

# **Capture One 2.9 Windows User Guide**

Edition December 2002

## **PHASE ONE**

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Printed in Denmark.

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## 1. Getting Started

The Capture One software is designed for ease of installation and use. It allows you to create print-ready images in a few simple steps.

- 1 ) Install the software (Section **2. Install The Software**)
- 2 ) Launch the Capture One application by double-clicking on the icon
- 3 ) Connect your Digital camera to the computer through the IEEE 1394 cable. Now you can shoot directly into the application. Or load the images stored on the Compact Flash card into the application's capture collection through the IEEE 1394 cable or a card reader.
- 4 ) Click on an image in the capture collection to select it
- 5 ) Gray balance
- 6 ) Adjust levels & curves
- 7 ) Check focus
- 8 ) Apply color management
- 9 ) Crop
- 10 ) Process the image as TIFF or JPEG

The workflow is very simple and in less than a minute you'll have a print-ready image. Or you can spend several minutes on advanced image editing prior to processing the file. It's entirely up to you.

## 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)

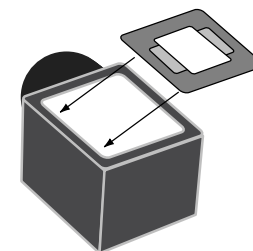
While the owner’s manual for the particular computer should be consulted, the basic steps to installing the card are as follows:

- 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:

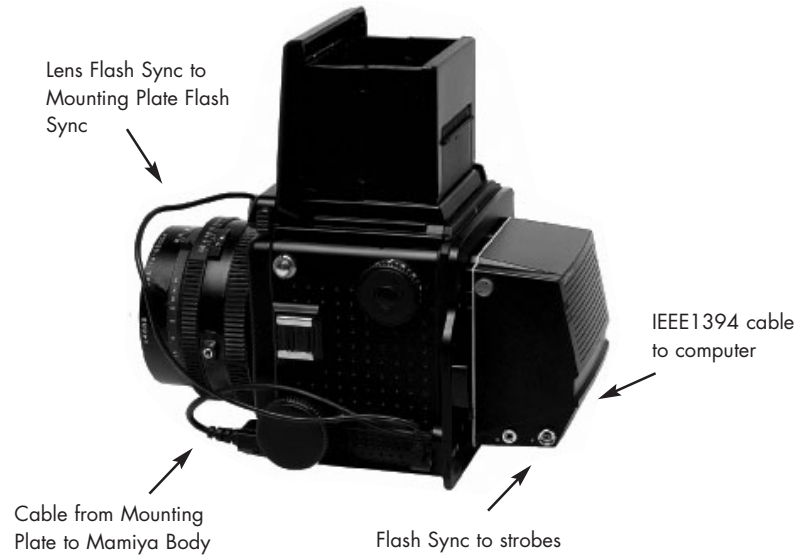
- 1) A Ground Glass Mask is included. This must be installed in the viewfinder to ensure correct framing. Remove the camera viewfinder and focusing screen (refer to the camera users manual for detailed instructions). Insert the Ground Glass Mask and replace the viewing screen and the viewfinder.



- 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

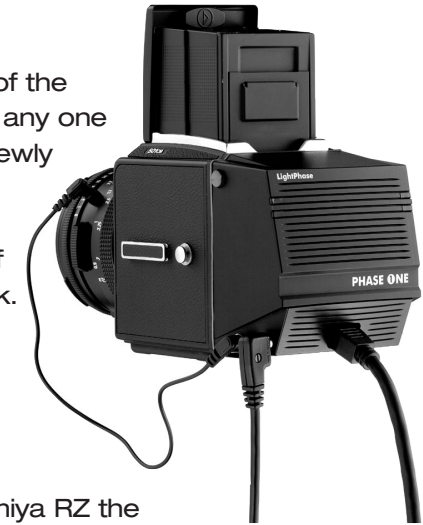
3) Connect the Phase One camera back to the camera or mounting plate. Be sure that the back is firmly connected to the camera before releasing! The small screw on the top of the Phase One camera back can be tightened with the supplied screwdriver to prevent it from being accidentally removed.

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).

## 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 H 10 camera back with a Hasselblad 555ELD, the release button on the front of the Hasselblad needs to be in the “Film” position when shooting in Landscape mode and in “Digi” position when shooting in Portrait 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 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

We have included one easy-to-use installer that will place all of the software necessary to run the Capture One application 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) Insert the USB hardware Dongle to a free USB port on the Computer.
- 3) Double-click the item marked "CaptureOne Inst.exe".
- 4) Read the instructions, and click the "Next" button to continue with the installation. Otherwise, click "Cancel" to quit the installation.
- 5) Follow the on-screen prompts. When the installation is completed, restart the computer.

### 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 hard drive.

## Install the Software

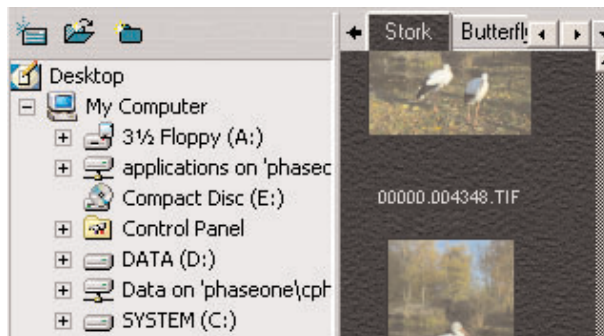
### Previews

The Capture One application automatically creates a low resolution (approximately 3-5 MB depending on the Digital camera used) 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. Also, it is a good idea to clean up the preview folder once in a while so that it does not take up too much storage space.

### Images

By default developed images will be placed in this folder.

You can easily browse through all folders by means of the Capture One’s advanced explore function. To access the browser click on the black arrow to the left of the capture collection tabs.





### 3. Software Set-up

It is always a good idea to set up the software before shooting in order to obtain the fastest and most convenient workflow. The following will guide you through the procedure of setting up the perfect software workflow.

ISO value information is displayed under the Exposure Tab. The ISO value displayed in the software corresponds to that of the camera when the capture was made and cannot be changed in the Capture One application.

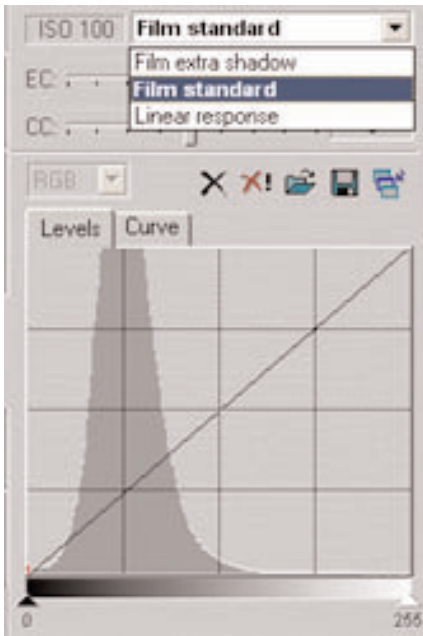
#### Selecting Film Curves

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. Three different film curves can be selected in the Capture One application.

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

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

**Linear response:** Exact linear response. Especially useful for scientific photography with very low contrast scenes. Use 'Linear response' with care as there is an inherent risk of overexposure in highlight areas.



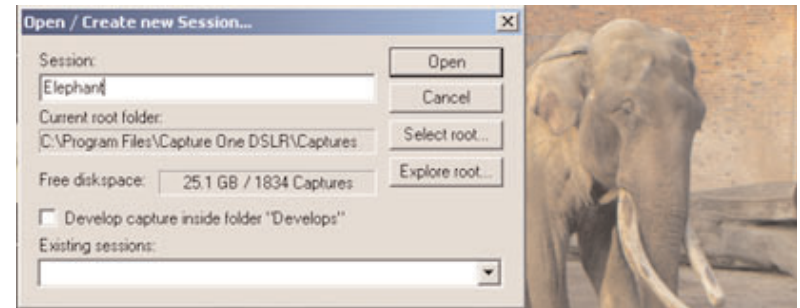
**Organizing Images**

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

If for instance you go to the Zoo to photograph animals you can create one capture collection folder per animal in advance:

**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.

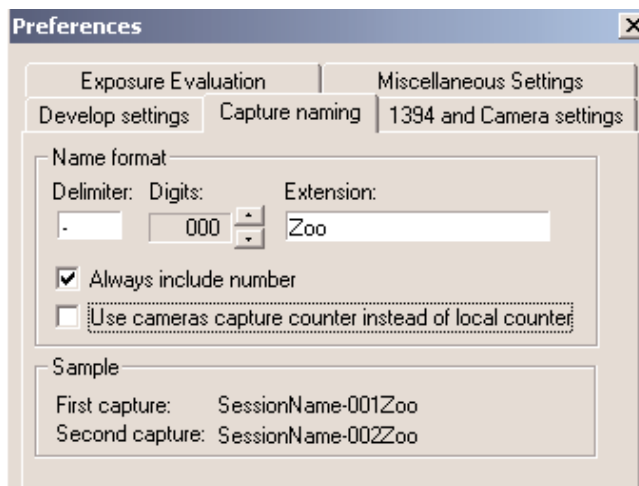


All developed capture files are stored in a sub folder called Develops (C:\Program Files\Capture One\Captures\Elephant\Develops), which is automatically created by checking the box Develop capture in the Session Creator dialogue box.

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 “Elephant”. 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 (ALT + P). 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 fields at the bottom of each thumbnail.

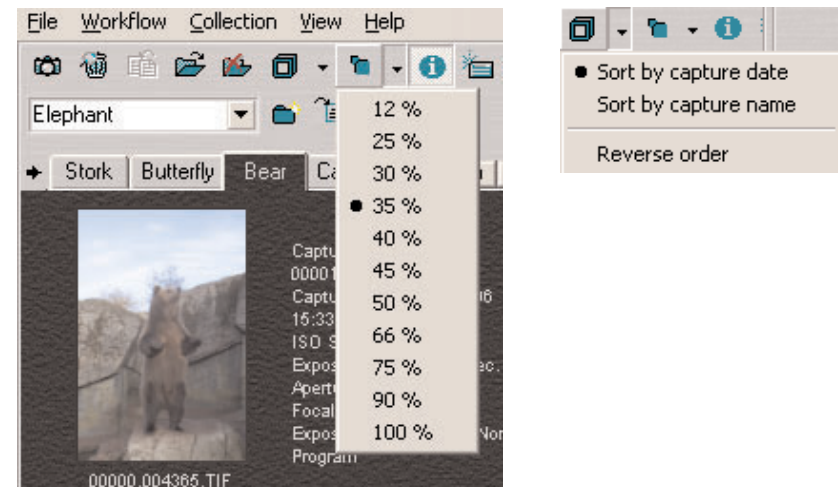


## 4. Editing & Selecting Images

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

### Capture Collection

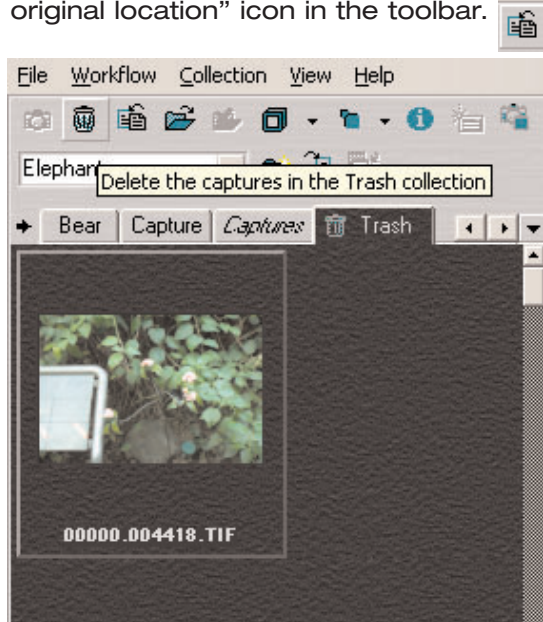
The Capture Collection is located on the left hand side of the main interface and will show a small thumbnail of the images in the currently selected capture directory. The size of the thumbnails can be changed by using the drop-down menu in the tool bar. Also the thumbnails can be sorted according to capture date or name.



### 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

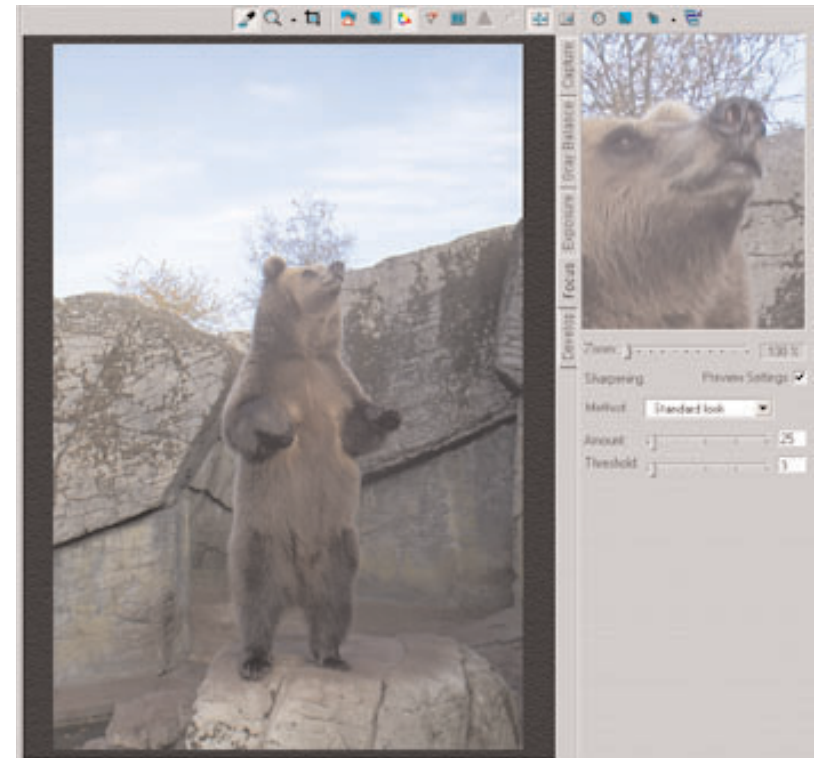
screen to remove all of the trashed images. This safety measure helps prevent accidental deletion of images. If you regret the deletion then drag the image out of the Trash tab and back into the Capture Collection or press the “Move to original location” icon in the toolbar.



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.

**Preview Window**

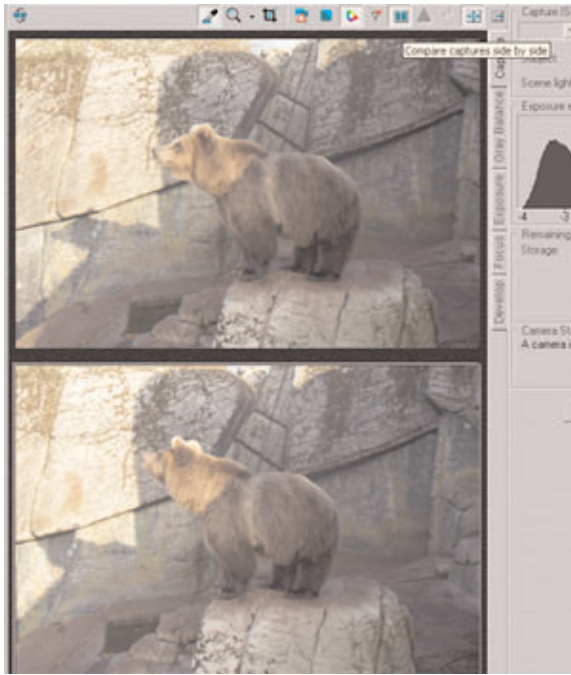
While the Capture Collection is a good place to evaluate images quickly, the Preview Window will provide a much better view of an image. The image is selected by clicking on its thumbnail in the Capture Collection. Use the F6 Key to enlarge the preview.



**Side By Side Comparison**

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.

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.



**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: Capture, Gray Balance, Exposure, Focus and Develop.

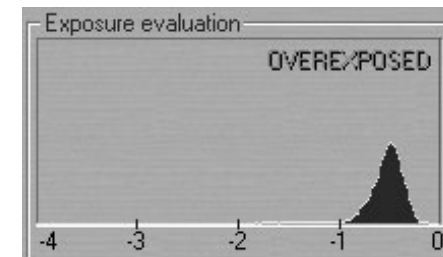
The Function Tabs add features to the Capture One software without adding the clutter of multiple dialog boxes. Click on a tab to change the contents of the Function window and to enhance and evaluate the image before developing. The tabs are arranged in a logical workflow sequence.

**Capture Tab**

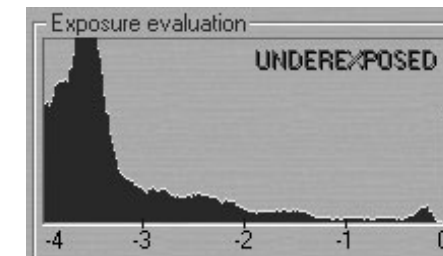
The Capture tab i shows basic information about the most recently captured image or the image selected from the thumbnail view. The top part of the window displays a histogram.

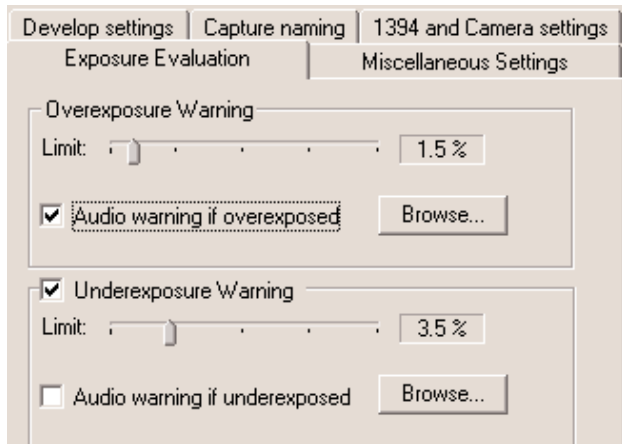
**Exposure Evaluation**

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.



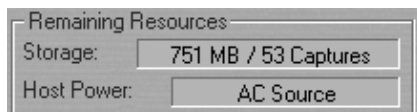


You may set up the application to give an audio warning if the image is overexposed or underexposed. This is done in the Preferences Menu (ALT + P).

**Remaining Resources**

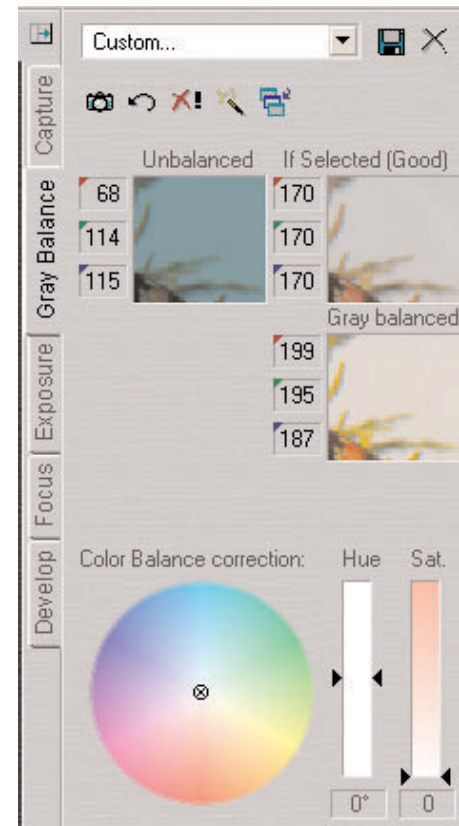
Also in the Capture tab window is the section called Remaining Resources. This section helps gauge how much hard disk space is available. Some laptop computers also support a battery display which indicates the charge level.

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**

Phase One Camera Backs does not make an automatic Gray balance and it must be set manually by the user.



The Gray Balance feature of the application is 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: Hue and Saturation and Balance. Balance is capable of working with both Hue and Saturation by clicking in a colorwheel. The appropriate gray balance is set by using the slider controls.

Finally there are five 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



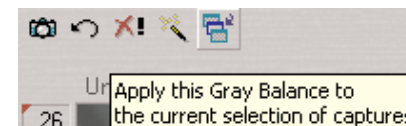
**Automatic Gray Balance**

The software calculates a suitable gray balance.



**Apply Gray Balance to Current Captures**

The selected gray balance is applied only to current selection of captures.





**Exposure Tab**

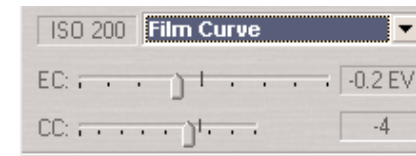
One of the most important displays of the Exposure Tab Window is the “Color Info” window. This display shows the individual Red, Green and Blue channel information. With film photography the evaluation of final exposure and development levels is a manual, and often subjective, process. With digital photography 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; 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.



**Exposure & Contrast Compensation**

You may use the exposure compensation slider to raise or lower the overall image exposure. To enhance contrast use the contrast slider.

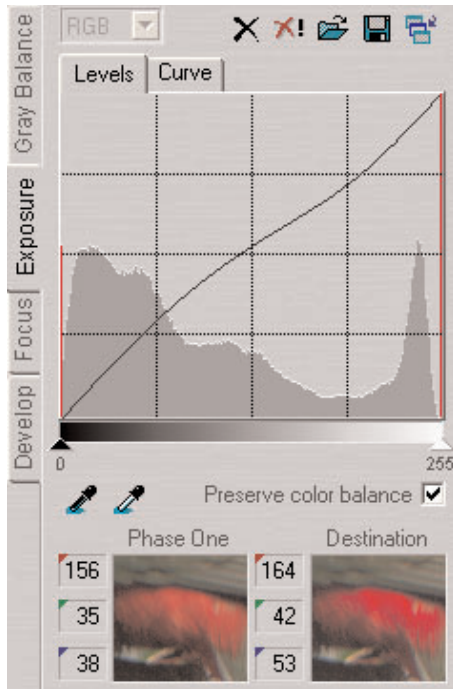


To control the brightness and contrast of the image two standard tools are available: Levels and Curves.

**Levels**

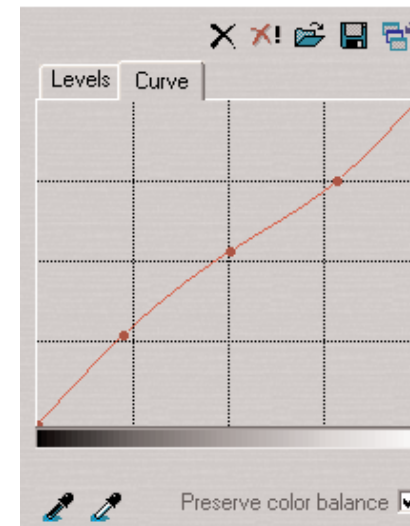
The first part of the Exposure Tab is the Levels control. This is a standard levels box similar to that of Adobe Photoshop. To make an adjustment drag the black or white slider left or right to either darken the shadows or lighten the highlight. Alternatively, click on the black or white eyedropper and 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 up. This will make that point lighter in the developed image. A second point was added in the quarter-tone (light end of the curve) and pushed down. This will make that point darker. 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.

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.

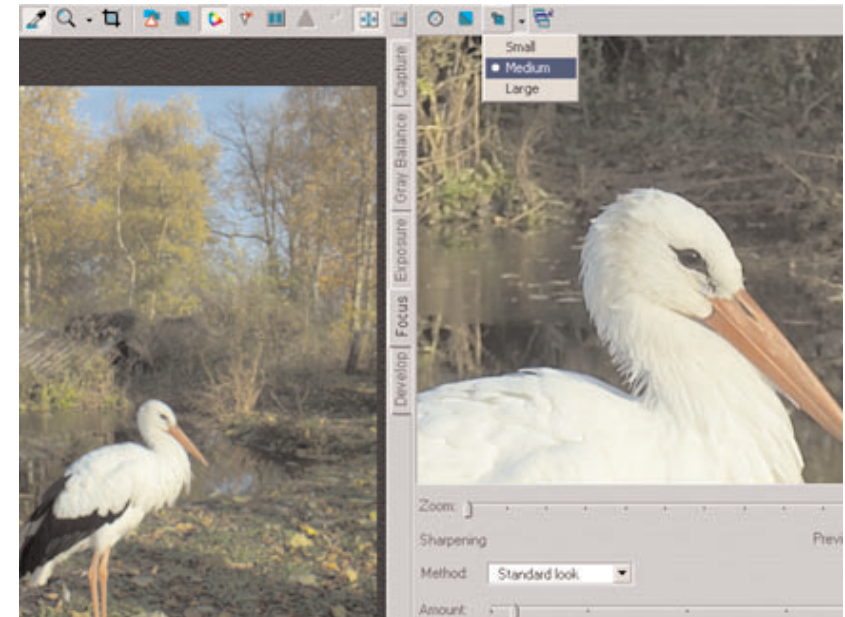
Please read Section 3. **Software Set-up / Selecting Film Curves**, for further information.

The exposure window includes 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.

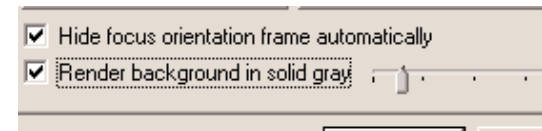
**Focus Tab**

The focus tool does an instant processing of a selected area of the image, which can be used for checking focus and sharpness (USM).

In order to make image navigation easier. One is the ability to choose between three different view sizes; small, medium or large. Another is the square orientation frame in the Preview window. 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 Miscellaneous Settings tab in the Preferences dialogue box (ALT + P).

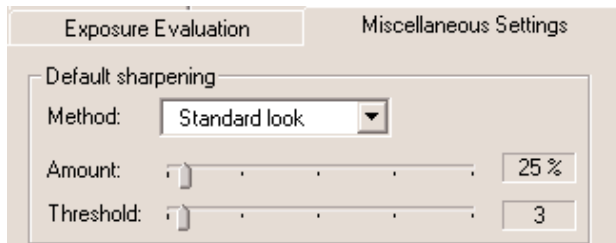


**Focus Preview**

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.

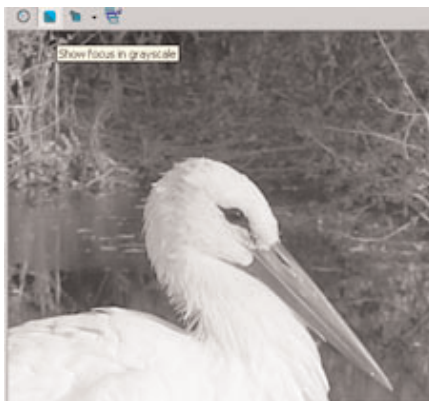
**Sharpening**

Also found under the Focus Tab is a preview of the Unsharp mask settings (also discussed in Section 5. Tools). 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 2 pixels.

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. The default sharpening settings are also found in the Preferences menu.



**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.

**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.

**Soften the image**

To soften the image select “Soft look” from the drop-down box else keep the default setting: Standard look.

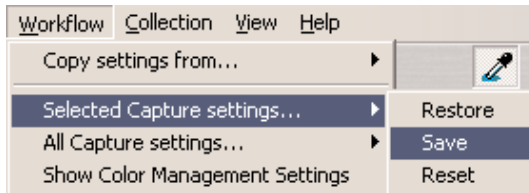


**Menu Settings**

The Capture One menu bar provides you with a variety of settings that will improve your workflow. The most commonly used functions can also be accessed by right-clicking the mouse inside the capture collection.

**Capture Settings**

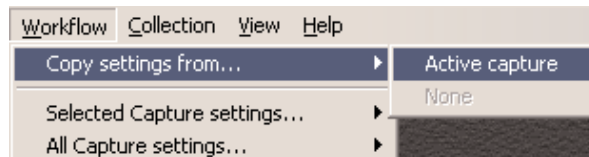
The capture settings you apply to the capture file prior to processing are stored along with its preview in the preview folder and can be used as a future reference. This means that settings like crop, USM settings, curves, capture name etc. can be restored at any time, even, if you intentionally or 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 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. You select the capture file you wish to copy from, the so-called reference, then you go to the Workflow 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 menu, and choose 'Copy settings from../None'.

**Show Color Mangement**

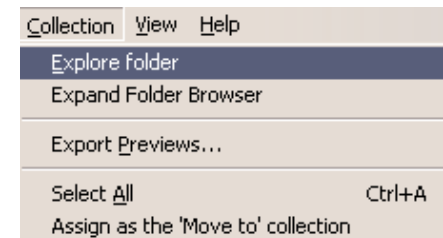
'Show Color Management' opens the color management dialogue box, where ICC profiles are set up. For further details please refer to section **6. Color Management & Editing.**

**Color Editor**

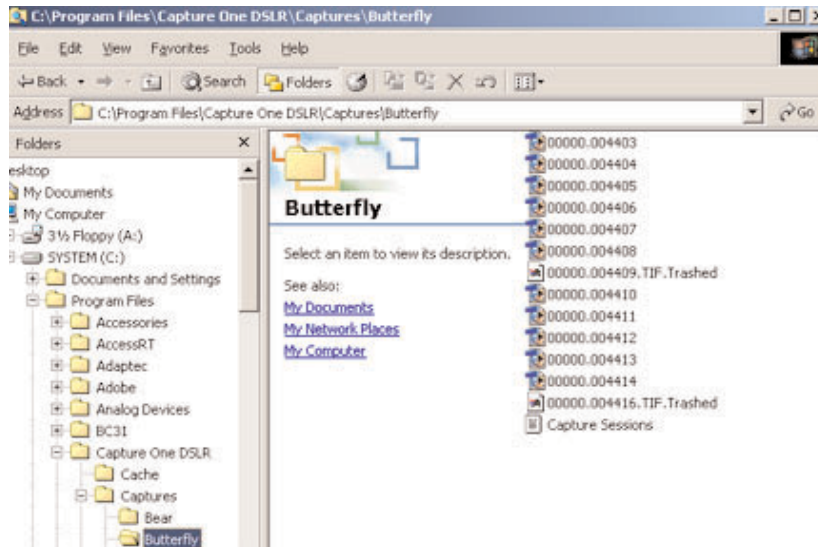
The Color Editor allows color adjustments of existing ICC color management profiles. For further details please refer to section **6. Color Management & Editing.**

**Explore Folder**

Explore Folder opens an advanced explore function in a separate window allowing easy browsing of folders without having to quit the application.



The Explore Folder can also be accessed by right-clicking the mouse inside the capture collection.



### Expand Folder Browser

The folder explorer can also be accessed directly from the Capture One application by choosing 'Expand Folder Browser' or by clicking on the arrow in the left side of the capture collection tabs.

### Export Previews

Export Previews is accessed from the collection menu or by right-clicking the mouse inside the capture collection.

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 in the Capture Collection. Then go to the Collection 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 wish to work with - TIFF or JPEG. If JPEG is selected then 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

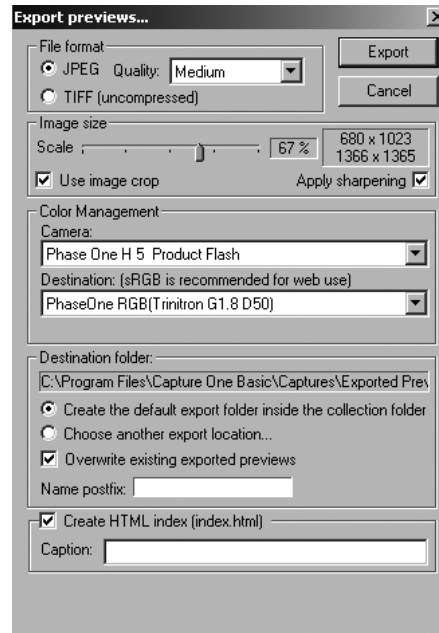
The Image Size field allows image resizing in percentages or pixels. 50% is the default size/resolution of a preview. The 'Apply Sharpening' box enables/disables the sharpening settings from the Capture One software or from third party applications. The 'Use image crop' box is checked if you only wish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

**Create CD-ROM and Web Index**

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

To do so please use the following set-up:

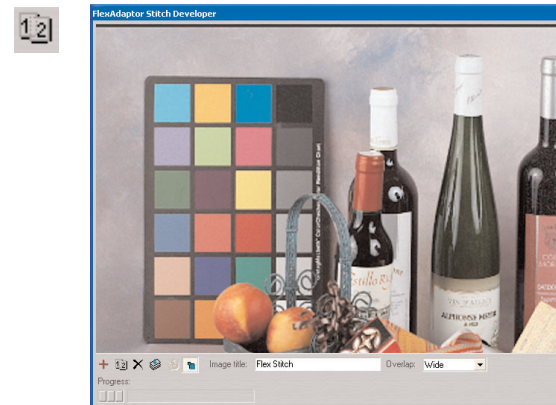
- 1) Select medium JPEG compression
- 2) Scale the images between 15% to 25%
- 3) Apply color management and select the 'sRGB' destination profile

- 4) Use the default destination folder
- 5) Check the 'Create HTML index' box
- 6) Enter a caption for the HTML page
- 7) 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.

**Stitch Developer**

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.

In the Stitch Developer window you have the following options:

#### **Add images for Stitching**

Click this button to add captures from the Capture Collection to the Stitch Developer.

#### **Identify Stitch Order**

If you wish to change the order of the capture files. The software will guide you to select the left image in your final stitched image.

#### **Clear Capture Selection**

This clears the stitch developer of images.

#### **Stop Stitch Operation**

This will stop the current develop and stitch operation.

#### **Expand Stitch Area Preview**

This will expand the Stitch Preview Window.

#### **Image Title**

Add a title for the developed and stitched image here.

#### **Overlap**

This setting will change the overlap between images.

#### **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.

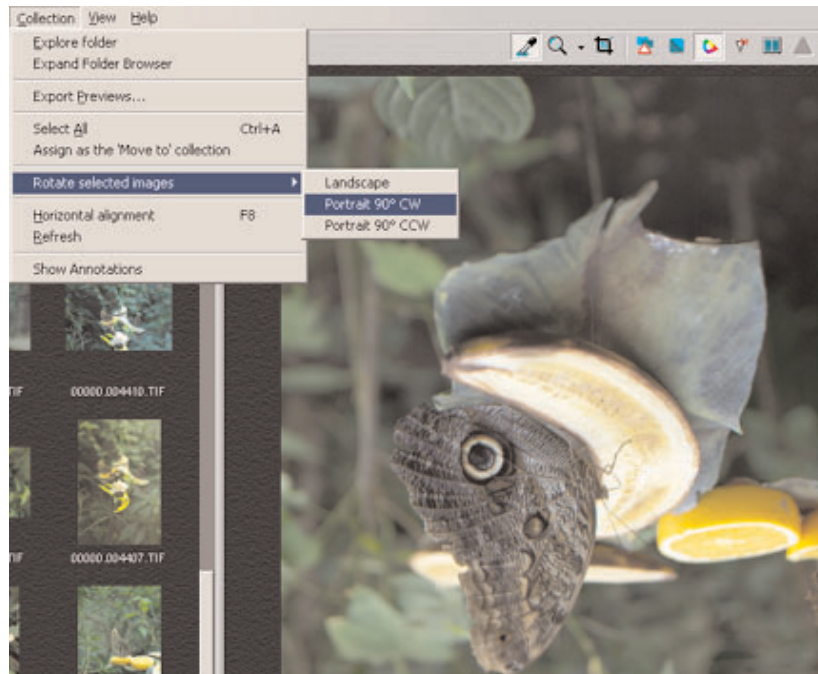
Select/create a collection: 'Keep'. Go to the collection menu or right-click on the mouse, and select 'Assign as the 'Move to' collection'. 'Keep' has been assigned as the 'Move to' collection and all selected capture files will now be transferred to 'Keep' if the Backspace-key is pressed. Also, you 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.



**Rotate Selected Images**

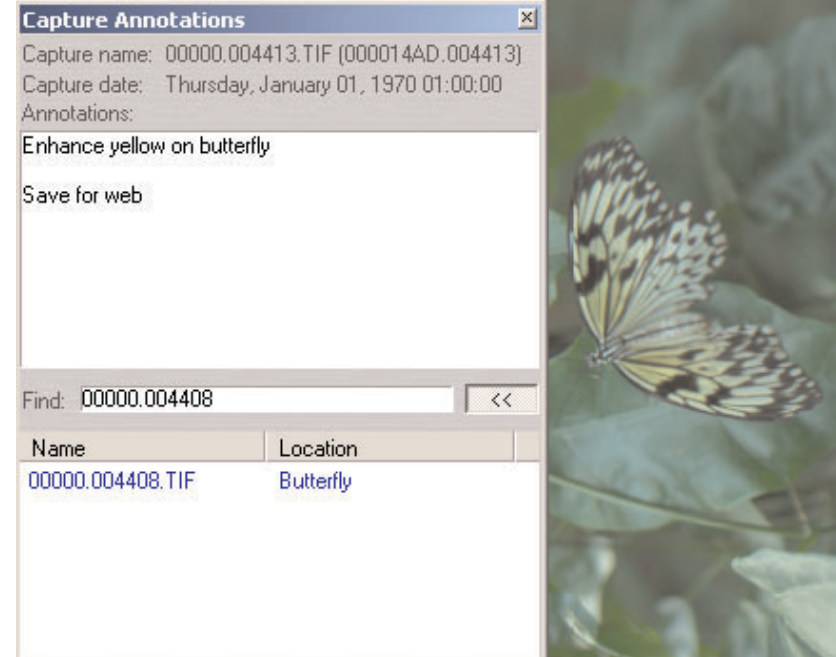
All selected images in the capture collection are rotated to the right orientation according to your selection: Landscape, Portrait 90° CW or 90° CCW. Images can be rotated directly from the capture collection by right-clicking the mouse.



**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' or right-click the mouse inside the capture collection. A dialogue box appears in which you can add or remove annotations.



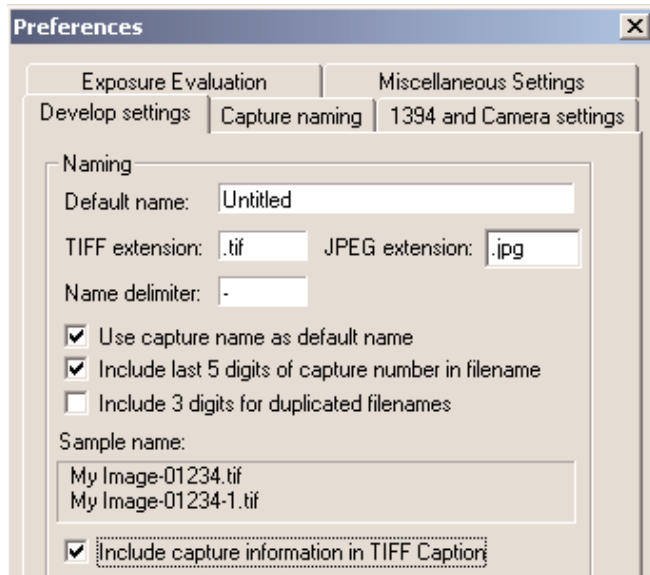
The 'Capture Annotations' dialogue box also has search capabilities, which enable you to locate a specific capture file by its name or annotations. Type in search words in the Find field and click enter. The Find function now locates all capture files that match the search. Once located, the capture file/files are displayed and can be selected directly from the result list. To see the result list press (<<).

**Technical Note**

All capture files include a dot as part of their original name (e.g. 00000.004414), which means that if you only enter '.' in the Find field, then all capture files in the active capture collections (including trashed capture files) will be displayed in the result list.

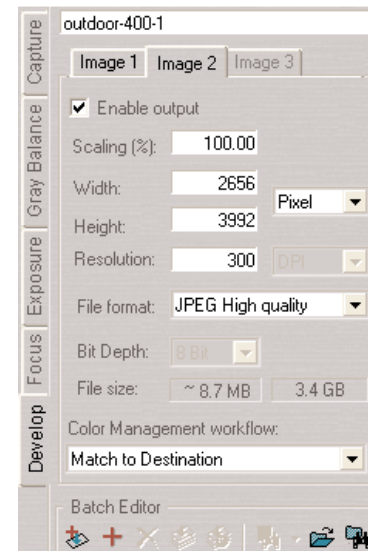
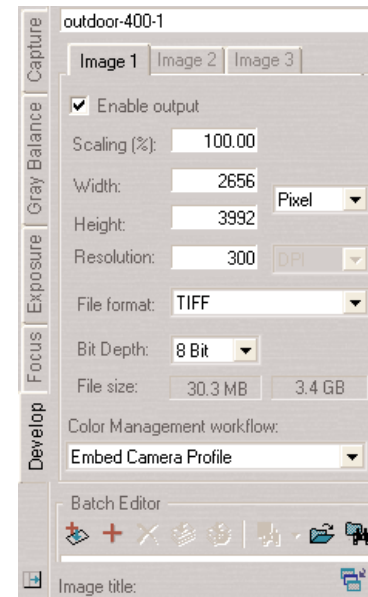
**Embed Information In TIFF Files**

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 (Alt + P), select 'Develop settings' and check 'Include capture information in TIFF Caption'. Once checked, information such as path file name, ID and Image's caption tag.

**Develop Tab**



If you wish to prepare the same image for more purposes you do so by entering the output parameters in the image tabs. Each tab is enabled by checking 'Enable Output'. The same image can now be set up to be processed with different sizes, resolutions, file formats and compressions. The tabs are enabled by checking 'Enable Output'. After setting up the output parameter, the images are added to the processing batch.

Images can 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 processed. 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. 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.

### Process Batch

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

### Stop Processing Batch

This button cancels the development of the list of images.

### View Recently Processed Images

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

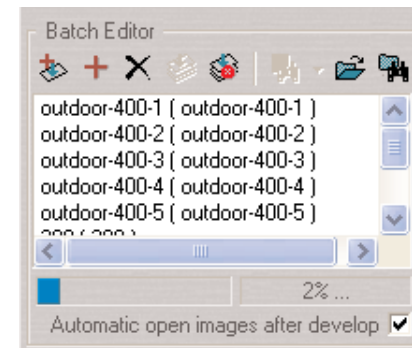
### Set Image Folder

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

### Browse Currently set Folder

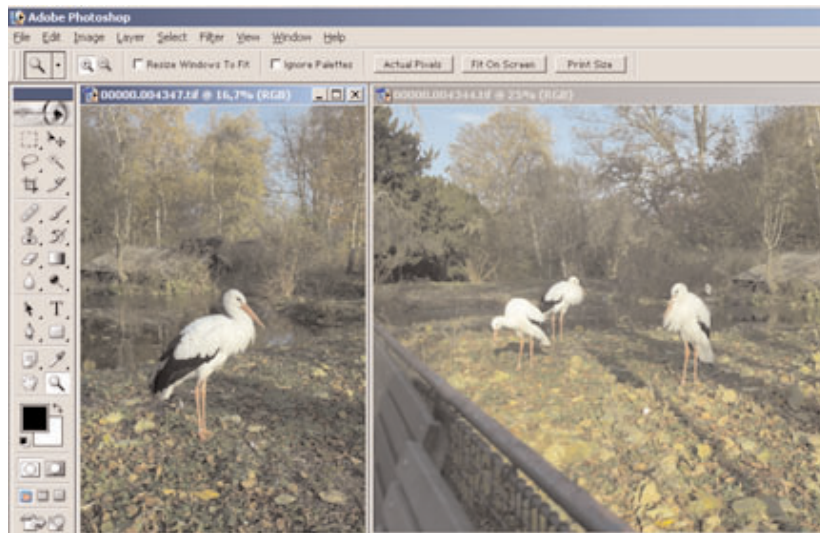
Clicking on this button will open the currently selected develop folder.

### Batch Processing



## Editing & Selecting Images

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 Adobe Photoshop, or other image editors.



## 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.

### 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.



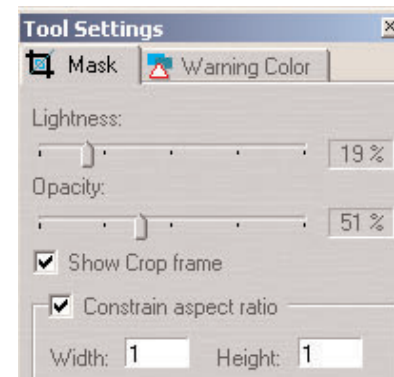
### Cropping

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.

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 Crop 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.

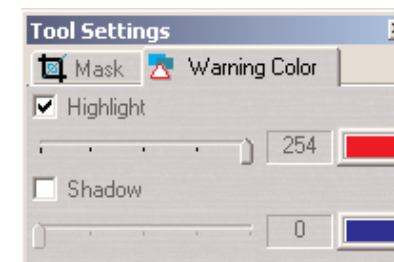


### Exposure Warning Tool

This tool quickly shows which areas of the image are either over - or underexposed.



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-clicking on the tool icon gives access to the Tool Settings box, where the tool parameters can be adjusted.

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 processed file.



### 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. 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:

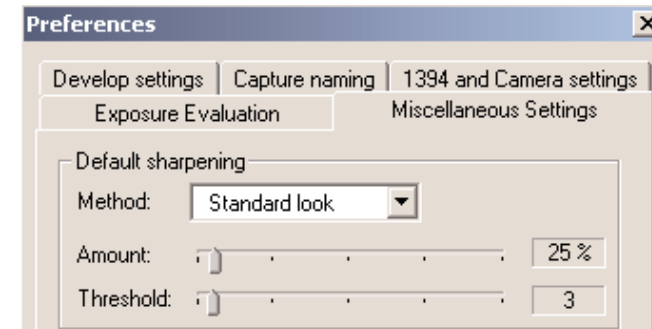


#### Amount

The amount of change is entered here as percentages. 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

The banding suppression slider is a tool that helps to prevent visible image banding on the monitor. Normally banding is not an issue, however, in some cases it does appear on the monitor and then the banding suppression slider is a very efficient tool.

In order to print or display images with correct colors color correction as well as a tonal adjustment are applied to the image data. Color corrections are 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.

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. Very clean image files with a very low noise generation may due to color corrections carried out by other applications like Adobe Photoshop or printer drivers, produce visible image banding in smooth gradients.

In order to minimize visible banding the Capture One application includes a banding suppression slider (ALT + P). The slider will during the development of images in 8 bit adaptively introduce a certain amount of highly controlled variation/dithering to the image data. Banding Suppression can be applied to Phase One H 10, H 20, H 101 and DSLR 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.

## 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.



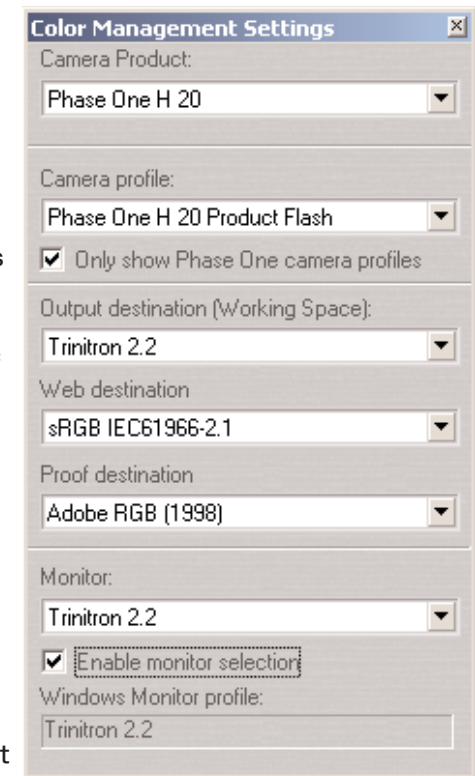
## 6. Color Management & Editing

### Soft Proofing & Color Management

The Capture One application 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 for your captures. If required changes can be made to the profile settings from one capture to another. This is done by means of the ICC profile 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.

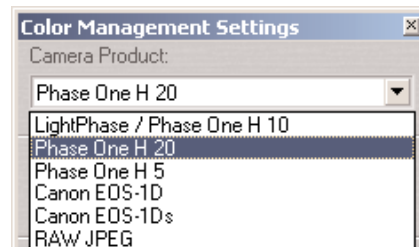
The Capture One Software installs basic profiles for Phase One Camera Backs as well as generic monitor profiles and a wide selection of destination profiles for print, web or proofing purposes.

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

A brief guide to preference settings is provided here:

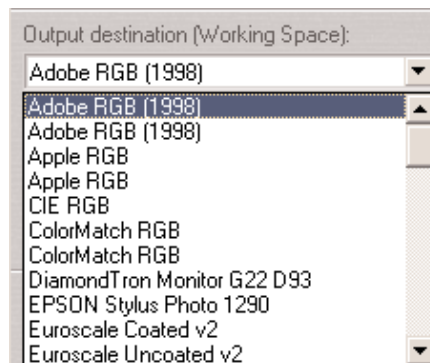
**Camera Profile**

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



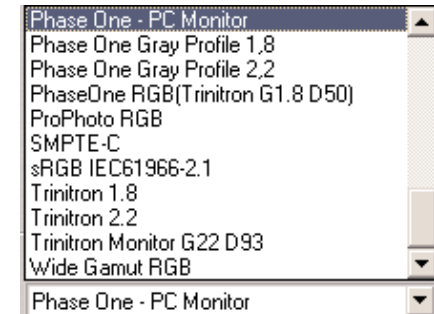
**Destination**

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



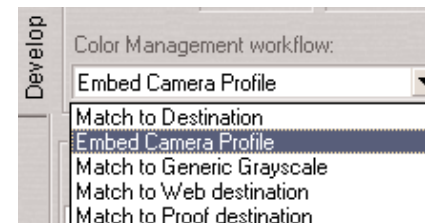
**Monitor**

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



When setting up ICC profiles select from the Develop tab/Color Management workflow you have the following options;

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 processed TIFF file. The application will convert the image on-the-fly to the default workspace or to CMYK.

**Match to Generic Grayscale** embeds a generic grayscale profile in the processed TIFF or JPEG file.

**Match to Web Destination** embeds the select web destination profile in the processed TIFF or JPEG file. The application converts the image to the default workspace or to CMYK on-the-fly.

**Match to Proof Destination** embeds the select proof destination profile in the processed TIFF or JPEG file. The application converts the image to the default workspace or to CMYK on-the-fly.

### Using Other ICC Profiles

It is possible to create your own ICC profile and import into the Capture One software.

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.

## Color Editor

The Color Editor is accessed from the Workflow menu.

The general idea behind this tool is to provide you with the unique possibility of adjusting predefined camera profiles to fit individual color requirements.

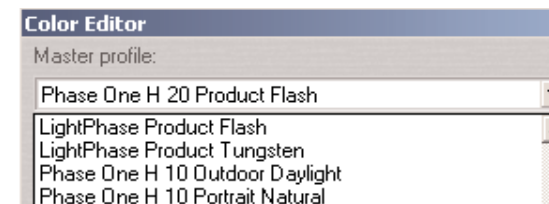
The Color Editor only works with Phase One’s predefined camera profiles. It is not a color management application that can be designed to ensure a consistent color workflow from capture to print nor is it an image editor that can manipulate colors.

### How To Use The Color Editor

Creating an ICC color profile that guarantees natural and reliable colors is often a compromise. Therefore, it can sometimes be useful to optimize or fine-tune individual colors in order to make them more saturated or vice versa: Make the sky look deeper, the grass look fresher, skin tones look warmer etc. If the color adjustments are a permanent requirement, for instance for an entire outdoor shooting scenario, it might be a good idea to generate your own ICC profile. And this is exactly what the Color Editor is for.

### Selecting The Master Profile

Open the Color Editor tool from the Workflow menu, and select the profile you wish the adjust from the Master profile pull-down menu.

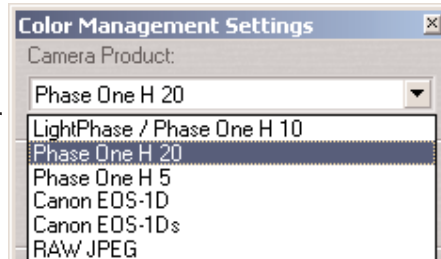


**Color Adjustments**

All adjustments a copy of the original profile. The Capture One software automatically copies the master profile to avoid unintended overwriting of an original profile.

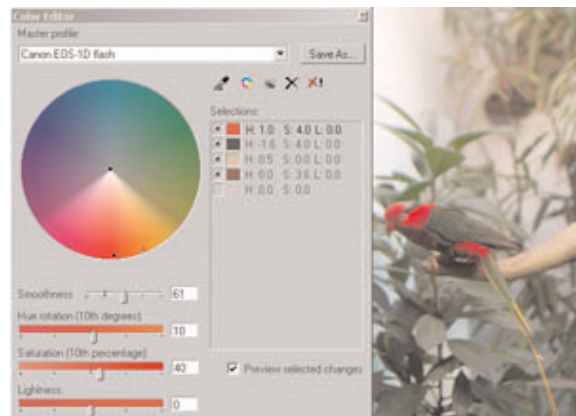
Use Save As to store the new adjusted profile under a new name once all corrections have been carried out.

All new profiles are added to and can be selected from the camera profile drop-down box in the Color Management dialogue box.



**Local Color Adjustment**

By means of the color picker tool specific colors can be picked out directly from the selected image. The Selections field lists the colors you pick out. Such adjustments are called local color adjustments.



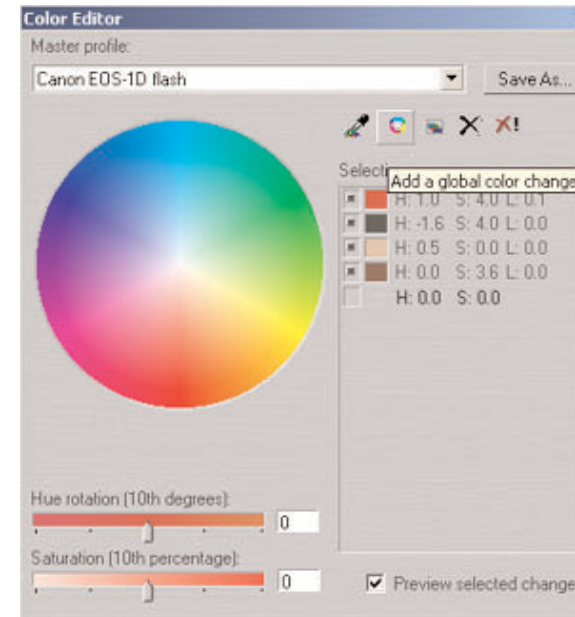
The **smoothness** slider makes color adjustments smoother i.e. by enhancing the smoothness a red color correction will slightly affect neighbor colors like magenta and yellow as well.

**Hue rotation, Saturation and Lightness** adjustments can be verified immediately on the screen.

The color wheel is a graphic illustration of the colors that are affected by the adjustments you are about to make. By pulling the handles of the color wheel or the smoothness slider the area of affected color is expanded or minimized.

**Global Color Adjustments**

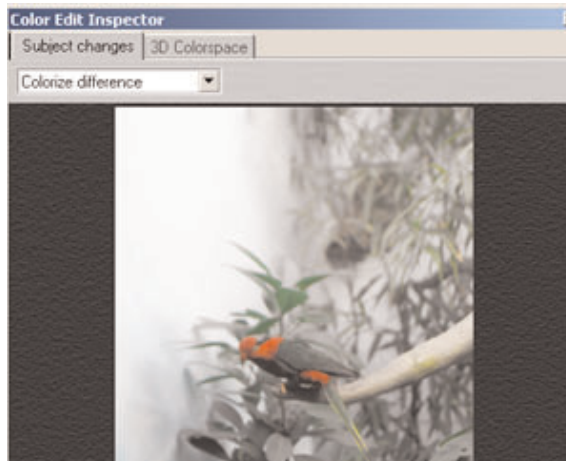
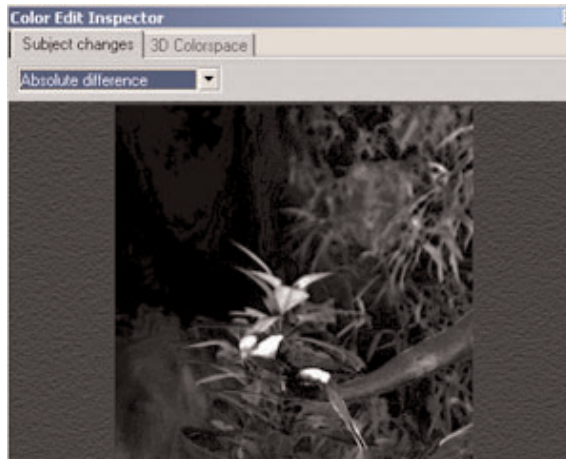
If you prefer to adjust all colors simultaneously you can do this by adding a global color adjustment to the list of selections.



Hue rotation and saturation can be adjusted and the result is displayed instantly on the screen.

**Color Editor Inspector**

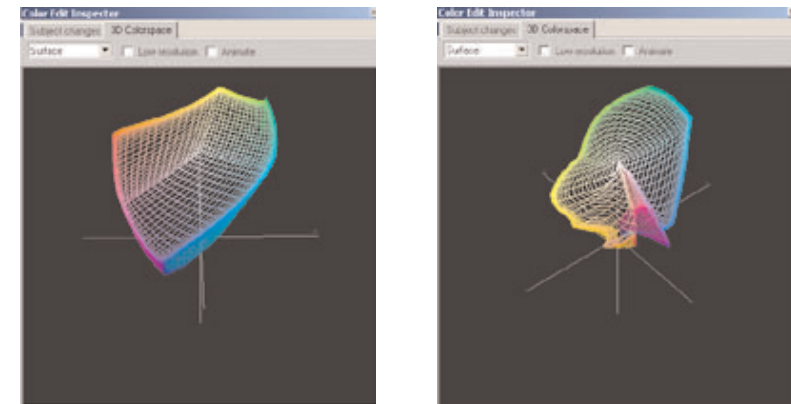
Profile adjustments should be carried out with care there is always a risk of creating a profile that will do more damage than good. In order to avoid unpleasant surprises the Color Editor includes an inspection tool that can help you verify the characteristics of the profile before you save it and take it into use.



The Subject changes tab is where the color affected by the adjustments are displayed. **Colorized difference** shows a monochrome image that displays color corrected areas with colored highlights. **Absolute difference** shows a completely black image where only the color corrected areas are visible.

The **3D Color Space** provides a graphic illustration of the profile's color space. The color space illustration gives a clear indication of whether or not the profile is suitable for use in a professional color management workflow. A smooth and even color space indicates that the profile is acceptable and vice versa.

Best case - worst case scenario:



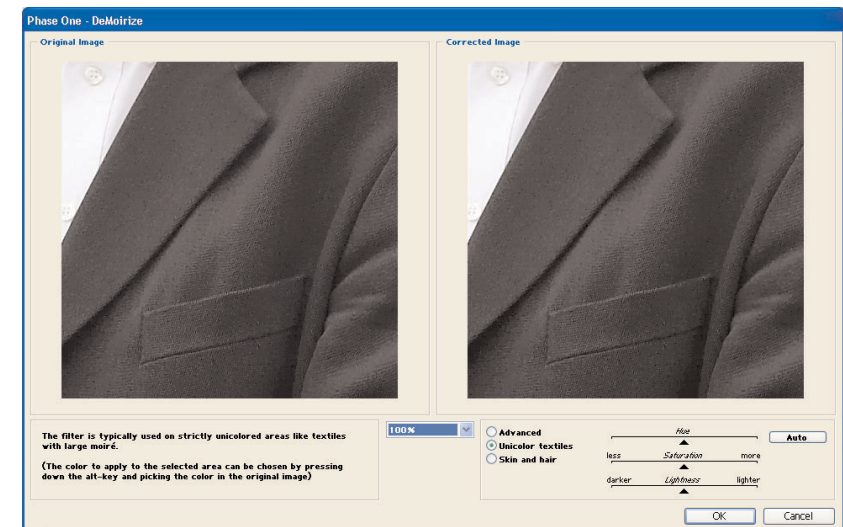
If you wish to learn more about color management you can download the Color Management User Guide from [www.phaseone.com](http://www.phaseone.com) (Tech Support/Knowledge Base)

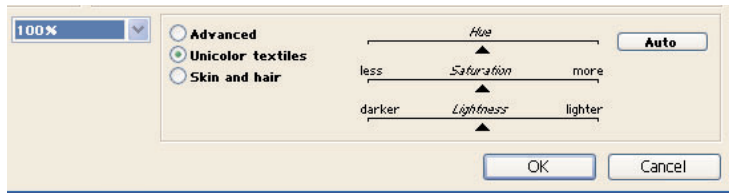
## 7 Demoirize Plug-in

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.

## 8. Trouble Shooting

If technical problems are experienced when working with the Capture One Software please contact your Phase One dealer.

You can consult Phase One's FAQ's under Tech Support on [www.phaseone.com](http://www.phaseone.com)

## 9. DSLR Cameras

Capture One 2.9 supports a range of DSLR Cameras. Follow the normal procedure for capturing images described in the DSLR camera manual.

Capture One 2.9 has two ways of operation with DSLR cameras: Tethered operation where the camera is connected to a computer via IEEE 1394 and untethered operation where the raw files from the DSLR Camera is transferred to a computer running Capture One 2.9.

### Working Untethered (DSLR Cameras Only)

If you have been out working in the field and you wish to edit and process your images through the Capture One software, then this is what you do:

1) Connect the camera to the computer through an IEEE 1394 cable (please refer to the section '**Working Tethered**').

2) Click on the camera storage icon from the Capture One tool bar, and all RAW images are automatically loaded into the capture collection that becomes available.



1) Use the card reader to transfer the RAW images to the computer.

2) Use the Capture One's capture collection browser to access the RAW images stored on Compact Flash Card.

## Working Tethered

You can shoot directly into the Capture One software by connecting the Phase One or DSLR camera to the computer. This is called working tethered and is very useful if working in the studio.

- 1) Turn on the DSLR camera and set it up for RAW capture (Quality must be set to RAW). Please note that the camera's white point is overruled by the gray balance set in the Capture One software (DSLR Only)
- 2) Connect the camera to the computer through an IEEE 1394 cable.
- 3) Make sure that the DSLR software drivers that comes with the camera is installed on the computer.
- 4) Open the Capture One software by double-clicking on the application icon.
- 5) Open the File menu, and select 'Reconnect Camera' to detect the DSLR camera. Phase One digital backs connects automatically.

All captures are stored on the computer hard disk as opposed to the Compact Flash card. You are ready to shoot directly into the Capture One application.



## 10. System Requirements

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

PC:	Pentium III
RAM:	min. 384 MB
Operating system:	98SE/Me/2000/XP Professional + Home
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.

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



## 11. 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.
<b>Voltage*</b>	24V DC	500V DC
<b>Current**</b>	100mA	1A
<b>Fall time***</b>	1ms	1ms

#### LightPhase S/N BB00/BB01:

	ISO Standard Max.	Phase One Max.
<b>Voltage*</b>	24V DC	300 VDC
<b>Current**</b>	100 mA	130 mA
<b>Fall time***</b>	1ms	20 ms

#### 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)

**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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**12. 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

**Phase One H 101 for Hasselblad H 1**

H1	+
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**Phase One H 5/H 10/LightPhase for Mamiya RZ67 Pro II**

<b>Camera Systems</b>	<b>Status</b>
Mamiya RZ67 Pro II	+

<b>Lenses</b>	<b>Status</b>
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/LightPhase for Mamiya 645AF (NOT 645 AFD)**

<b>Camera Systems</b>	<b>Status</b>
Mamiya 645AF	+

<b>Lenses</b>	<b>Status</b>
Mamiya 645AF	+

**Phase One H 10 for Mamiya 645AF-D**

Mamiya 645AF	-
Mamiya 645AFD	+

<b>Electronic Shutters</b>	
Horseman ISS-G2 Shutter	+

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

<b>Camera Systems</b>	<b>Status</b>
CONTAX 645	+

<b>Lenses</b>	<b>Status</b>
CONTAX 645	+

<b>Lenses via Adaptors</b>	
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

<b>Electronic Shutters</b>	
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	+ <sup>6</sup>

**Electronic Shutters**

Horseman ISS-G2 Shutter	+
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**DSLR Cameras**

Canon EOS 1 d	+
Canon EOS 1 ds	+

**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. (LightPhase, H 5, H 10-6 Mega Pixel only). H 10 11 Mega must be in Dig modw when rotated.
6. Via optional adaptor from Phase One or 3rd party manufacturers
7. Camera must be in DIG mode

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