	+ ⁶
Cambo 4x5 > f-90mm	+ ⁶

Electronic Shutters

Horseman ISS-G2 Shutter	+
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Notes:

1. Works in "two-shot mode": Release shutter once to wake up the Phase One camera back prior to capture
2. Does not work with FE lenses - works with C, CB, CF, CFA, CFi lenses
3. Requires special motor cable to enable capture from host computer
4. Press Capture button on host computer prior to release button on camera body
5. Camera must be operated in "FILM" mode.
6. Via optional adaptor from Phase One or 3rd party manufacturers
7. For best performance operate camera in DIG mode

22 Hardware Recommendations

Phase One recommends that the following hardware set-up be used by Phase One camera backs:

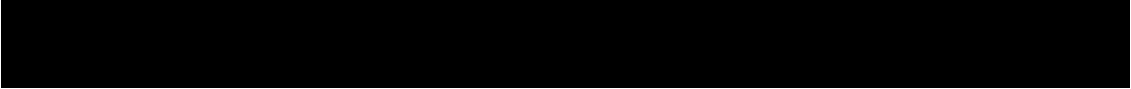
Mac:	G4 (min. G3)
RAM:	min. 256 MB (preferably more)
Operating system:	Mac OS 9.1/X
Ports:	One available USB and FireWire port

PC:	Pentium III
RAM:	min. 256 MB (preferably more)
Operating system:	98SE/Me/2000/XP
Ports:	One available USB and FireWire port

Please note that Sony Vaio PictureBook laptops will require at least 192 MB in order to operate at a satisfactory speed.

Portable/Laptop: Please note that portable platforms/laptops **MUST ALWAYS** be connected to the Phase One camera back via Phase One's portable solution.

Multiprocessing: The Capture One software supports multiprocessing. This means that when installed on dual processor platforms image processing is reduced considerably.



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