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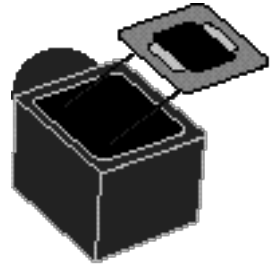
2) If a Mamiya RZ67 Pro II is used, connect the mounting plate to the camera and then connect the cable from the mounting plate to the connector on the front of the Mamiya. Be sure that the cable is connected and locked properly; the latching mechnism will be on the bottom.

Lens Flash Sync to Mounting Plate Flash Sync

IEEE1394 cable to computer

Cable from Mounting Plate to Mamiya Body

Flash Sync to strobes
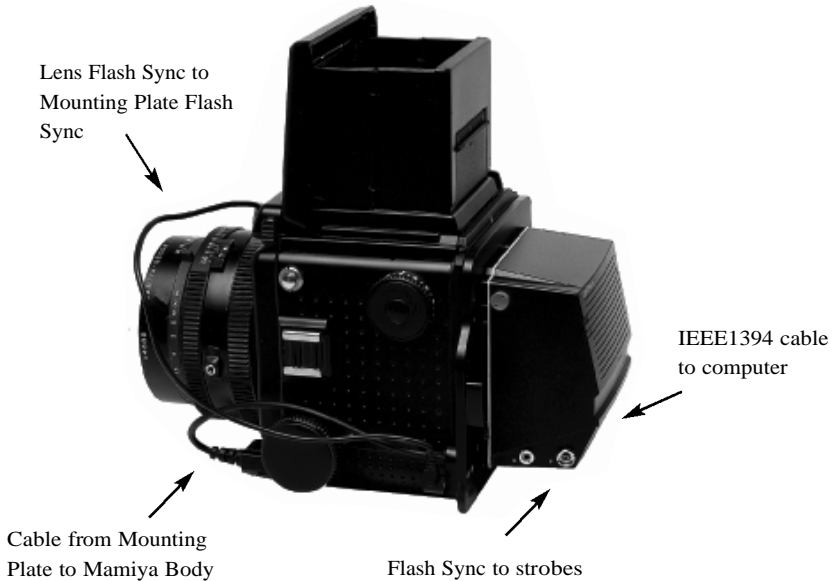
Cable Connections for the Mamiya RZ67 Pro II

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 most recent Camera Updater can be downloaded from Phase One´s website. www.phaseone.com and is found in the Tech Support/software download section.

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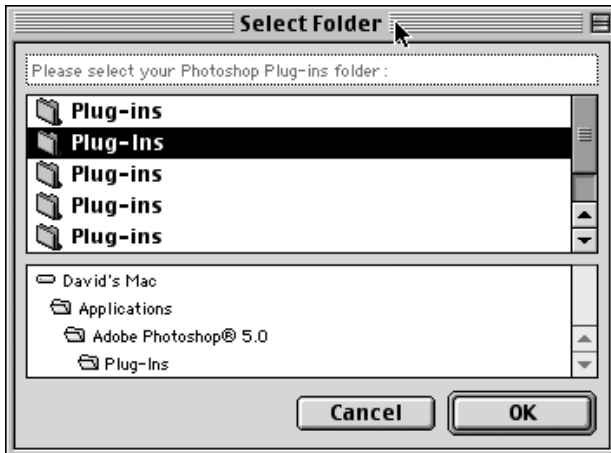
6) Follow the on-screen prompts. When the installation is completed, restart the computer.

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:

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

Scripts
The "Scripts" folder holds sample scripts for the Capture One application.

Other Folders
The insttaller also creates folders for:

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. The default location for capture files is in the users Home Directory un the folder Captures.

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

Previews

The software application automatically creates a low resolution (approximately 2MB) preview image to use for color and tonal adjustments. All preview files are stored in the "Previews" folder in Libarary/Application Support/Phasee One. If any files are deleted from here the program will automatically generate new previews the next time the Capture One software is started.

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 Phase One LightPhase, H5 and H 20 camera has a choice of two sensitivities: 50 ISO or 100 ISO. The Phase One H 10 has a range from 50 to 400 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.

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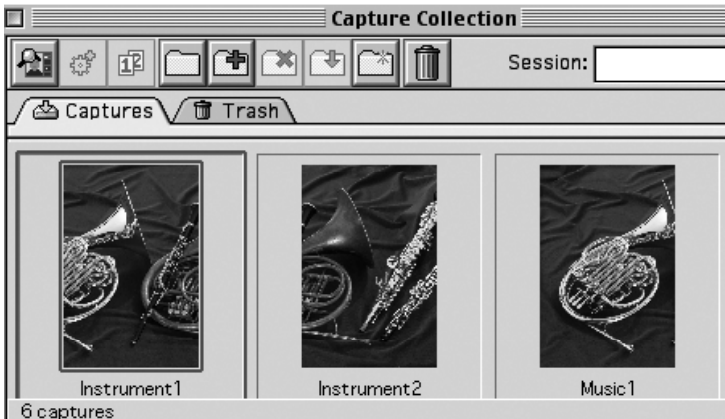
14 items, 4.02 GB available	
Name	**Date Modified**
▽ Captures	Today, 15:12
▽ Fashion	Today, 15:14
▷ Green outfit	Today, 15:14
▷ Red outfit	Today, 15:14
▽ Outdoor	Today, 15:14
▷ Cars	Today, 15:14
Film Curves	Sat, Dec 15, 2001, 13:25
▷ Goodies	Sat, Dec 15, 2001, 13:25
▷ Images	Fri, Dec 21, 2001, 13:44

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.
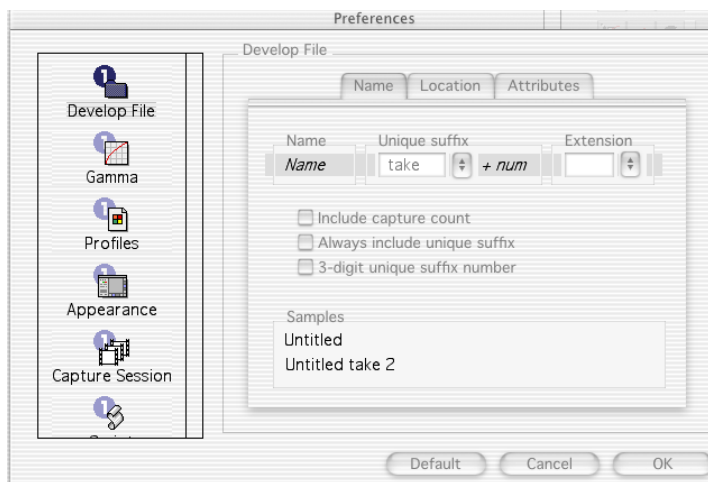
Workflow Optimization

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.
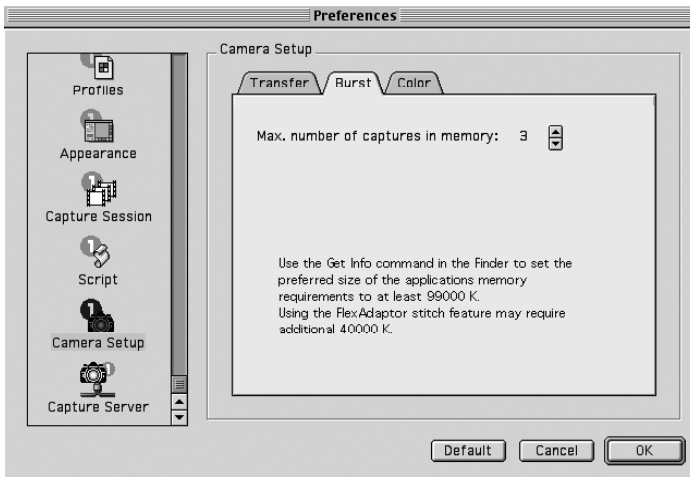
Technical Note
Capture files are stored in the RAM before being moved to the capture
collection folder on the hard disk or the Capture Server. Above the
Capture button, in the Preview window, is a row of green lamps. These
lamps indicate the number of RAM buffers ready to receive a new
capture file. 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 sec. as default (Preferences/Camera
Set-up/Transfer tab). This is the time it takes to transfer images from the
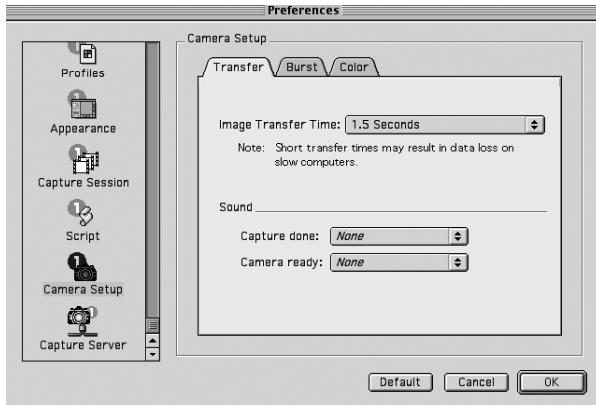back to the host computer.

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.
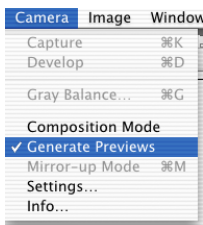
4 Editing and Selecting Images

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.

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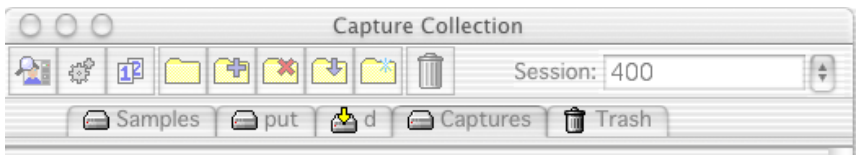
A deleted image is moved to the "Trash" folder of the Capture Collection. If an image is mistakenly deleted it can be restored to it's original location by clicking on the Trash can icon marked with a red "X".

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:

Over

Correct

Under
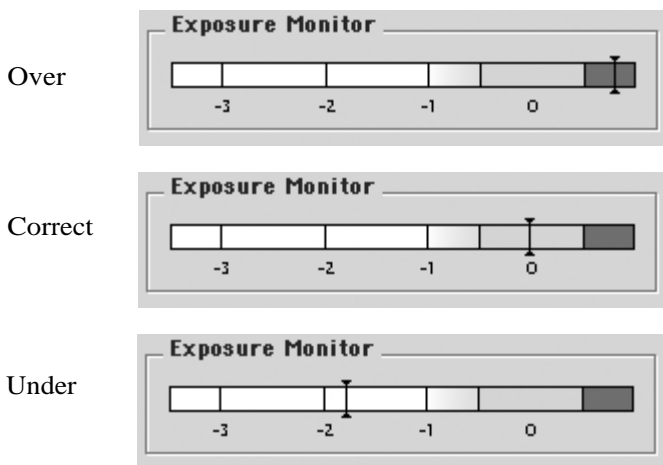
Develop Specification

This section of the Capture One application is used to control the final output size of the image to be developed. A full H 10 image, with no cropping will read approximately 34x22 cm (8x13 inches) at 300 pixels (dots) per inch. The file size of this is approximately 30MB, 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.
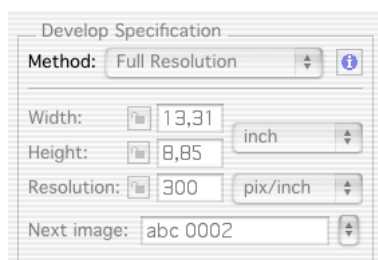
Resizing Images

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.
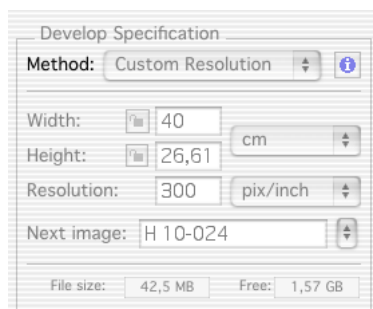
Color Info

> One of the most important displays of the Preview Window is the "Color Info" window. This panel shows the individual 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 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.
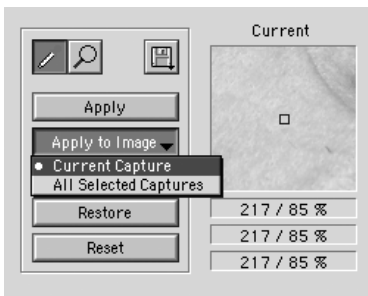
Color Adjustment
Individual gray balance settings can be applied, and saved, to meet the
requirements of a particular job, or to obtain particular effects such as
evening or morning light.
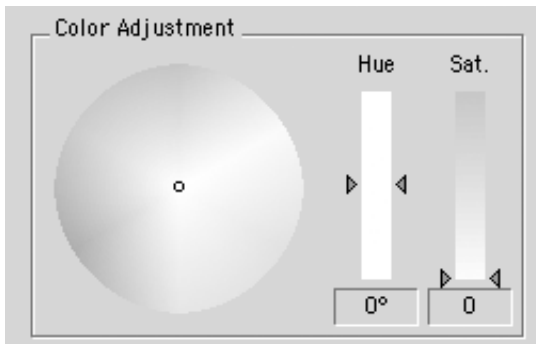
Finally there are three options designed to help in the gray balancing process.

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 by 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.

Development speed is entirely dependent on speed of the computer. The configuration of the Computer, OS and the number of other running applications will effect the devellop speed.

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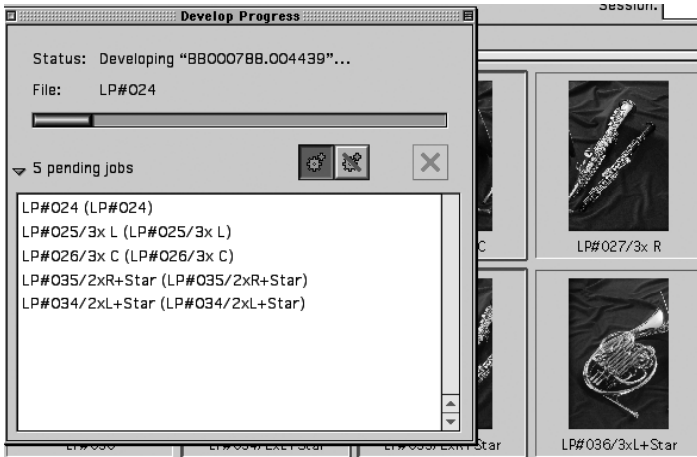
It is possible to open developed files in Photoshop, or another application, automatically. Open Preferences/Develop File/Attributes to set this option.
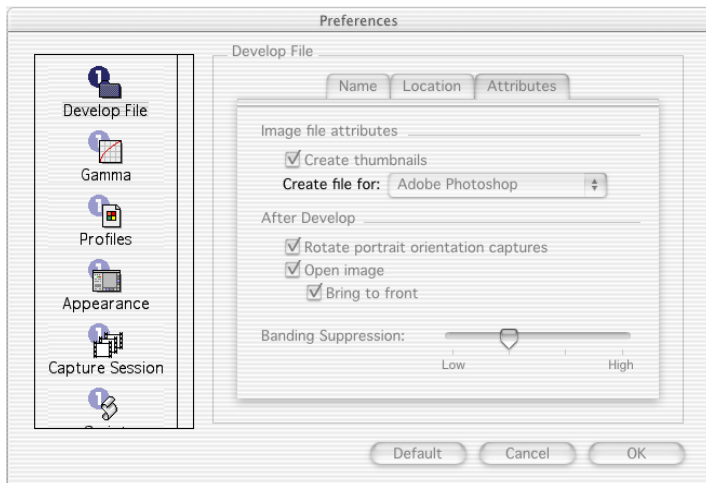
Export Previews

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.
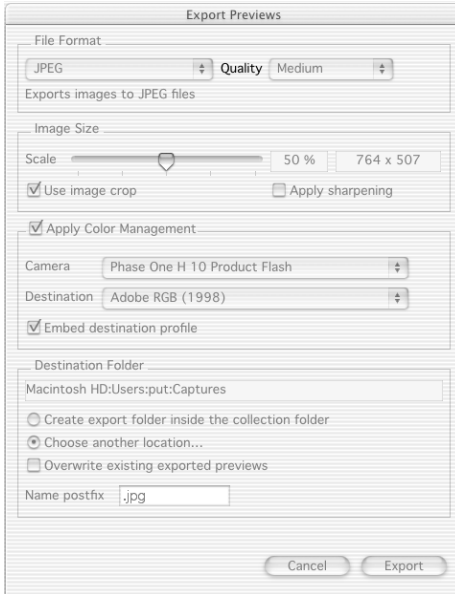
The dialogue box provides you with the following options:

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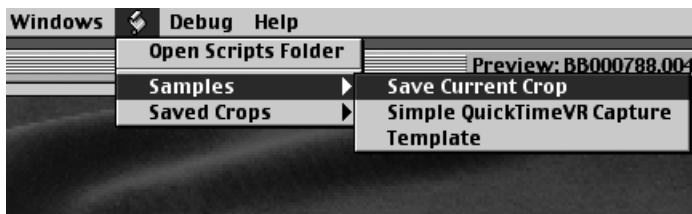
- Use the crop tool to define the image crop
- Go to the Script menu/Samples
- Select 'Save Current Crop'
- Name the crop (e.g. 5x5 inch)

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

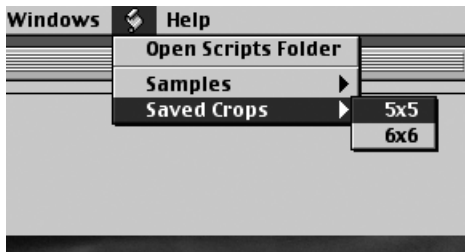Many of the tools in the Capture One application act in much the same way as the tools of popular image editing applications such as Adobe Photoshop. Many of these tools actually come from the traditional world; the cropping tool is the first example of this, mimicking the cropping "L's" used by artists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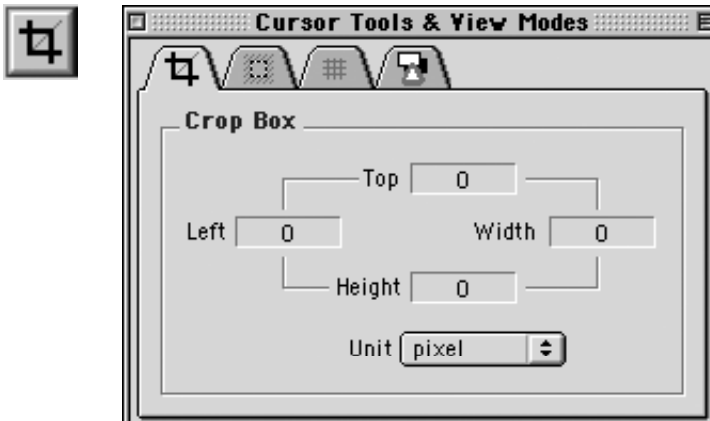
Crop Mask Tool

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.

Cursor Tools & View Modes

Mask

Opacity

60

Color

☐ Draw the crop box
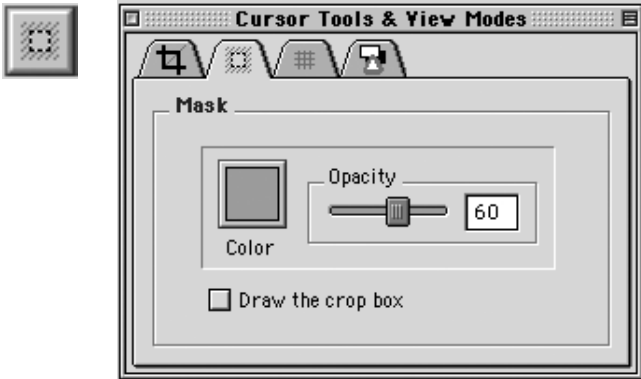
Eyedropper

The Eyedropper tool is used to read the RGB or CMYK values of a
paticular 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.

Cursor Tools & View Modes

Color Picker

Point sample
3x3 Pixels
Sample size ● 5x5 Pixels

☑ Draw color picker frame
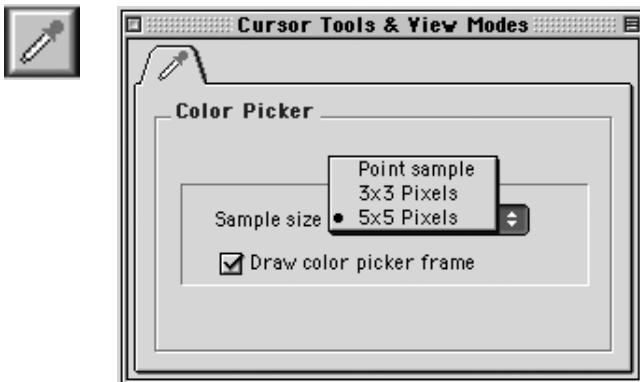
Zoom Tool

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 pixilated 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.
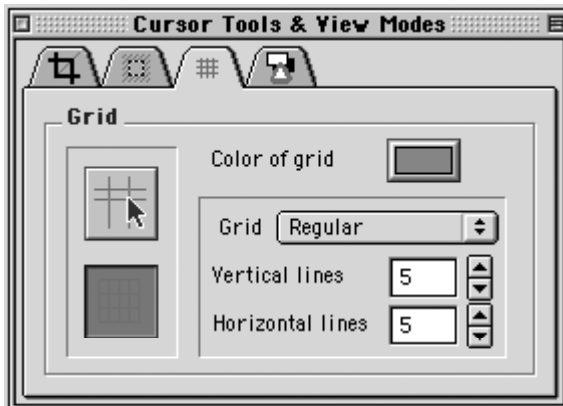
Exposure Warning Tool

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.
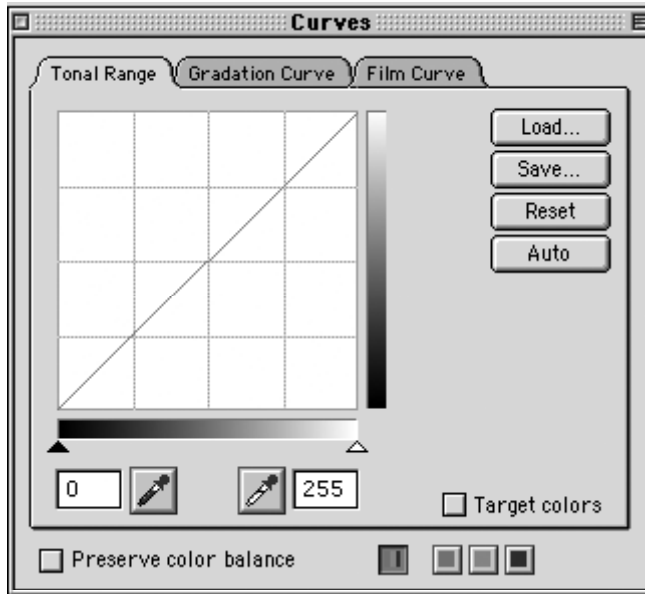
The Gradation Curves pane allows the control of an infinite number of points along the curve of an image (compared to the two points of the Tonal Range pane). The curve starts out as a linear curve. By clicking on the curve a point can be added that can be adjusted to control the image tone. To observe 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.

```
┌──────────────────────────────────────────────┐
│ ▣ ░░░░░░░░░░░░░░░░░ Curves ░░░░░░░░░░░░░░░░ ▤ │
│ ┌──────────┬─────────────────┬───────────┐   │
│ │Tonal Range│ Gradation Curve │Film Curve │   │
│                                              │
│                          ┌─────────────┐     │
│                          │   Load...    │     │
│                          ├─────────────┤     │
│                          │   Save...    │     │
│                          ├─────────────┤     │
│                          │    Reset     │     │
│                          └─────────────┘     │
│                                              │
│                        ☼   0   ▲▼            │
│                        ◐   0   ▲▼            │
│                                              │
│   Input    0    Output    0                  │
│                                              │
│   ☑ Preserve color balance                   │
└──────────────────────────────────────────────┘
```
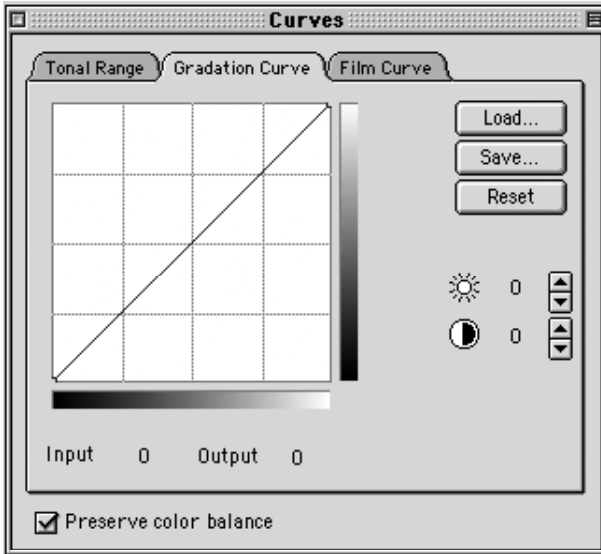
The key to both Tonal Range and Gradation Curve is to be conservative with their use. Using these tools to attempt to correct an image that was poorly exposed will not result in a high quality image.

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.
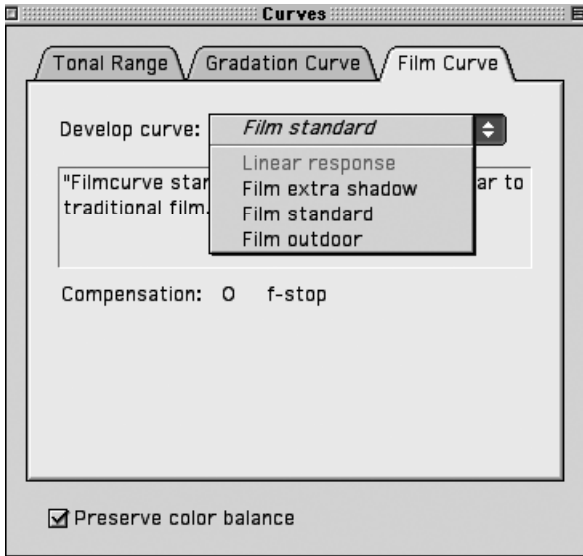
Unsharp Mask

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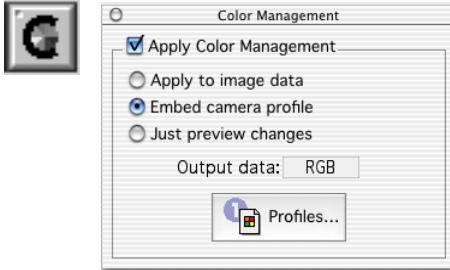
The camera, monitor and printer can be specified in the application, and the processed image will be customized for that specific input and output configuration. If the final images are to be printed, then the results, as they would appear in the final print, can be previewed on screen. In this way images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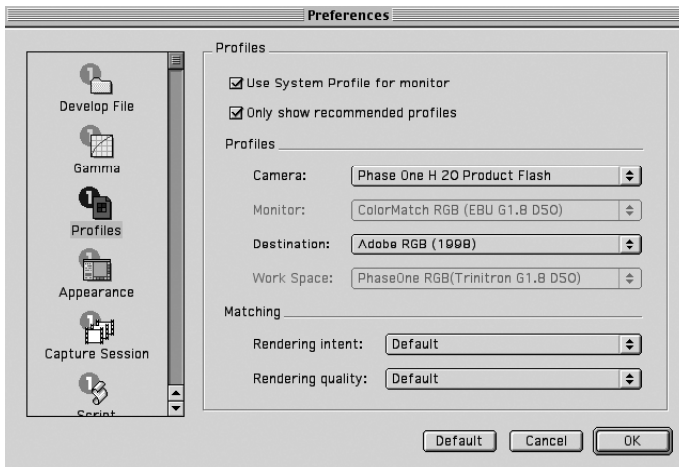
To use this feature first set the Profiles in the Preferences window.

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.
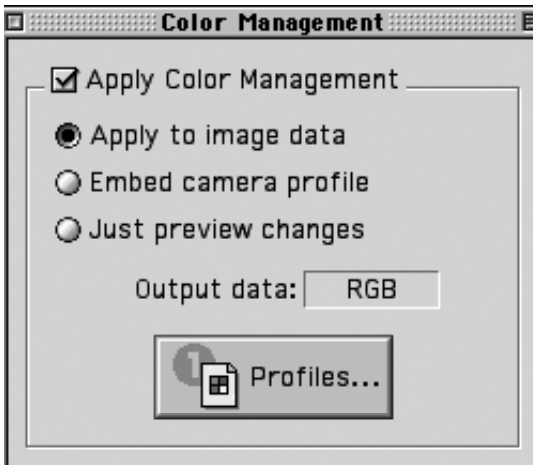
Embed Camera Profile

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.

For H 10 digital backs also 200 and 400 ISO.

Changes can only be made when a camera is connected.
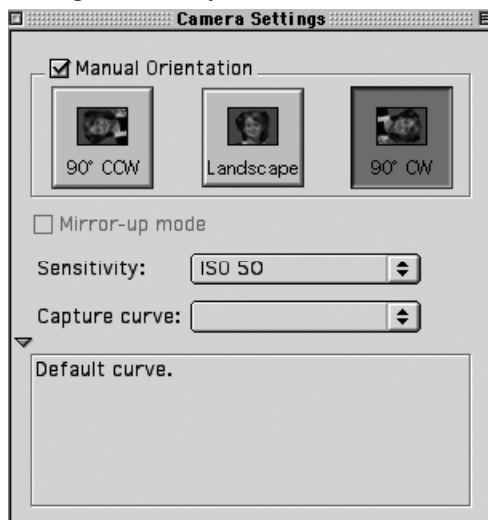
Capture Curve

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.
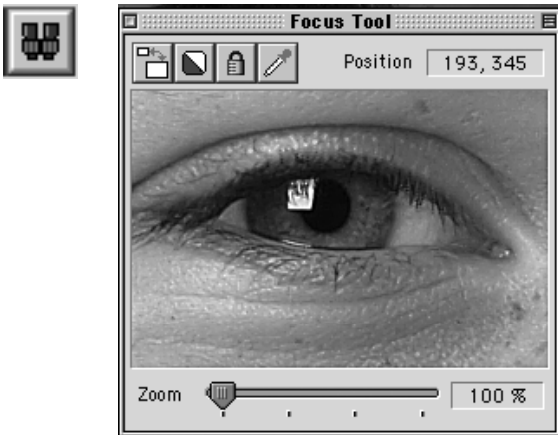
Banding Suppression

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 seam 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 cannel.

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.

Note! Banding Supression can only be applied on H 10 and H 20 images.

The banding suppression slider has 4 positions:
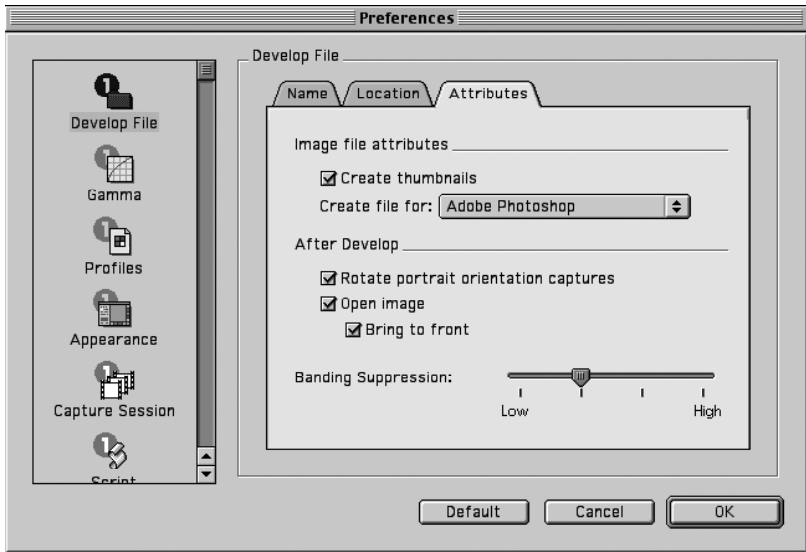
1. The first position adds a minimum of 'variations' to the image. Use this setting if you wish to maintain a very clean image, if banding does not seem to be a major issue and if the image does not have any critical areas (e.g. large uniform areas).

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.
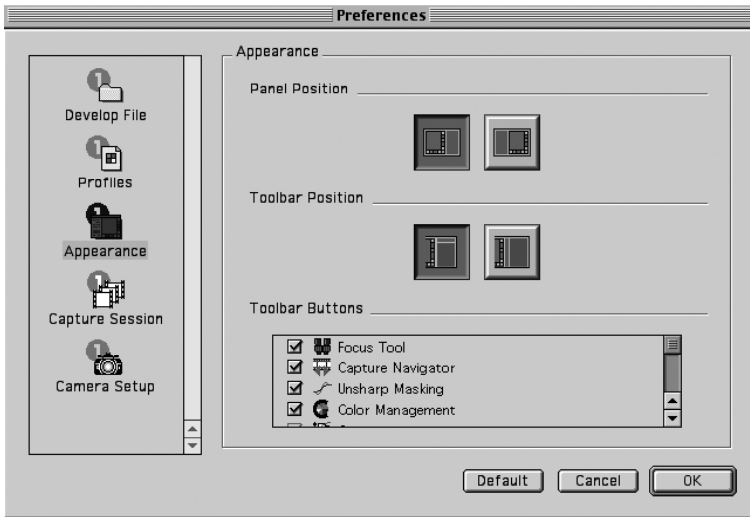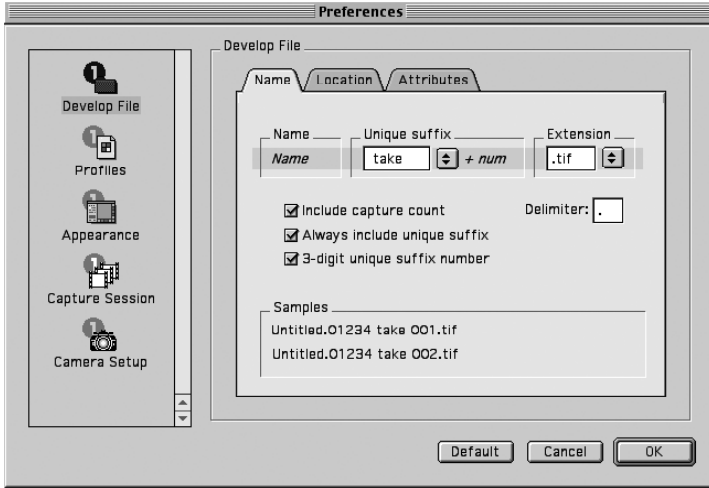

Develop File

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 Deliminator 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.
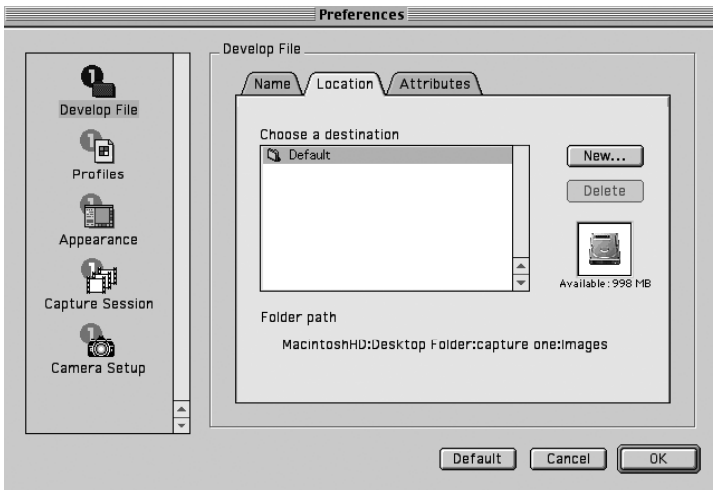
Attributes Tab

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.
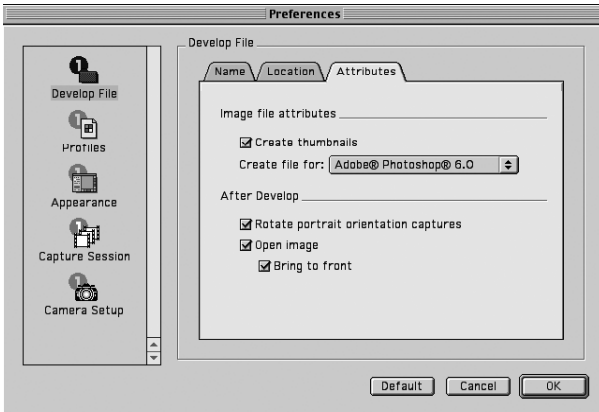
Gamma

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.
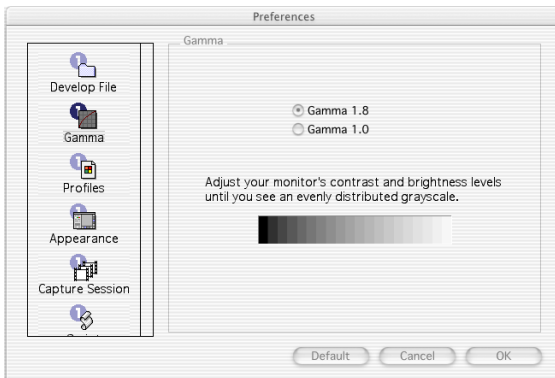
Profiles

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 2O Outdoor Daylight
Phase One H 2O Portrait Natural
Phase One H 2O Product Flash
Phase One H 2O Product Tungsten
```
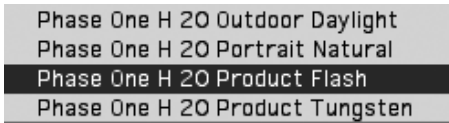
Destination – Select a suitable output profile. An example could be:

```
Adobe RGB (1998)
Adobe RGB (1998)
PhaseOne RGB(Trinitron G1.8 D5O)
```
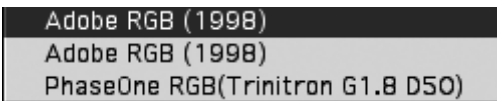
It is possible to create your own ICC profile and import them into the Capture One software. Any ICC compliant profiles can be used with the Phase One camera back.

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

Setting Up ICC Profiles in Adobe Photoshop 7.0

To set up the color settings for Photoshop Phase One has made a setting file for easy set up of PhotoShop.

In the Capture One application folder there is a folder named "Goodies". The "Goodies" folder has several subfolder with Phase One´s recomended setup for various PhotoShop versions.

To use the settings under PhotoShop 6.0 or 7.0 open the PhotoShop Color Settings and load "PhaseOne PS6.0 Defaults.csf file found in the Goodies/Photoshop 6.0 - Color Settings folder.

The settings are identical for PhotoShop 6.x and 7.x

PhaseOne PS6.0
Defaults.csf
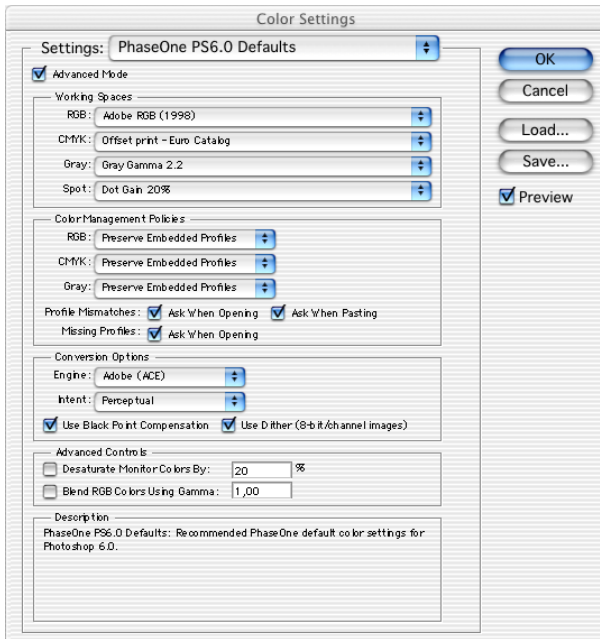
Phase One Recomended PhotoShop color settings for PhotoShop 6.0 and PhotoShop 7.0

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.

The Capture Server works ONLY under Mac OS 9. For Mac OS X users Phase One recomends using network connections to transfer files from one computer to another.

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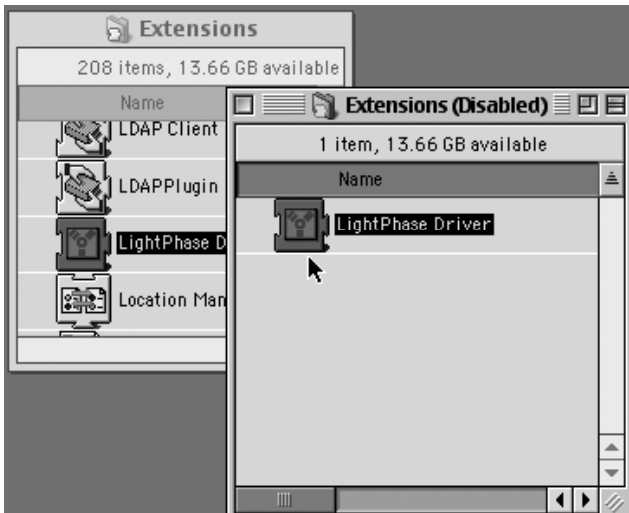
Once the software has been installed, and the camera back has been connected to one computer, both workstations must be restarted. The next step is to publish the capture folder on the capture station. This shares the capture folder with the developing workstation. The procedure is described below.

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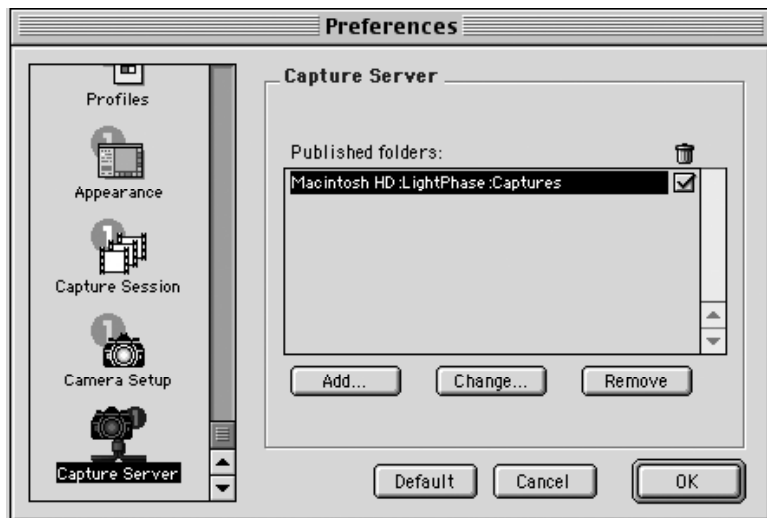
Refer to the "Organizing Images" section of this manual to determine the best way to organize capture files.

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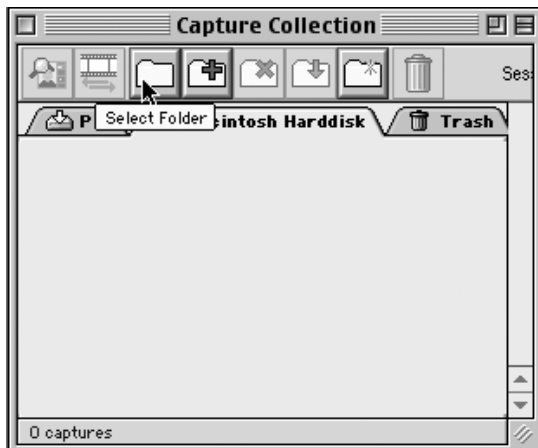
To develop an image you must transfer it to the developing station by clicking on the small icon at the top of the window. After a few seconds the raw capture file will have been transferred and will appear in the local capture folder tab. The file can then be developed as normal.

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:
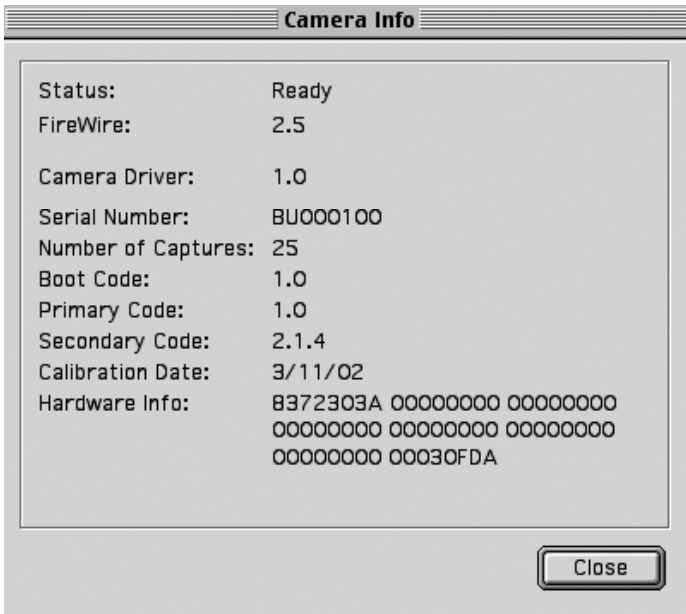
9 Additional Features

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:
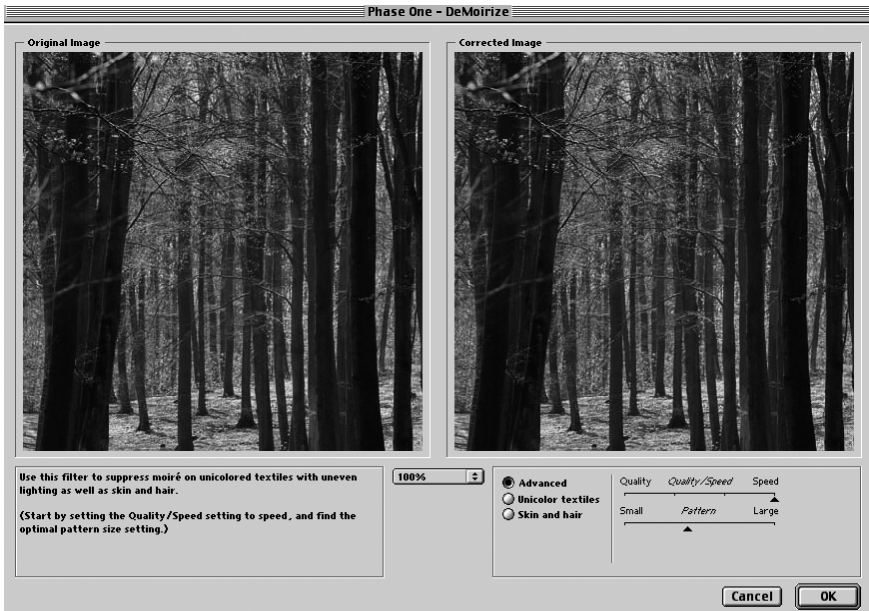
Original Image, which displays the image before correction and Corrected Image, which displays the image after correction.
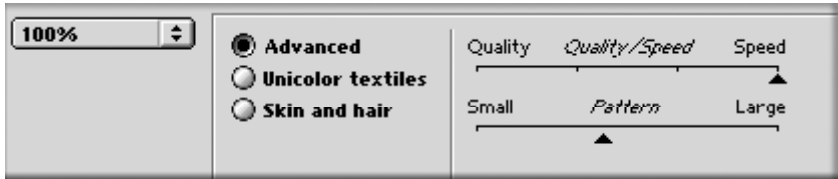
Advanced Mode
Advanced mode is a new filter tool. It is also the default mode of the
Demoirize plug-in. In advanced mode the filter estimates colors by means
of the Quality/Speed slider and the Pattern Size slider.
Often the color moiré is visible by multiple red/green or blue/yellow
areas of discoloration. 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 that 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.

Phase One ICC Color Editor

The idea behind the Color Editor

The idea behind the Phase One Color Editor is to give the Phase One user the opportunity to change an existing Phase One color profile to meet the individual taste the photographer might have.
The Phase One Color Editor makes the photographer able to individually fine tune Phase One Colorsync profiles to make them meet his requirements in an easy and intuitive way.

The Phase One Color Editor is not a Color Management application that can ensure consistent color from input to output. It will only work on Phase One input profiles. Nor will the tool allow for color changes like image manipulation and retouching application.

When should the tool be used ?

The Color Editor should be used when a photographer wants to optimize the colors that come out of the Capture One Software. If the photographer generally would like a more (or less) saturated image it is a good idea to use the tool to generate a new profile.
Also is the photographer would like to add his own artistic interpretation to an image the tool can be useful. He can then change the hue or saturation of one or more colors to make the profile match his own artistic needs.

The Color Editor is useful for:
> Making sky look deep blue.
> Making grass look fresh and green.
> Making product shots match the clients wish.
> Making skin tones reproductions.

Since skin tone reproduction flavor is also a matter of cultural behavior there is large differences in what is considered a natural skin tone reproduction.
The Color Editor makes it simple and easy to "tweak" good and reliable profiles to meet the individual photographers color wishes.

In many cases fine tuning an images color is Imaging Applications like Adobe PhotoShop ® will be faster if it is only for a few images.
For multiple images that requires the same fine tuning an ICC profile will save time and also ensure a higher level of color consistency than manual editing on the image file.

The User Interface
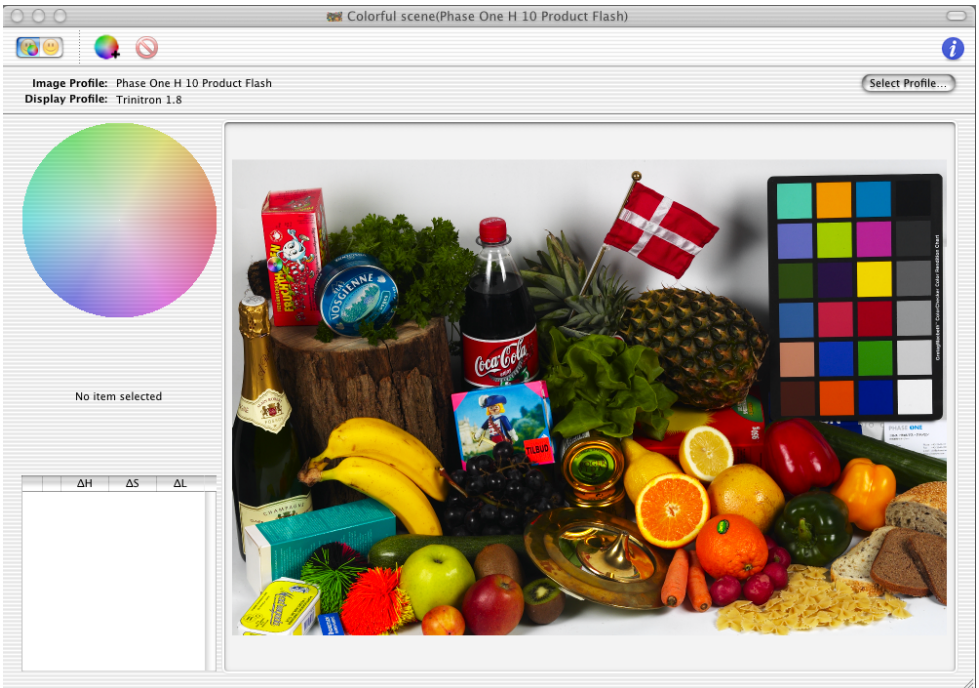
The main window in the Color Editor shows a image with many natural colors.
This type if image is a good image to evaluate your color edits on.

Title line

Colorful scene(Phase One H 10 Product Flash)

The main window title line displays the name on the profile being worked on.
In this case the profile "Phase One H 10 Product Flash" is the active profile.
Show Original / Show Preview
The show original button will show the original file without any edits
Show Preview will show the original file with the color edits. It is possible to toggle
from Show original to Show Preview by pressing the spacebar.

Working Profile

Image Profile: Phase One H 10 Product Flash
Display Profile: Trinitron 1.8
Select Profile...
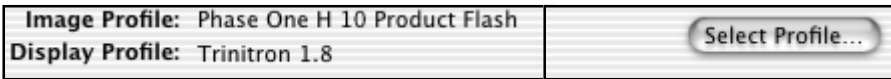
Below the title line the edit profile and the Display Profile is displayed. If another
profile wanted it can be selected with the Select Profile button.

Show Original/Show Preview

The Show Original button will show the original selected profile without any edits.
Show Preview will show the original profile plus any edits. It is possible to toggle
from Show Original to Show Preview by pressing the spacebar.

Global Color Edit

Global color edit will add a global edit to the edit list. Global color edits contains
a Hue rotation and a Saturation slider.

Delete selected changes

Delete selected changes will delete the selected edits from the edit list.

Show/Hide Inspector

The Profile Inspector is a tool for evaluating the quality of the edits. It will be described in depth later in this manual.

Color Wheel

The color wheel at the left works in conjunction with the two edit modes. Global and Local color edit. If no edits are made the color wheel will be grayed out.
The Edit List
Located at the lower left corner of the main window is the edit list.
The list contains all the edit modifications there have been made to the color profile. From the list any edit can be picked and re-worked if necessary.
The type of edit is displayed in the edit list. A small color wheel shows a global edit and a solid color shows a local edit.
It is possible to turn of one or more edits in the edit list by un-checking the corresponding fly-mark. The edits will not be displayed on the monitor or saved with the final profile unless checked.
The values ΔH, ΔS, ΔL shows the difference each edit makes on the selected colors in Hue, Saturation and Lightness.
There is no limit to how many edits there can be made to a profile. In reality only few edits should be necessary to get the desired results.

Color Picker Readout

By pressing the alt key you will have a color picker at the cursor position.
The color picker will ONLY display the value of the file. Not the edit changes.

Full screen mode

By pressing the f key on the keyboard the Color Editor will change to Full Screen Mode. By pressing the spacebar you can see the un-modisied profile.
By releasing the spacebar you will see the edits.
Toggling back and forth will often be a good way of inspecting the edits made to a profile.

Editing a profile

Before even starting to edit a profile it is a good idea to evaluate the result that the used profile gives. The first step is to identify the problem areas there might be in the existing color workflow. It is recommended that the evaluation is not only made on the Monitor images, but also on the printed images. Once having identified the problem the editing can take place.
Make sure that the monitor used is well calibrated and allow it to warm up for 20 minutes or more. A cold monitor displays colors differently than at working temperature. Avoid direct sunlight at the monitor and be in a controlled daylight environment if possible.

Once these things are in place open the Color Editor and open the desired Image. The Image must have an embedded profile. If the embedded profile is not suitable as a starting point for the new profile it can be changed by pressing the Select Profile Button.

Global color edits
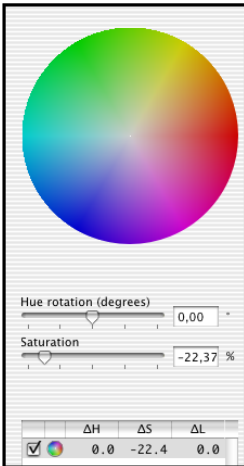
Global color edits can be used to change the hue saturation of an image. Global edits will affect ALL colors in the profile. It will not make any changes to neutral areas at all.

Hue rotation (degrees)

0,00 °

Saturation

-22,37 %

	ΔH	ΔS	ΔL
☑ ⬤	0.0	-22.4	0.0

Local Color Edits

By clicking in the image it is possible to read a color from the image and to use this color to select the colors to work on.

The color will be shown in the color wheel as the middle dot. The two other dots represents how far from the original picked color the edits shall be effective.
If a broader range of colors is desired they can simply be dragged around on the color wheel to make the selection wider or more narrow.
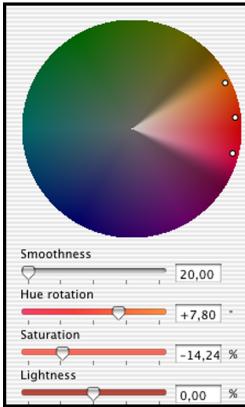
The smoothness indicates how steep the falloff from the endpoints should be. The higher the number the more smooth the selection will be and the more neighboring colors will be affected.

Once having made the right selection the color changes can take place.
Simply drag the Hue rotation, Saturation and the Lightness slider until the desired is achieved.
Often it is best to make a few edits with a small effect and a broad range instead of trying to make the changes in only one edit.

All the edits made will show in real time on the monitor. It is a good idea to toggle back and forth from Show Original to Show Preview to see if the effect of the edits is the desired. Full Screen Mode is an excellent tool for this since there is no distracting palettes or other screen elements.

Using the Profile Inspector

The Profile Inspector is a slide out window. It contains two tabs. One for the Color Changes View and one for the 3D ColorSpace Inspector.
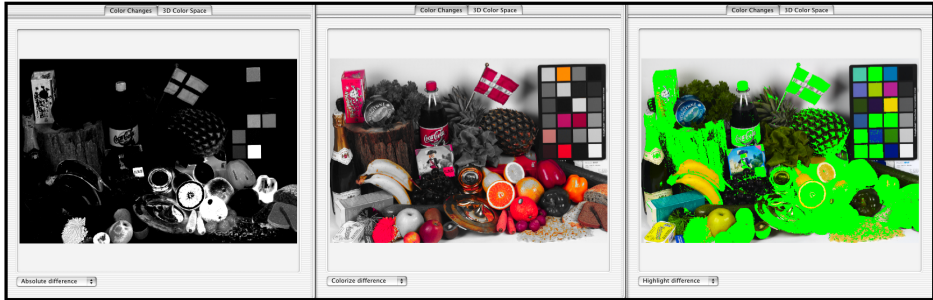
Color Changes

The Color Changes tab in the Profile Inspector view has 3 popup options: Colorize difference, Absolute Difference and Highlight difference. These tools can be used to compare your edits with the original profile.

Colorize Difference shows a monochrome image in the areas where no edits are made. If no edits has been made only a monochrome image will be shown.

Absolute Difference will only show the image in areas where a change has been made. If no colors have been changed only a black image will be shown.

Highlight difference displays in a green color the colors that have been changed.

3D Color Space
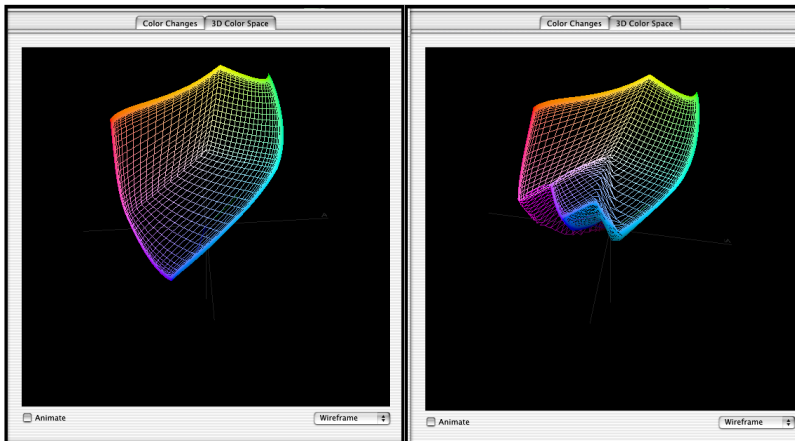
The left profile is smooth and will most likely give a good reproduction of colors and graduations. The profile at the right has a jagged surface in the blue area. This can cause banding and color shifts in blue areas.

Selecting a higher smoothness in the local edits will often soften this effect.

9.11

The Profile inspector is a helpful tool to evaluate the profiles. It makes a simplified 3-dimensional graphic view of the color profile. This graphical view can help finding errors in a profile that might pass through the visual inspection of in the main window.

The profile should not have any wrinkles or holes seen from any angle. Wrinkles and holes might indicate that the profile might have a problem interpreting these specific colors.
If problem like shown in the above 3D view occurs the edits might be too radical. The edits can be softened by setting a higher smoothness radius in the local edits and by spreading the color range of the edits.

Exporting the Color Profile
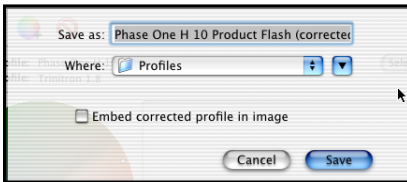
Once the editing and visual inspection in the Profile Inspector has been completed the profile can be exported. The save dialog box has gives the option of exporting the ICC Profile or to save the image in the main window with the new profile embedded.
It is not possible to overwrite any of the existing profiles. The profile should be properly named. Keep in mind that the profile might be useful later so the name should describe the profile.

Most users will have the biggest benefit of saving the profile so the profile can be used on multiple images.

Keep in mind that most imaging application including Capture One needs to be restarted in order to work with the new profile.

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.

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 μs

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	+**

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	+

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	
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	+

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	+

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/Mac OS X 10.1.5
Ports:	One available USB and FireWire port

Portable/Laptop: Please note that portable platforms/laptops MUST ALWAYS be connected to the Phase One camera back via Phase One's portable solution. A camera might work if used without a portable solution but it can not be garantied.

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