

Hasselblad Phocus

User Guide v25

2021-04-22



HASSELBLAD
CREATE TO INSPIRE

Welcome



Photo: Martin Schubert

Welcome to Phocus

It is our hope that you will open Phocus, take a look around, and be inspired to get to work with an imaging workflow that develops according to the way you want things to happen.

Uncompromising Image Quality

The Phocus RAW processor provides the ultimate in processing quality for Hasselblad digital images, including:

- Digital lens corrections for color aberration, distortion and vignetting (DAC I, II, and III)
- Hasselblad Natural Color Solution (HNCS) for perfect colors
- Moiré removal directly upon raw data, preserving image detail
- Selective adjustments using the Adjustment Layers tool
- GPU usage for image processing on compatible computers. For faster image exports and improved viewer performance when zoomed to 100% and above.

Phocus for Mac supports standard file formats such as TIFF, JPEG, DNG and PNG while Phocus for Windows supports TIFF and JPEG (see File Support section for full details and Hasselblad website for updates). Phocus for Mac also supports files from more than 150 cameras, including Canon, Nikon, Leica, Sony, Fuji, Olympus, etc.

Perfect Viewing Quality

The Viewer uses all the advanced features contained in Phocus to deliver image viewing quality that matches every detail of what you will see later in your chosen image editing program if you wish to edit further. In addition, the Phocus Viewer allows you to customize layout and composition to suit your current or desired workflow, providing a wide range of options including full view, compare, browse, horizontal, or vertical view, and so on. You can have multiple folders open simultaneously for side-by-side viewing, comparison, and selection.

Camera Controls

Phocus also provides special extended controls with which to operate a Hasselblad camera. These features, such as live video for easier photo shoots and workflow, or the ability to control the focus when the camera is in a remote position or when the digital capture unit is mounted on a view camera, bring an entirely new level of flexibility to the way you shoot. Add to that the Phocus Mobile application for iPhone / iPod and iPads and you have the ultimate in remote control and shared viewing.

Flexible Workflow

Phocus features easy-to-use options that allow you to customize your set-up to suit a range of different workflow situations— simple or advanced. Multiple folders can be open at the same time, while Quick Collection folders make handling your choices simple and easy. Image export to a number of file formats combined with pre-setting of options. Customized workflow layouts can be edited, saved, exported and imported to ensure continuity of workflow across different workstations. For added choice, Phocus Mobile sets you free from being right behind the camera while Phocus Quick offers super fast JPEGs for almost immediate sorting, handling and distribution for rush jobs.

Metadata

The basic metadata architecture in Phocus follows the IPTC Core standard with XMP. Working with Hasselblad 3F raw files, the extended metadata architecture available provides for detailed and accurate image adjustment, cataloguing and indexing, providing extra benefits such as:

- Extensive and easy overview of file information and its adjustment history.
- All settings with regards to capture, angle, equipment, tilt/shift amount, extensions etc. are stored as metadata directly in the image file for full interaction with Digital Lens Corrections (DAC).

Leading Edge Moiré Removal Technology

With Phocus, the moiré that can occur on even extremely high resolution Hasselblad images is effectively removed in most cases. Moiré removal is automatically performed directly on the raw data, leaving image quality intact and eliminating the need to carry out special masking selections or other manual procedures, saving hours of tedious post-production work. The moiré tool works with Hasselblad raw files only.

Compatibility

Phocus runs on Macintosh and Windows platforms that use recent operating systems. All USB and FireWire based Hasselblad camera units are supported. Please check the Phocus Read-Me notes for details, requirements and restrictions.

Computer configuration recommendations

Medium-format image file editing requires a moderate amount of processing power from a computer to ensure smooth and rapid workflow. Please check the Read Me files for recommendations about hardware, graphics cards, memory requirements and configurations etc., to obtain the optimum performance from Phocus.

Integration of self-calibrating Eizo displays

Calibration of these displays can be carried out directly from Phocus. This ensures that the display is set up to provide the best possible viewing results of Hasselblad images. If an eligible monitor is connected, Phocus will automatically display a dialog concerning calibration. If you choose to go ahead you will be guided to an extra Eizo tab in the Preferences window where it is possible to set up calibration options and start the process. This preference tab will also let you toggle whether Phocus should handle calibration or not.

It should be noted, however, that it is not currently possible to make a seamless integration with calibrations made by Eizo's own ColorNavigator software. Therefore once you have made a calibration using Phocus, launching ColorNavigator will switch the display back to the last calibration made by itself. When you switch back to running Phocus you will be prompted about this change and will be offered the opportunity of restoring the calibration made by Phocus or, alternatively, disallow the handling of calibration from Phocus. As just running the ColorNavigator Agent will cause interference it is recommended that you switch off the option in the ColorNavigator preferences dialog.

The calibration target chosen by Phocus will of course be optimized to work with Hasselblad RGB and Hasselblad L* RGB working spaces but it should be noted that the resulting calibration will also work well even when using a somewhat smaller working space such as Adobe RGB in Photoshop. However, if you routinely view images in much smaller working spaces such as sRGB you should make a special calibration for this purpose using the Eizo Color Navigator software.

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Updates

Phocus, in line with any Hasselblad product, is continually reviewed. Please occasionally check on the Hasselblad website – www.hasselblad.com – for news as well as the latest updates.

About this manual

This manual describes the workings of Phocus (Mac/Windows UK versions from version 2.7.1 or earlier and up to version 3.6) and how to use it on Macintosh and Windows platforms. The graphical user interfaces are very similar in appearance so the illustrations are based mainly on Macintosh screen captures with additional Windows captures where necessary. Likewise, the operative procedures are almost identical across the two platforms, with the largest difference being shortcuts. Again, these are illustrated and explained where necessary. Shortcuts are indicated by red text and *symbols for Macintosh* users and blue text and *symbols for Windows* users. Some actions require a right click with a two-button mouse. On Mac platforms this can also be achieved by holding the down the Ctrl key while clicking with a one-button mouse.

The manual is purposefully aimed at experienced photographers, rather than beginners, who are committed to exploiting the tremendous opportunities of professional level digital photography. It is assumed, therefore, that the reader already has a reasonable amount of proficiency in working on a computer and working with image editing software. Concepts such as menu structures, file systems, file storage, tools, etc, should be familiar. It is also assumed that certain digital photographic concepts such as color correction, sharpening, curves etc., are also familiar. In that way, the manual acts more as an informational source to specifically support the elements and building blocks of Phocus, rather than a step-by-step guide through image editing generalities. For non cover-to-cover readers, some information is purposefully repeated and appears on several pages.

We encourage you to explore and discover the tremendous possibilities that Phocus offers. The philosophy of the program does not follow a fixed workflow or methodology. It is you who decides how to exploit the most from it, using customization and presets to create a personalized working environment. It is you who picks the tools and fine-tunes methods to get the most out of your images.

You are recommended therefore to have the manual at hand in the early stages to ensure that you are taking advantage of what Phocus can offer. Old habits might hinder your progress towards the optimum in workflow and results, so occasionally dip into this manual to ensure you have everything that you need at your fingertips.

Please be sure to read the 'Read Me' files that accompany a Phocus download for the latest updated information.

New in this version

The following features has been added in Phocus version 3.6:

Defringe tool

The Defringe tool is added to remove purple and green fringes in the images that are not handled by the automatic lens corrections. These fringes can be caused by several different reasons:

- *Axial chromatic aberration where unsharp areas in high contrast can have green or purple cast.*
- *The lens used does not have automatic lens correction.*
- *The lens used differs slightly from the theoretical model.*

For more details, see page 51.

Adaptive correction for Chromatic Aberration.

A new method for Chromatic Aberration correction using image analysis, has been added to the Lens Correction tool. See more on page 57

Film grain tool

The film grain tool adds a highly customizable simulation of film grain. See more on page 52.

Focus Bracketing

The Capture Sequencer tool now includes a tab for controlling a focus bracketing sequence. See page 49 and page 88 for details.

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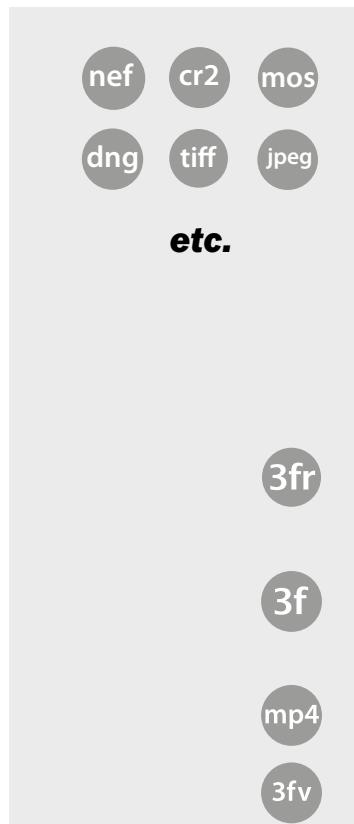
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File Support



Phocus primarily fully supports Hasselblad 3FR and 3F files with more limited support for other format files. The Mac platform allows file viewing and limited editing of not only TIFF, JPEG, DNG and PNG files for example, but also more than 150 third-party digital cameras, including Canon, Nikon, Leaf, Leica, Sony, Fuji, Olympus etc. The Windows platform supports TIFF and JPEG files.

Hasselblad raw files can also be processed with other selected software applications, namely, Adobe Camera Raw / Lightroom and Apple Aperture. Note, however, that using Phocus is the most comprehensive method. The Phocus and Adobe methods can produce almost identical results (in most cases) regarding RAW conversion so it is a matter of personal choice regarding which method would best suit your preferred workflow. Alternatively you can use Apple Aperture though you should take note that the benefits of DAC and HNCS etc, will be lost in this case. Please check the Phocus Read-Me and our web page for updated information.

3FR: These files are a result of captures stored on CF cards generated by untethered Hasselblad equipment. They are visible as 3FR badged thumbnails and remain as such until selected and 'imported' where they then become 3F files.

3F: These files are a result of either captures generated by tethered Hasselblad equipment or as a result of 3FR files being processed to completion within Phocus. 3F files do not have to be 'imported' and can be adjusted and exported immediately. Exported 3F files include integrated metadata.

MP4: MP4 video files can be previewed in the viewer.

3FV: RAW video files (H6D-50c and H6D-100c) can be exported to Cinema DNG or Apple ProRes.

To sum up, capture files can be stored as 3FR files (from a CF card) for later processing in Phocus or other software, or they can be stored as 3F files (as a result of tethered shooting or 3FR files processed and converted in Phocus). In all cases if you keep the original 3FR/3F files, you will also retain the possibility of reprocessing them in the future in later versions of Phocus or other software to take advantage of eventual improvements and developments.



Other (Mac only): This group comprises a list of various formats, both raw and non-raw, proprietary and general. These files are initially read and processed via the integral Macintosh OS X support before they are adopted by Phocus. This means the contents of a folder containing a mix of image-format files can be viewed in its entirety in Phocus.

As these files can contain data that is written differently to Hasselblad files, there can therefore be a restriction on the effect that tools in Phocus could have. In practice this means you should expect the following tools to be inactive: **Highlight recovery, Shadow fill, Clarity, Lens corrections, Noise reduction and Scene calibration.**

However, other tools can be freely used and in order to retain the adjustments, so called **sidecar** files are created. These are separate files that contain the necessary data that any following application needs to reconstruct the image the way you intended in Phocus. The files use the same name or designation that the original raw file had but to distinguish them from the originals, the sidecar files acquire a new suffix: **.phos**. These sidecar files are automatically stored in the same folder as the original files. The important point to remember here is that when transferring any non-Hasselblad files that have been adjusted in Phocus to another folder, to another computer or to an external storage medium, you must remember to include the sidecar files too. Otherwise all the changes and corrections you made in Phocus will be lost until you re-unite them. When moving or copying files inside Phocus, however, the sidecar files are automatically copied with the raw file.

Be aware that initial previews of third party raw files might reflect the consequences of processing according to the manufacturer's standards. This would be particularly noticeable in regard to curve and color renditions. So, for every adjusted or exported file, Phocus creates and stores individual preview files in the **Preview Cache** folder that resides in the Phocus Application support folder.

Though not necessarily normal workflow practice, adjustments can also be made on non-raw files if desired.

Please note:

Image files from all Hasselblad USB and FireWire based digital camera products are supported.

- Tethered operation works with all Hasselblad USB and FireWire based digital camera products except for the first generation Ixpress series.
- Capture of micro-step images (multi-shot) is not supported.
- Scanner 3F files are not supported.
- 3F files generated by Phocus are not backward compatible with FlexColor.

Getting Started

The following is an introduction to the structure and workings of Phocus and what it can offer.

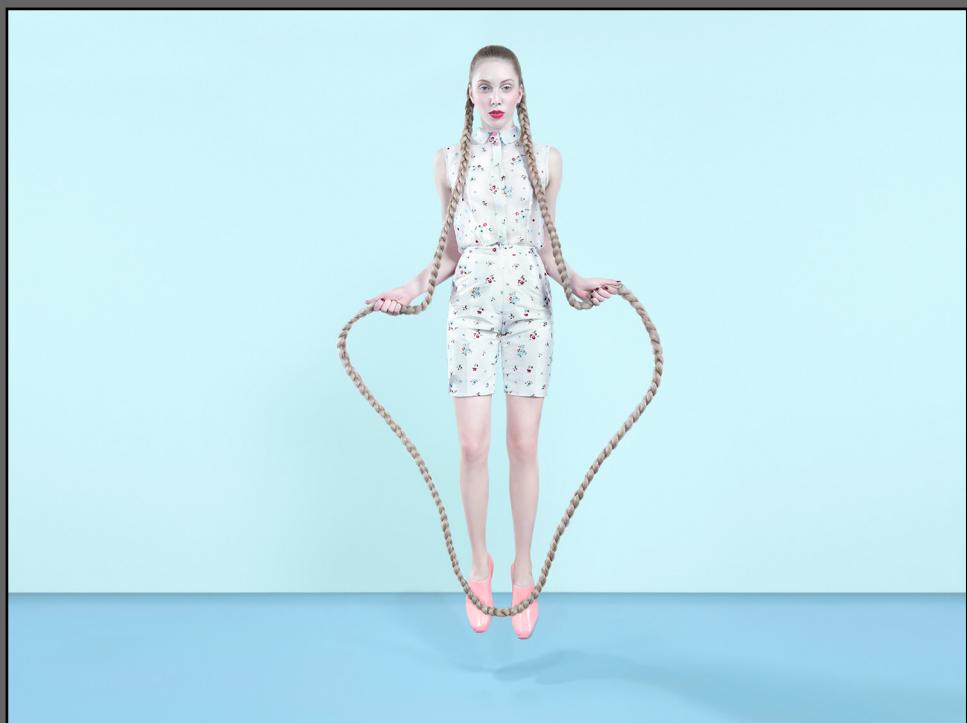
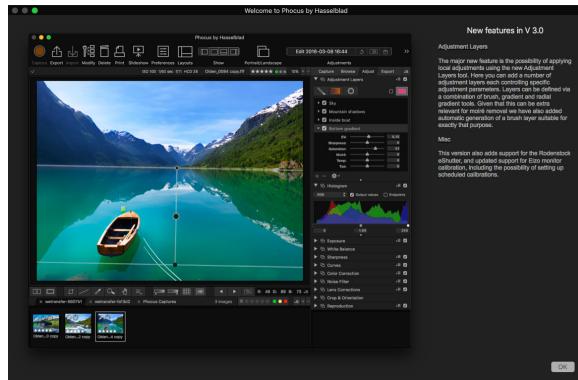


Photo: Bara Prasilova

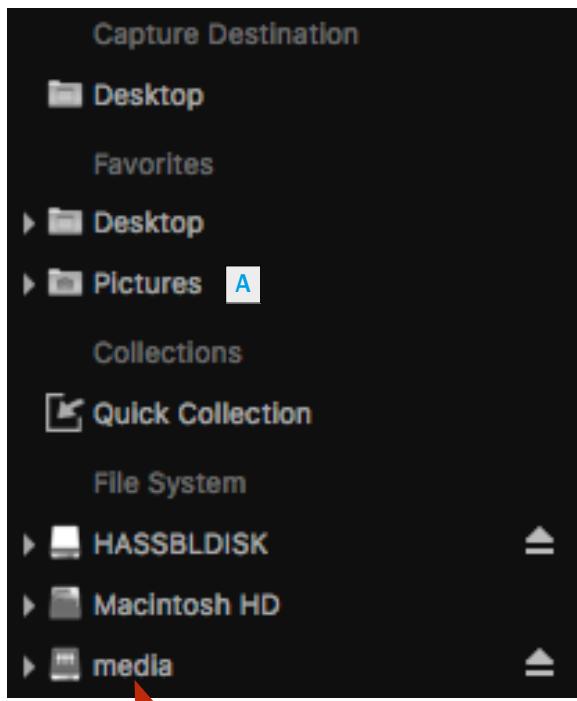
Getting Started



If you are not yet registered to MyHasselblad, please go to <http://www.hasselblad.com/my-hasselblad/>. You can choose whether you would like to be sent e-mails regarding software and firmware updates as well as general information about Hasselblad.

After registration you can download the latest version of Phocus for Mac or PC.

When Phocus is launched, a welcome dialog appears that offer a variety of information. **New Features in...**, for example, provides an overview of the latest improvements in Phocus.



Folders, card readers, memory sticks, hard drives, Quick Collections etc., containing captures appear in the File Browser. Clicking these will reveal their contents in the Thumbnail Browser.

File Destination: When opened for the first time, Phocus automatically creates a file-destination folder called **Phocus Captures**, located in the **Pictures A** folder on the hard drive, where images shot tethered (with the camera connected) will be stored. Imported images from a memory card will be located in the destination folder you chose during the import process.

File Source: Captures can be imported from a CF card in a reader or directly from a camera in tethered mode. When connecting a Hasselblad camera it will show up in the **Camera Tool**. The capture button in the top left part will also turn bright orange. When working tethered to a Hasselblad camera, all images are captured to the current destination folder and displayed in the **Thumbnail Browser**.

Basic overview



Note

- 3FR thumbnails represent untethered Hasselblad/memory card stored files and require importing into 3F files to be able to view them in detail. You can, however, print and export 3FR files directly without importing them if required.
- 3F thumbnails do not need processing. They are generated either directly from tethered captures or from imported 3FR files.
- The Mac version of Phocus supports a variety of other raw formats as well as JPEG, DNG, TIFF. See **File Support** section for more information.

Phocus main window will display the **File Browser** A on the left, **Tools** B on the right, the **Viewer** C in the middle with **Thumbnails** D below.

Import

Connect the Hasselblad camera (USB or FireWire, depending on camera model) or a card reader to import captures stored on a card. Hasselblad equipment can be connected (tethered) to a computer for direct capture or image import without needing to use a card reader.

Files

Images, whether from a memory card or from a tethered camera are displayed automatically in Phocus. See previous section for details.

File Browsing

Tethered captures and card reader content will appear automatically in the **Thumbnail Browser**. Otherwise, click on the appropriate capture storage symbol (camera/hard disk/memory stick) to reveal the folder contents as thumbnails in the **Thumbnail Browser**.

Video files

Video files in MP4 format can be previewed in the Viewer window.

Adjustments

Click on thumbnails to make them appear in the **Viewer** where they can be adjusted (3FR files must be selected first and then processed by clicking on **Import** E).

Select the required tools from the four tabbed tool collections B and make the desired adjustments.

Basic Options

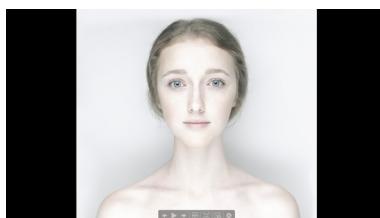
With the thumbnails visible, you can make a selection of the desired image files by clicking on them (Shift click for contiguous multiple selection or Cmd/Ctrl click for multiple individual selection). A selected image displays a white border surrounding it. You can choose between several options that provide immediate and automated actions regarding the selected images:

Slideshow - displays selected files.

Print - prints selected files.

Export - saves selected files in the format of your choice to a folder for storage or use on another computer or image editing application.

Slideshow



The Slideshow feature produces an easy-to-use, full screen display in seconds.

1. In the **Thumbnail Browser**, select the files you want to display in **Slideshow**.

All supported files (see **File Support** section for further details will work, except for non-imported Hasselblad 3FR files).

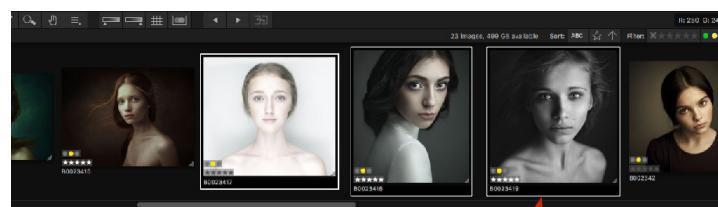
2. Click the **Slideshow** icon in the toolbar or choose **Slide-show** via the Image menu.

Mac

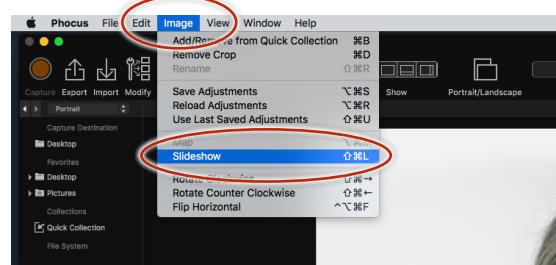
+ +

Windows

+ +

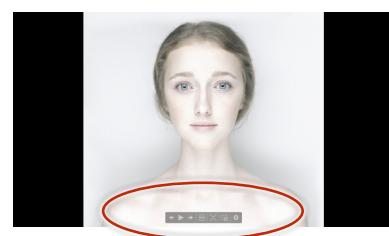


Thumbnails bordered with white show they have been selected for inclusion in the slideshow.



Additional functions on Mac platforms.

- Select required action from control panel.



Back, play/pause, next



Index sheet. Mouse over file for information. Select any file to revert.



Fit to screen or Actual size. Toggle function.

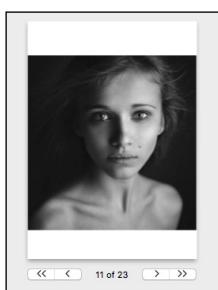


Adds selected file directly to iPhoto collection.



Stop button (or use Escape button).

Print



The Print feature offers high resolution direct print capabilities plus contact sheet creation. It includes features such as orientation, scaling, output size, color management, layout choice, etc..

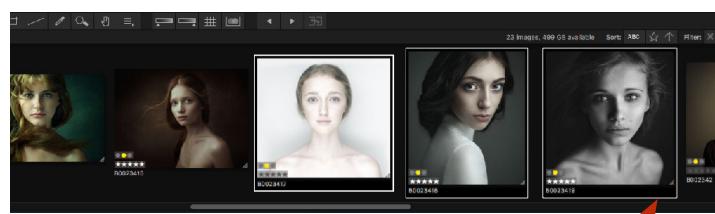
- In the thumbnail browser, select the files you want to print then either:

- click the **Print** icon in the toolbar
- choose **Print** via the **File** menu
- use the shortcuts:

⌘+P

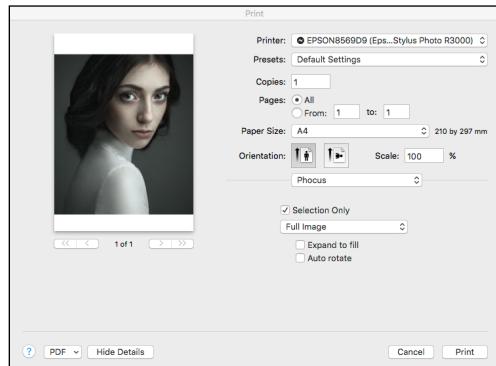
Ctrl+P

Any of these reveals the Print dialog box.



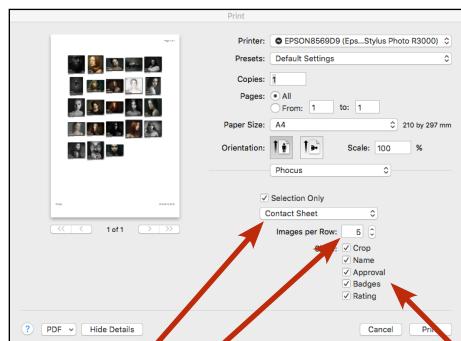
Thumbnails bordered with white show they have been selected.

Full image prints

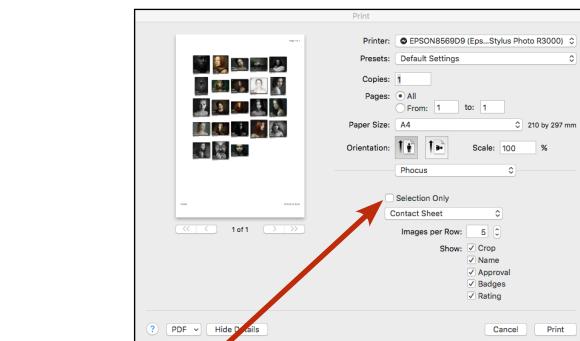


- The dialog allows several choices. Print quality is automatically full resolution. Even 3FR files can be printed directly without processing to 3F files first.
- Check **Full image** to select maximum coverage of print medium. Check **Auto rotate** to set the correct orientation. You can also select next or previous image(s) here. See later section for further information about more possibilities.

Contact sheets



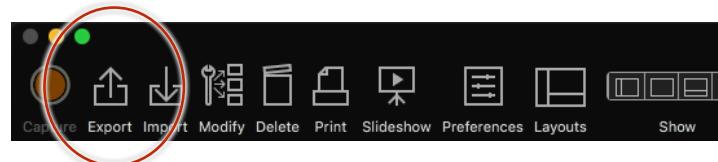
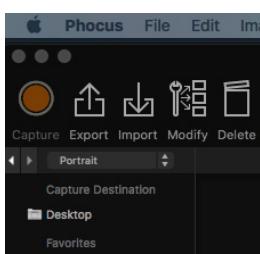
Check **Contact Sheet**. Select the required layout in **Images per Row**.



Check boxes to include information.

Check **Selection Only** to print the original choice. Leave unchecked to print all images in folder.

Export



Export allows you to export (convert) images into a variety of file formats such as JPEG, TIFF, DNG etc. It also offers simultaneous export of extra copies in the same or another file format.

1. In the **Thumbnail Browser**, select the files you want to export then either:
 - click the **Export** icon in the toolbar
 - choose **Export** via the **File** menu
 - use the shortcuts:

⌘+S

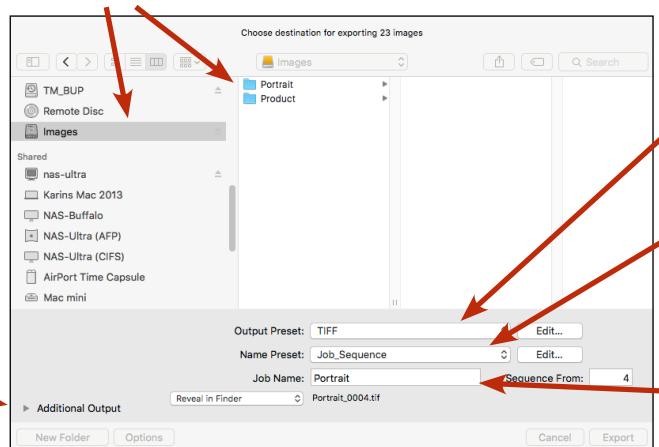
Ctrl+S

Any of these reveals the Export dialog box.

2. The **Export** dialog provides several choices:

- a) Where you want the exported file(s) to be stored.
- b) What types of file(s) you want.
- c) What type of naming you want the file(s) to have.
- d) Multiple output.

a) Choose file destination in conventional manner.



b) Click here to reveal a choice of formats.

c) Click here to reveal naming choice.

Type job name here.

d) If required, click here to extend dialog box for multiple output.

(See **Adjustments** section for full details about choices)

Layout Overview

Phocus is designed to be customized to suit your individual workflow.

The following is an overview of layout possibilities.

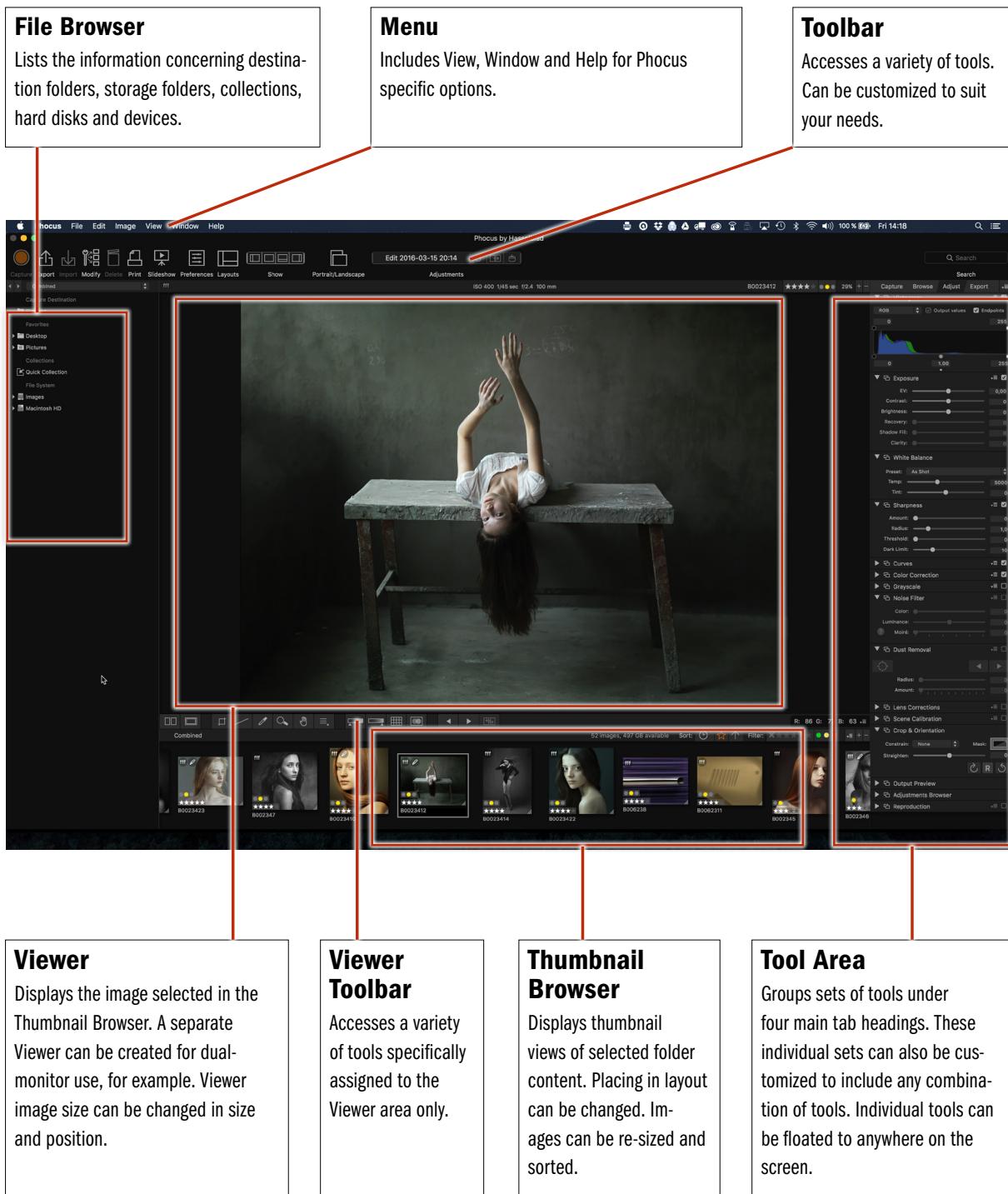


Photo: Rafal Maleszyk

Layout overview

This illustration highlights and describes the main areas as referred to in this manual.

Please note this is just an example of one layout possibility. Layouts and content can be changed at any time.



Viewer

Displays the image selected in the Thumbnail Browser. A separate Viewer can be created for dual-monitor use, for example. Viewer image size can be changed in size and position.

Viewer Toolbar

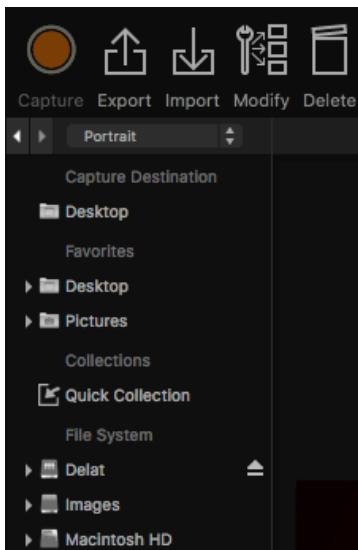
Accesses a variety of tools specifically assigned to the Viewer area only.

Thumbnail Browser

Displays thumbnail views of selected folder content. Placing in layout can be changed. Images can be re-sized and sorted.

Tool Area

Groups sets of tools under four main tab headings. These individual sets can also be customized to include any combination of tools. Individual tools can be floated to anywhere on the screen.



Mac: ⌘+⌘+B
PC: Ctrl+↑+B



Mac: ⌘+⌘+V
PC: Ctrl+↑+V
Mac: ⌘+⌃+⌘+V
PC: Ctrl+↑+Alt+V
Mac: ⌘+F
PC: Ctrl+↑+F

Tip

Option click a tab head to trigger a customized preset change to the main layout. See **Preferences** for details.

The following is a more detailed description of the main areas. Some shortcuts are mentioned but not all. See relevant sections for further information. There is a complete list of keyboard shortcuts towards the end of this manual.

File Browser

The **File Browser** (not to be confused with the **Browse** tool tab) consists of **Capture Destination**, **Favorites**, **Collections**, **File System** and **Devices**.

It lists all the storage locations under one heading. It can be made narrower by dragging the divider to the left. It can be hidden to increase the viewing area, for example, by using the commands mentioned here. Note that it cannot be placed anywhere else but on the left hand side of the layout.

1. Menu > Window > Hide Browser - expands area for **Viewer** and the **Thumbnail Browser** displays. Toggle function.

2. Menu > Layouts hides and shows **Browser** depending on choice.

Viewer

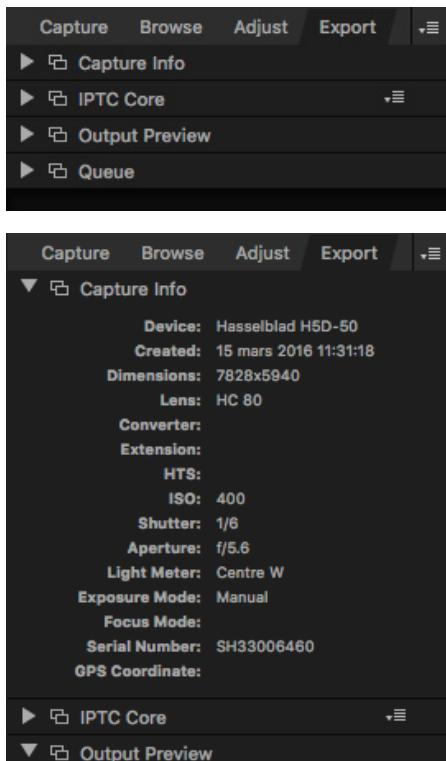
The **Viewer** is the main area for image checking. A **Viewer Toolbar** runs along the bottom of the **Viewer** in all layouts. The view's size can be changed by dragging the **Viewer Toolbar** up and down in the default (Landscape) layout. In Portrait mode the divider can be dragged to the left or right to change size also.

- 1. Menu > Window > Hide Viewer** - expands area for **Thumbnail** displays. Toggle function.
- 2. Viewer in Separate Window** - creates a separate window for the **Viewer**.
- 3. Full Screen Viewer** - fills the screen with **Viewer** and **Viewer Toolbar**. Toggle back or press ESCAPE button to exit full screen mode.
- 4. Menu > Layouts** hides and shows **Viewer** depending on choice.

Tool Area

The **Tool Area** consists of four tabs: **Capture**, **Browse**, **Adjust** and **Export**. Each of these tabs can be customized for content.

- 1. Menu > Window > Hide Tools** - expands area for **Viewer** and **Thumbnail** displays. Toggle function.
- 2. Menu > Window > Layout** hides and shows **Tools** depending on choice.



If you want to customize a tab, click on it to bring it to the front. Click on the tool you want to move and use any of the following procedures:

Drag and drop any tool to another position on the list.

Drag and drop any tool to anywhere outside of the Tool Area to remove it.

Click the float icon to close the tool on the list and create a floating tool in the Viewer.

Click the right hand menu icon on the tab header to reveal a list of tools. Clicking on a tool will add it to the selected tab. A default tool set is also a choice.

Some tools have a menu icon on the tool header to reveal further options and a check-box for activation.

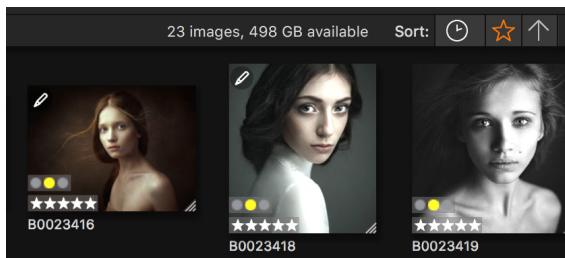
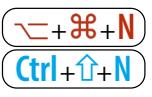
Any tab can contain any or all tools!

Thumbnail Browser

The **Thumbnail Browser** can be located beneath the Viewer, to the left of the Viewer, or replace the Viewer so that it fills the central area.

1. Menu > Window > Thumbnails expands area for **Viewer** displays. Toggle function.

2. Menu > Layouts hides and shows **Thumbnails** depending on choice.



Layouts

Layouts can be configured to speed up workflow and facilitate certain actions. For example, you might prefer the very simplified **Light** layout for fast checking and exportation and another layout complete with specific settings for individual image adjustments.

Layouts can be changed by the options on the **Toolbar**. Your own customized layouts can be saved/edited by **Toolbar > Layouts > Edit**.

In the menu **Phocus > Preferences**, triggers can also be assigned to trigger specific layouts, such as when connecting a camera, for example.

Later sections in this manual take up each tool individually as well as some expanded sections for descriptions in greater detail of various aspects.

File Browser

The File Browser lists all the storage locations under one heading and consists of Capture Destination, Favorites, Collections, File System and Devices.



Photo: Roman Jehanno



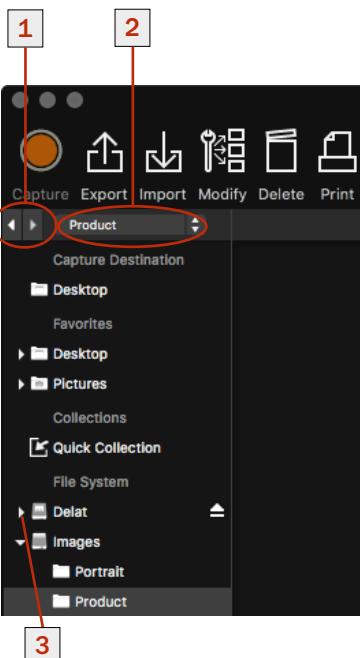
File Browser

SHORTCUT

Show/Hide

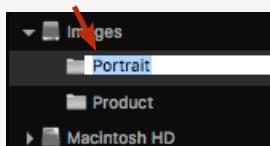
⊖ + ⌘ + B

↑ + ⌘ + B



Tip

Click on a folder name to edit it.



Tip

Double click folders to expand or collapse them.

The File Browser provides easy access to your complete file system and directly links to convenient image folders such as: **Capture Destination**, **Favorites** and **Collections**. A right click in the **File Browser** opens a menu with command options for: Add to **Favorites**, Use as **Capture Destination**, **Reveal in Finder**, **New Folder**. Any folder name can be edited by clicking on the name itself, though volume names cannot be changed.

Layout

The view can be made narrower or wider or it can be hidden completely:

- Drag the divider to the left or right to alter the width of the view.

Choose **Menu > Window > Show / Hide Browser** (or use shortcut).

Note, though, that the **File Browser** cannot be located anywhere else but on the left hand side of the layout.

Navigation

- Click on the arrows **1** on the header bar to navigate through recent folders. The folder name appears in the **File Browser** menu **2**.
- Click on the **File Browser** menu to reveal all recent folders. Click on a folder to display contents in the **Thumbnail Browser**.
- Click on the disclosure triangles **3** to successively navigate to the desired folder. Click on the folder to display contents in the **Thumbnail Browser**.

List of files

Capture Destination: Contains the folders that store imported or saved captures.

When Phocus is launched for the first time, a **Phocus Captures** folder is automatically created and appears on the desktop, by default. This folder becomes the automatic destination folder for all captures whether they are imported from a memory card or directly from a tethered camera, until you choose otherwise.

You can access the **Phocus Captures** folder in the **File Browser** panel under the **Capture Destination** heading. Clicking on the **Phocus Captures** icon will cause the contents to appear in the **Thumbnail Browser**.

Other folders can be created or chosen as destination folders instead of the **Phocus Captures** as follows:

- Create a new folder and name it.
- Choose the **File Browser** and navigate down through the menu to the new folder.
- Ctrl click** / **Right click** it to display the pop up menu where you can select Use as Capture Destination.

Tip**Add/Remove
Quick Collection****⌘ + B****Ctrl + B**

Press **⌘ + B / Ctrl + B** to **ADD** a selected file to a Quick Collection from any folder displayed in the Thumbnail Browser.

Press **⌘ + B / Ctrl + B** to **REMOVE** a selected file from a Quick Collection (as well as the Quick Collection badge from the original file in the original folder) displayed in the Thumbnail Browser.

A file can also be removed from a Quick Collection folder by using the **backspace / delete** key.

Favorites: Contains aliases of frequently used folders. Drag selected folders to just beneath the **Favorites** heading to add them to the list.

Collections: A **Quick Collection** is a compilation of links to images, that you want to keep together for various reasons. For example, it could be the best candidates from several folders kept in one place to present to a client. Files are added to the **Quick Collection** by shortcut or drag and drop to the folder. The figure in brackets displays the number of files in the collection. Click on **Quick Collection** to display contents in the **Thumbnail Browser**.

Thumbnails that have been assigned to a **Quick Collection** acquire a **Quick Collection** icon (), whichever folder they are stored in.

Note that **Quick Collection** files are only alias files (shortcuts pertaining to the original files), not duplicate files, so if the original capture is deleted from its own folder then the alias file is automatically deleted from the **Quick Collection** folder too. However, an alias file deleted from the **Quick Collection** will not cause the original file in the capture folder to be deleted.

File System: Provides an overview of the location of your local hard drives or network volumes for accessing folders.

Devices: Shows the connected camera/digital back. Only visible when a device is connected.

Tip

Notification of any files currently being exported appears at the bottom of the file browser.

Thumbnail Browser

The Thumbnail Browser displays all the images in a selected folder. The layout can be altered while the captures can be re-sized and sorted.



Photos: Hengki Koentjoro



Shortcut

Show/Hide Thumbnails

+ + N

+ Ctrl + N



Thumbnail Browser

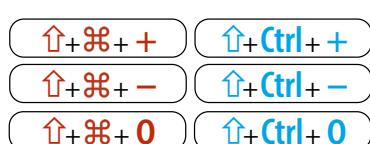
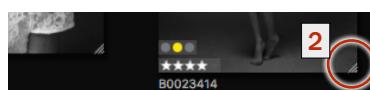
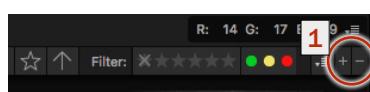
The **Thumbnail Browser** is headed by a bar that amongst other things, names the selected folder, shows how many images are in the selected folder and displays symbols for the various options available etc. See the following page for a full description.

Scroll bars can be displayed on the right and along the bottom of the browser (in both Portrait and Landscape modes) dependent on the size of the thumbnails.

Layout

At the default setting, the **Thumbnail Browser** is located at the bottom of the screen with images running left to right. To change the layout:

- Drag the divider (between the **Thumbnail Browser** and the **Viewer**) up or down (in landscape layout).
- Drag the divider (between the **Thumbnail Browser** and the **Viewer**) to the left or right (in portrait layout).
- Choose **Toolbar > Show**. Rapidly shows or hides the four main areas: **Standard**, **Browse**, **Viewer** and **Thumbnail Browser**.
- Choose **Toolbar > Layout**. Changes orientation to portrait to the left of the **Viewer**.
- Choose **Menu > Window > Show / Hide** the **Thumbnail Browser** or shortcut.
- Choose **Menu > Window > Browse > Layout** or shortcut. Fills area with thumbnails only (no file browser or tools).



Resizing thumbnails

To change the viewing-size of thumbnails:

- Click on the plus or minus signs 1 to enlarge or reduce all the thumbnails in the **Thumbnail Browser**.
- Move the drag handle 2 in bottom right corner of thumbnails. Alters size of all thumbnails globally.
- With an image selected in the **Thumbnail Browser**, press (+ + +/-0) (Ctrl + Up + +/-0) zoom symbols to enlarge/reduce/fit the viewing size of all thumbnails.

Renaming, relocating, approval (IAA) and Star rating

To rename:

- Select name to highlight it for change.

To relocate:

- Drag and drop within the view.

To change approval level rating (IAA) for both 3F and 3FR files before import:

- Select then press - 6 for Green/ 7 for Yellow / 8 for Red.

Tip

In **Thumbnail only view**,
press + 0 / Ctrl + 0 to
resize single thumbnails
to fit view.

Thumbnail viewing, filtering and sorting

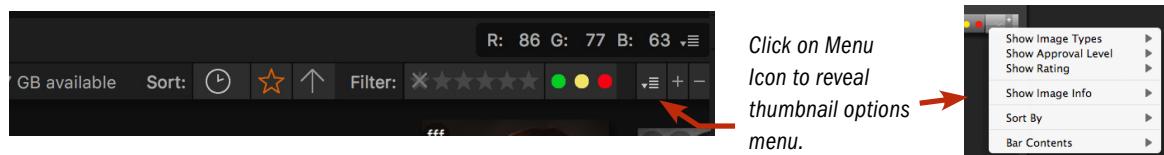
Thumbnails can be rated using either the IAA system or the Star system or both. IAA rating is automatically applied to files at capture with H camera/ CFV back firmware from before 2014 and appears in Phocus. All IAA files can be re-rated in Phocus if desired.

Images that have been rated on the X1D II 50C or the 907X cameras or later, will keep their rating when imported to Phocus. When rating is applied and embedded at export (this is an option on the Large IPTC list), it will also be accessible and usable in other applications such as Adobe Lightroom.

Both rating systems can be exploited for sorting purposes in the Thumbnail Browser using different types of filtering.

Rating is applied to selected files by pressing numerical keys on the keyboard as follows:

STAR rating	IAA rating
1 ⭐	6 ●
2 ⭐ ⭐	7 ○
3 ⭐ ⭐ ⭐	8 ●
4 ⭐ ⭐ ⭐ ⭐	
5 ⭐ ⭐ ⭐ ⭐ ⭐	



Thumbnails can be viewed and sorted in a number of ways. Click on the Menu Icon on the right side of the menu bar to reveal an options menu. Navigate down to the required item for options.

<p>Sort offers a variety of choices.</p> <p>Sort: ABC ⭐ ↑</p> <p>Click here for name, date or custom filtering.</p> <p>Ascending or descending</p> <p>Sort by rating</p>	<p>Sort by name</p> <p>Sort by date</p> <p>Custom sort</p>	<p>Filter allows you to sort thumbnails by Star or IAA rating filters. Either click on the menu bar for choice or choose from options menu.</p> <p>Star Rating Filter: ⭐ ⭐ ⭐ ⭐ ⭐</p>
--	--	--

Thumbnail options menu

Show Image Types:



Filters the displayed files according to type

For example, checking only 3f would automatically select the Hasselblad files already imported and disregard all other file types in that particular folder.

Show Approval Level:



Filters the displayed files according to Approval Level

For example, checking only the **Green** and **Yellow** rating would automatically exclude all **Red** rated files. You can also apply **Approval Level** filtering by clicking the colored buttons on the header bar.

Show Rating:



Filters the displayed files according to Star rating

For example, checking only three stars would automatically select only the files you have given a three star rating to. Checking **Unrated** selects all files with no **Star** rating.

Thumbnail options menu

Show Image Info:

- Show Rating
- Show Image Info
- Sort By
- Bar Contents

Sort By:

- Show Rating
- Show Image Info
- Sort By
- Bar Contents

Bar Contents:

- Sort By
- Bar Contents
- Filter
- Sorting

Filters the information displayed about the files

For example, checking **Crop** and **Badges** displays the actual crop of the thumbnail as well as the crop badge. Unchecking **Crop** displays the whole of the thumbnail (and badge if still checked).

Selects file sorting method

For example, checking **Name** only will temporarily disregard the date or rating of the files. Each choice can then be further filtered by clicking on the **Ascending / Descending** triangle on the header.

Hides/reveals Sort and Filter options on header bar

23 images, 499 GB available
Sort: ABC
Filter: ★★★★★ ● ● ●
+ -

Filter and Sorting revealed
Filter and Sorting hidden



Selection

Click on a thumbnail to open it in the **Viewer**. If you make multiple selections, you can select which thumbnail to view by either clicking on it or by using the cursor keys.

Tabbed Folders

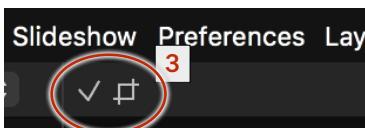
Cmd / Ctrl clicking a folder in the **File Browser** will create an extra tabbed folder **1** that appears above the **Thumbnail Browser**. This makes it easier and more efficient to manage files when working with several folders at the same time. Click on the X on the tab to close it (the **File Browser** can be closed to free up space for viewing images if required).

Options menu

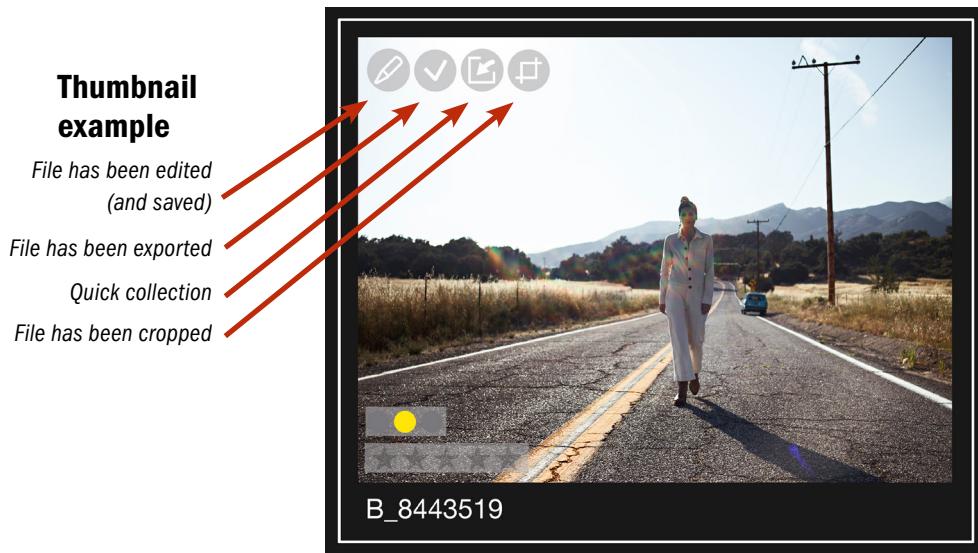
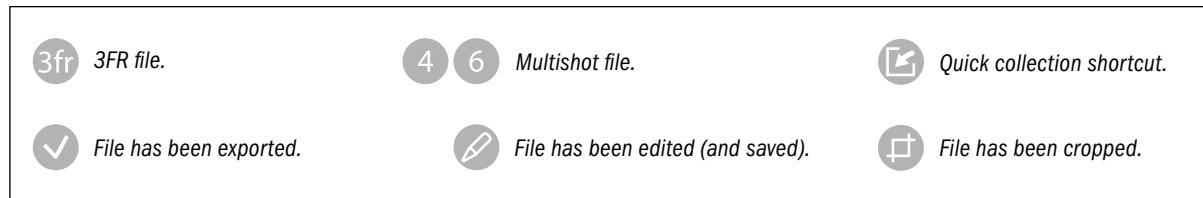
Ctrl click / Right click thumbnails to open a list **2** of time saving options. Works individually or in multiples.

Thumbnail badges

Thumbnails are badged with various appropriate symbols to display the file format, status and/or history. These also appear on the left of the **Viewer** header bar **3** as a reminder when the thumbnail browser is hidden). See next page for examples.



Badge examples



Tip

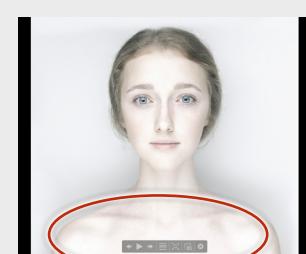
When in Thumbnails Only view, double click a thumbnail to open it in the Viewer window.

Tip

A slideshow function is available for selected (non 3FR) thumbnails. Choose Menu > Image > Slideshow.

Tip

If you have rated files (IAA, Star or both) and no images are visible (in the Thumbnail Browser or Viewer), then check to see whether you have either the IAA or Star selection filter applied.



Viewer

The Viewer displays an enlarged view of images, allowing detailed examination and adjustment of individual images. A Viewer Toolbar is available in the same view.

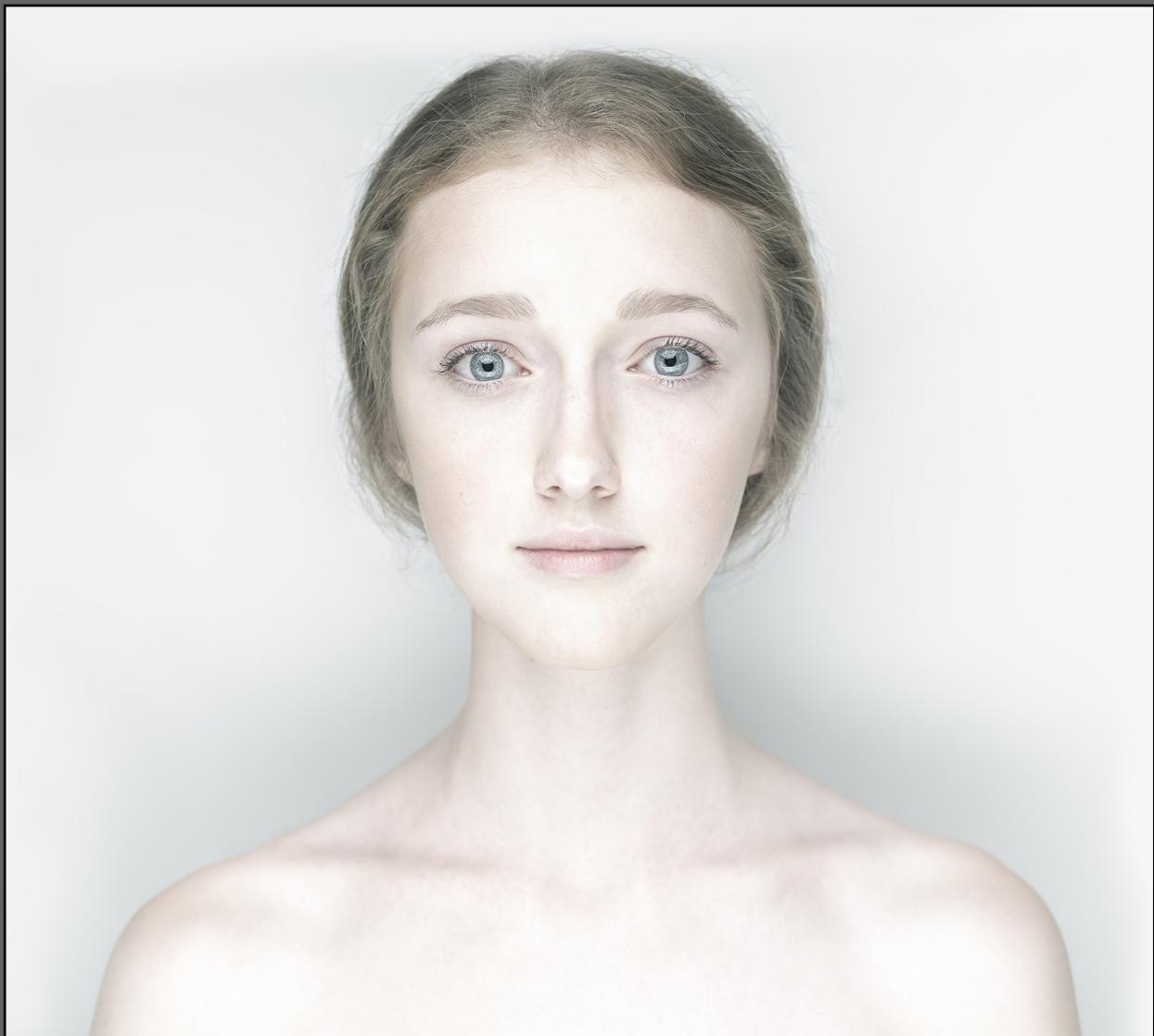


Photo: Dmitry Ageev



Shortcut

Show/Hide

⌃ + ⌘ + V

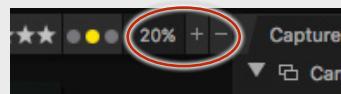
↑ + ⌄ + V

Tip

When browsing the Thumbnail Browser and the Viewer together, press **⌃ + ⌘ + N / ⌄ + N** to temporarily hide the thumbnails. Toggle back.

Tip

The top right hand corner of the Viewer displays the current magnification of the image.



Tip

Basic capture information can be read off the viewer bar.



Tip

Hand Tool



Hold down the spacebar to activate the hand tool when zoomed in to drag Viewer contents around.

Viewer

Layout

At the default setting, the Viewer is located in the middle of the screen above the Thumbnail Browser and automatically displays any selected thumbnail. The Viewer is headed by a bar naming the selected image. It also displays the approval level, size in percent, basic exposure information and any badges assigned. It also contains a plus and a minus icon for zoom in/zoom out changes. A Viewer Toolbar runs along the bottom of the Viewer Area. Both the bar and the Viewer Toolbar follow the Viewer in any orientation and size.

To change the layout:

- Drag the divider (between **Viewer** and **Thumbnail Browser**) up or down (in landscape layout).
- Drag the divider (between **Viewer** and **Thumbnail Browser**) to the left or right (in portrait layout).
- Choose **Toolbar > Layout**. Changes orientation to portrait to the right of the **Thumbnail Browser**.
- Choose **Toolbar > Show**. Hides or shows **Viewer**, amongst others.
- Choose **Menu > Window > Viewer in Separate Window** (**⌃ + ⌄ + ⌘ + V**) (**Ctrl + Alt + ↑ + V**). Creates a separate Viewer (for dual screen use, for example)
- Choose **Menu > Window > Full Screen Viewer** (**↑ + ⌘ + F**) (**Ctrl + ↑ + F**). Fills screen with **Viewer** image and **Viewer Toolbar** only.
- Choose **Menu > Window > Standard** (**⌃ + ⌘ + 1**) (**Ctrl + ↑ + 1**). Produces default layout.
- Choose **Menu > Window > Viewer** (**⌃ + ⌘ + 3**) (**Ctrl + ↑ + 3**). Hides **File Browser**, **Tools** and the **Thumbnail Browser**.

Resizing image in Viewer

To change the size:

- Activate the Zoom tool in the **Viewer Toolbar**. Click on image in **Viewer** for 100% view (toggle function to revert).
- Hold down **Cmd + +/-** / **Ctrl + +/-** to enlarge/reduce the image.
- Press the plus/minus zoom symbols in the top right hand corner of the **Viewer**.
- Fit to window. **Menu > View > Zoom to Fit** (**⌘ + 0**) (**Ctrl + 0**)
- Zoom to 100%. **Menu > View > Zoom to 100%** (**⌃ + ⌘ + 0**) (**Ctrl + Alt + 0**)

Resizing Viewer

- Move dividers to increase or decrease Viewer area.
- Hide the **File Browser** and/or **Tools** and/or the **Thumbnail Browser** to free up space. Image enlarges automatically to fill area.



VIEWER TOOLBAR

Either click on the icons or use the shortcuts to access the following tools.
Both methods have a toggle function.

Compare View *w / w*



Allows comparison of two images shown side-by-side in the Viewer. Images from different folders can be compared.

Select a thumbnail to be first image in the Viewer. Click on the Compare view tool (or press 'w'), then select desired comparison thumbnail. Image info as well as rating/approval levels are displayed for both images. Press the 'S' key to switch images. Option click a thumbnail to be new first image. Click on tool or press 'w' function to toggle back to standard view. Press the 'A/B' button at the top of the viewer bar to switch between portrait and landscape formats.

Proof View *o / o*



Toggles the Viewer between normal mode and Proof mode where you can show the image against a different background color and with an extra margin.

Crop tool *c / c*



Drag-activated crop tool with placement/centering grid. Can be customized in the Crop & Orientation tool in the Tool Area to conform with certain aspect ratios. Crop dimensions appear immediately beneath cropped area while mouse is pressed. Select another tool to view without crop and select Crop again to view with crop. Click outside of crop to remove it or Undo Change Crop ($\text{⌘} + \text{Z}$) ($\text{Ctrl} + \text{Z}$) to revert. Press a number (1-9) on the keyboard while activating the Crop tool to determine the number of (temporary) lines in the grid. Crops can also be viewed on thumbnails (see Thumbnail Browser/Viewing).

Straighten tool *r / r*



Provides a straightening function. Place the cross cursor on any chosen point on the image, mouse down and trace a landscape or portrait line (real or imaginary) which you want to become a perpendicular landscape or portrait. Release the mouse button and the image automatically aligns to the line orientation you chose. With the Crop & Orientation tool open, you can additionally read off the number of degrees the image has been rotated.

See also Crop & Orientation under Tools for refinements.

Neutralization tool *n / n*



Allows a rapid neutral color balance to be made. Position the tool over an area judged to be neutral and click again. Look at the RGB readout (bottom right of frame) for more information.

Zoom tool $z/z-$



in $\text{⌘} + +$, out $\text{⌘} + -$, to fit $\text{⌘} + 0$, to 100% $\text{⌘} + \text{⌥} + 0$

in $\text{Ctrl} + +$, out $\text{Ctrl} + -$, to fit $\text{Ctrl} + 0$, to 100% $\text{Ctrl} + \text{Alt} + 0$

Position the tool over the area you want to zoom in on. Clicking will produce a 100% view. Clicking again will revert the image to the original size. This percentage can be read off the bar just above the **Viewer**, in the far right corner.

Hand tool h/h



Used to move the image in the **Viewer** when zoomed in. Hold down the spacebar for temporary use.

Color readout tool i/i



Places color-channel value-markers for specific points on image in **Viewer**.

To move them for comparison, hover the color picker cursor over the marker (the tool active must be active). The tool cursor reverts to a regular arrow cursor for dragging. All markers can be deleted by backspace/delete with the tool active. Different read-out options (RGB / Output / Lab) are available via **Color Info**, found on the far right of the **Viewer Toolbar** (see following page).

Shadow warning $\text{⌃} + \text{↑} + \text{⌘} + s / \text{Ctrl} + d$

for options: $\text{^} + \text{⌘} + w / \text{Ctrl} + w$

Marks areas of the image that are rated as underexposed. These areas appear as light magenta (default) and cover the affected areas of image. Select **Menu > View > Warning Options** (or use shortcuts) to change threshold settings and the warning color. Alternatively, Ctrl / Ctrl clicking the icon and then the pop up menu that appears will directly access the **Warning Options** dialog.

Highlight warning $\text{^} + \text{⌘} + h / \text{Ctrl} + h$

for options: $\text{^} + \text{⌘} + w / \text{Ctrl} + w$

Marks areas of the image that are rated as overexposed. These areas appear as light cyan (default) and cover the affected areas of image. Select **Menu > View > Warning Options** (or use shortcuts) to change threshold settings and the warning color. Alternatively, Ctrl / Ctrl clicking the icon and then the pop up menu that appears will directly access the **Warning Options** dialog.

Grid $\text{⌃} + \text{⌘} + g / \text{Ctrl} + g$

for options: $\text{^} + \text{⌘} + g / \text{Ctrl} + \text{↑} + g$

Places a grid over the **Viewer** image to aid composition, etc. Select **Menu > View > Grid Options** to change the number of lines and their color. Ctrl / Ctrl clicking the icon and then the pop up menu that appears will directly access the **Grid Options** dialog. Press Alt / Alt to reposition the grid over the image with the mouse.



Overlay +



for options: + / + to drag: + mouse/ + mouse

Allows another image to be superimposed. Used primarily in fixed layout composition, montage, etc. Uses JPEG, TIFF, PNG, PSD, PDF and GIF formats for the overlaid file. Choose Menu > View > Overlay Options to access opacity and scale options as well as a prompt to select the overlay file, which is automatically placed after selection. Alternatively, / clicking the icon and then the pop up menu that appears will directly access the Overlay Options dialog. Files can also be browsed in the Finder or placed by drag and drop. Overlaid images can be moved by Option (/ dragging with the mouse.

Previous image



Displays previous image in the **Thumbnail Browser**, replacing the current image in the **Viewer**.

Next image

Displays next image in the **Thumbnail Browser**, replacing the current image in the **Viewer**.

Switch compare images /



Switches the position of the two images in **Compare View** in the **Viewer** from left to right and vice versa.

Color Info

Provides an input RGB, Output or Lab readout of the area beneath the cursor when positioned on an image in the **Viewer**.



Tip

Full screen view fills the whole Viewer area. (Menu is hidden) but retains the Viewer Toolbar for continued checking and navigation control.

Menu > Window > Full Screen View.

+ + F

+ Ctrl + F

Tip

You can change the Approval level of the selected image in the Thumbnail Folder and in the Viewer by simply pressing 1, 2 or 3 for green, yellow, or red. Clicking the green-yellow-red icon in the Viewer will have the same effect.

Tip

Create two Viewer images side by side to compare sharpness settings, for example.

Select an image in the Thumbnail Browser. Choose Compare view in the Viewer Toolbar then choose Menu > View > Compare Image.

Any adjustments made now affect the left hand image only.

Tip

Mac /right click the Warning, Grid and Overlay tools on the Viewer Toolbar to access options.

Win Right click the Viewer Toolbar to reveal the View list from the Menu to access options.

Tip

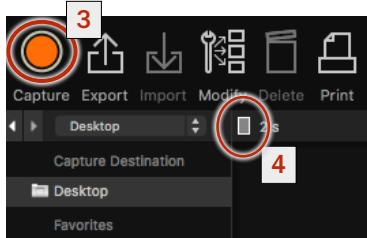
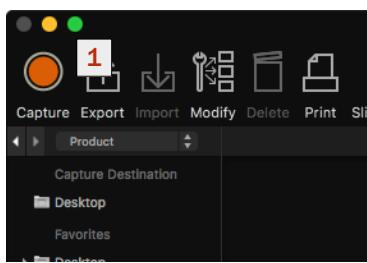
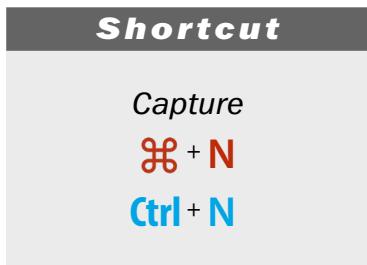
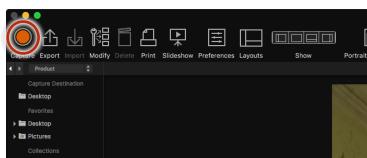
Thumbnail badges assigned to files also appear on the left of Viewer header bar as a reminder when the Thumbnail Browser is hidden.

Tethered Capture

Allows the control of Hasselblad digital camera products when connected by USB or FireWire to a computer.



Photo: Bryn Griffiths



Tethered capture

Connection

Connect your Hasselblad camera to a computer via a USB or FireWire cable. An icon will appear under Devices **1** in the **File Browser** and a heading in the Camera tool **2** affirms that connection has been made. Open the **Job Info** tool and make the appropriate settings. Regarding storage space, you can check the amount left by selecting the **Capture Destination** folder in the Finder and reading the figure displayed to the right in the **Thumbnails Browser** bar.

Capture

See under Tools for description of Camera tool. According to model/configuration, the camera can be triggered either by:

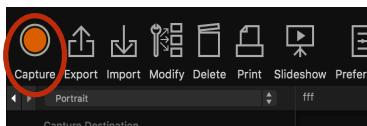
- the Capture icon in the Toolbar **3** (H models, motorized V models and V models with winder only).
- the shortcut – **⌘ + n / Ctrl + n**
- the camera itself.

After exposure, the capture is stored directly in the folder that you have designated to be the Capture Destination folder (default: Phocus Captures) (see File Browser section about how to create a new capture destination folder). The name of this selected folder appears at the top of the File Browser as a reminder.

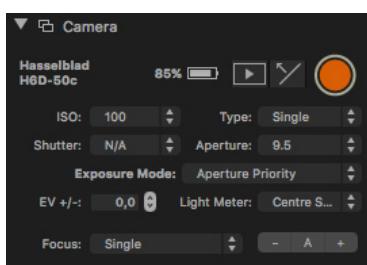
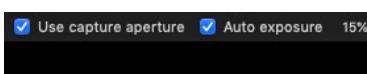
Immediately after exposure, the capture preview appears in the Viewer and in the Thumbnail Browser. An icon appears **4** on the left hand side of the bar just above the Viewer to indicate progress. It disappears when the capture has been stored.

Points to note

- Captures are stored directly in the chosen capture destination folder. You should therefore always check beforehand that you have selected the correct folder (see Capture Destination section for more information).
- All tethered captures are stored as lossless compressed 3F files in the capture destination folder.
- Using the Camera tool you can accurately control the camera setup. There are a variety of controls available under this tool, depending on the camera model. These include, apart from shutter-speed, aperture etc., even special focusing options allowing for remote focus increments using the “-” or “+” buttons and modifier keys to control focus and depth of field.
- The available set of active controls in the Camera tool will differ according to the digital camera model. H- and X-system cameras allow more control than V-system cameras due to their greater integration and overall more advanced data-controlled capabilities.
- The Mirror Up button on the Camera tool only functions with H system cameras.



⌘+L
Ctrl+L



Live Video

H, X and V-system cameras can utilize the **Live Video** function, though the H- and X system offers a greater opportunity for automation. This function is intended for tethered operation in studio set-up environments for product and similar non-moving subjects where careful compositional placing in conjunction with layout sketches, etc is required. It provides a continuously updated image in the **Viewer** which can be zoomed in and checked for focus. An audio and a visual aid are also available to help you make very accurate focus settings.

When using a CMOS based camera, there are two checkboxes at the top of the Viewer window:

Use capture aperture: When checked, the aperture will be what was set before entering Live View. When unchecked the Viewer will always start with full open aperture. For CMOS based H- and X-system cameras only.

Auto exposure: When checked, this will provide a standard exposure in the Viewer, regardless of camera setting.

1. Tether the camera to the computer and make sure the camera is switched on.
2. Open the Camera tool (default: under the Capture tab) and make the desired setting adjustments.

V / CFV ONLY: The lens must remain open for the duration of the session. Use the appropriate method according to the equipment used. Make a temporary aperture setting.

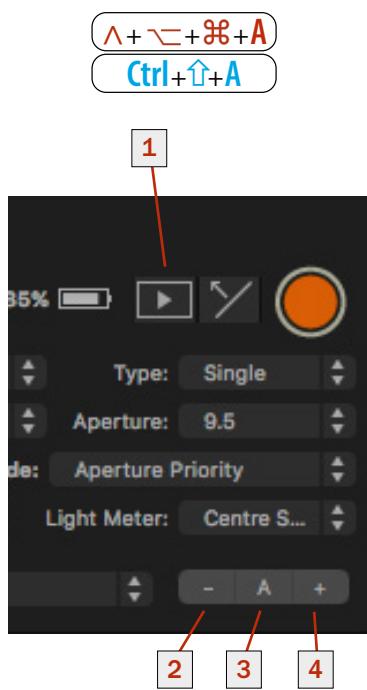
3. The function is activated either by:

- Pressing the Live Video button in the Camera tool
- Choosing **Menu > View > Live Video**
- **⌘ + L / Ctrl+L**

4. The Viewer now shows the Live Video image. For CMOS based cameras, the image is in color and for CCD based it is in black and white.
5. Grid lines and /or overlay can be introduced to check for compositional positioning etc.
6. A focus check can also be made as described on the following page.

Tip

In Preferences you can select a favored layout that is activated automatically when a camera is connected.



Focus checking

By using the **Zoom tool** in the **Viewer Toolbar**, you can obtain a close up of the section of the image you want to check for focus. The **Viewer** image changes format and displays a view beneath. This is the focus view which plots the accuracy of the focus setting displaying it in the form of a continually updated graph.

With tethered H- or X-system cameras, make an initial auto focus, either directly on the camera or by pressing 'A' **3** on the **Camera** tool. Press the **Live Video** button **1** to activate.

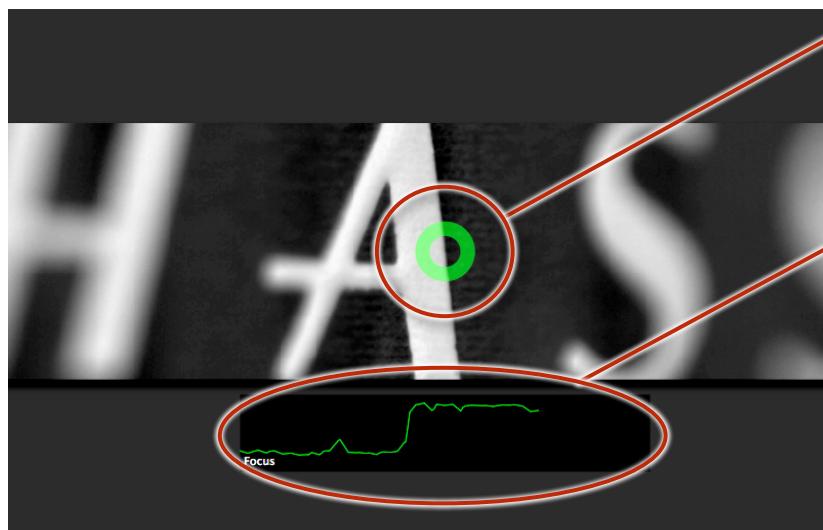
- Click on the '-' **2** or '+' **4** buttons on the tool (not + or - on the keyboard) to alter the focus.
- Hold down ⌘ / **Ctrl** and click on the '-' or '+' buttons for finer focus adjustments.
- Hold down **Alt** / **Alt** and click on the '-' or '+' buttons for larger focus adjustments.

Press ⌘(Ctrl)+⌃+⌘+a / **Ctrl**+⇧+a to activate the **Audio Feedback** function that signals when the focus setting is at its optimum setting.

The goal is to obtain the highest reading on the graph for that particular area you have selected.

With V system / CFV combinations, focus must be altered manually on the lens.

Focus checking in Live Video mode



Select the **Zoom** tool and click on the area you want to check to produce a close-up.

Changing the focus setting produces an automatically updating graph. A higher reading indicates a sharper image. An audio signal is also available.

RAW Video

The H6D-50c and H6D-100c cameras are capable of producing RAW video in a proprietary format, 3FV.



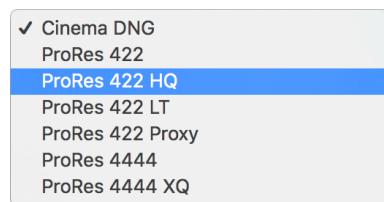
Photo: Ove Bengtsson

RAW Video



Viewing Video

When you click on the 3FV thumbnail and move the cursor to the Viewer, you will get a **Transport Tool**. This makes it possible to preview and trim start and end points of the video file before exporting.

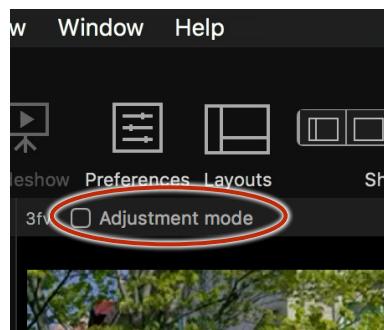


Export Raw Video

RAW Video in **3FV** format can be exported directly from the memory card without first importing. Just click the video thumbnail and select **Export**.

In addition to **CinemaDNG** it is also possible to export raw video as **ProRes** (requires Phocus version 3.2 or later). Unlike **CinemaDNG** which is a raw format - **ProRes** exports will actually reflect adjustments made in Phocus and also take advantage of lens corrections and the **HNCS** color handling. In other words - the image processing of each frame of a **ProRes** export is basically the same that you would get when exporting still images.

When exporting you will find factory output presets for both **CinemaDNG** and the 6 different **ProRes** variants. It should be noted that the factory **ProRes** presets all convert to the **Hasselblad Rec.709** color space. Technically this will ensure a perfect match when playing back in applications like **QuickTime Player** or **Final Cut Pro**. In reality this output profile does not follow the exact standard when it comes to the transfer curve, but for legacy reasons it's what is expected in these applications. If you need to generate **Rec.709** output that matches the standard exactly you can create your own output presets and select to use the **Rec. ITU-R BT.709-5** profile that is part of a default Mac OS installation.



Adjusting Video

When viewing 3FV files you will now find an **Adjustment Mode** check-box in the upper left corner. In order to view the effect of adjustments on raw video you will need to enable this adjustment mode. When not in adjustment mode you will just see the preview video that the camera has embedded in the 3FV. This non-adjustment mode can still be useful as it will provide faster navigation and playback and specifically if you only intent to export **CinemaDNG** there will be no reason to enable adjustment mode. Note that the mode can also be switched via the command in the View menu and its associated keyboard short-cut **Cmd-Alt-A** (Mac) **Ctrl-Alt-A** (PC)

You can use most tools to adjust the video. One exception is Noise Reduction that cannot be used. Note that some adjustments will prolong the exporting time.

Also note that adjustment settings are global for the full clip no matter which frame was shown when the adjustment was edited.

Trimming Video



When the **Transport Tool** is shown it is possible to trim the extent of the video sequence. Just like all other adjustments this is non destructive, meaning that it's just a part of the adjustment setting. The UI is slightly different based on the mode - in adjustment mode there's a button labeled **Trim 1**, in non adjustment mode you will find the **Trim** command by clicking the tool icon **2**. Clicking **Trim** will reveal the **Trim Tool 3** where you can move start and end points to shorten your video. Finally click **Trim** to save the adjustment.



Tool Area

The Tool Area is on the right hand side of the screen. It consists of four individual collections of tools called tabs. Each tab can be customized for content. The area is always in the same placing in the layout but can be hidden to increase working space.



Photo: Rafael Rojas

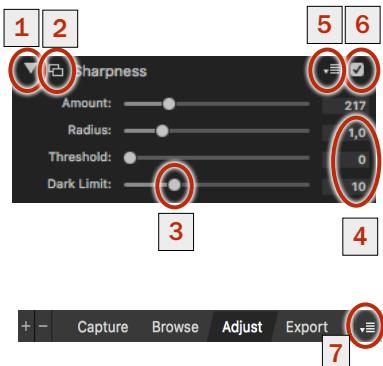


Shortcut

Show/Hide

⊖ + ⌘ + T

↑ + ⌃ + T



Tip

Select **Toolbar > Layouts > Edit** to save specific variations of arrangements, tool visibility, floating panels, active tool tab, etc.

These sets can be copied, imported and exported.

Tool Area

Tools are grouped under four tabs for convenience; **Capture**, **Browse**, **Adjust** and **Export**. This grouping is customizable and so the default setting should only be seen as a starting point for your own workflow preferences. Any combination of tools, including duplicates, can be grouped under any tab. After selection, tools are opened by a disclosure triangle **1** to reveal slider control **3** and numerical **4** options. A check-box **5** applies setting changes. Some tools have additional options accessed by the menu icon **6** on the header bar. Clicking the float button **2** will close the tool on the list and create a floating panel of the tool in the viewer area instead.

Tabs

There are three ways to select a tab and bring it to the front:

- Click on the tab name itself.
- Choose **Menu > Window > Tool Set > Capture /Browse / Adjust / Export**.
- Use the keyboard shortcuts (see illustrations).

Click on the right hand menu icon on the Tool header to see the menu listing the tools available. Checking an item will add that tool to the selected tab or you can select Load Default Tool Set.

Alt / **Ctrl** clicking a disclosure triangle will either collapse all tools in a tab or expand all to fill the panel.

Tools

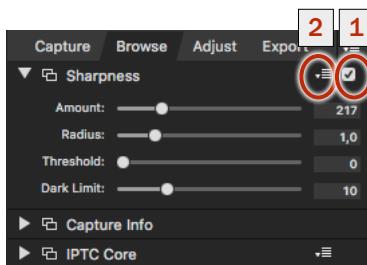
To add a tool to a tab, click on the right hand menu icon on the **Tool** header **7** to reveal the tool list and then click on the required tool.

To remove tools from individual tabs, drag and drop the tool to any area outside of the list. Each tool can be repositioned on a tab list by drag and drop and each tool can be floated to anywhere on the screen.

Tool settings

Tools are opened by clicking the main disclosure triangle on each individual **Tool** header. This allows setting changes, provides information etc according to the tool. Some tools use slider controls together with numerical input.

Capture	Browse	Adjust	Export
⌘ + 1 Ctrl + 1	⌘ + 2 Ctrl + 2	⌘ + 3 Ctrl + 3	⌘ + 4 Ctrl + 4
<ul style="list-style-type: none"> Capture Browser Adjust Export ⋮ <ul style="list-style-type: none"> ↳ Camera ↳ Job Info ↳ Exposure ↳ White Balance ↳ Sharpness 	<ul style="list-style-type: none"> Capture Browse Adjust Export ⋮ <ul style="list-style-type: none"> ↳ Capture Info ↳ IPTC Core ↳ IPTC Keywords ↳ Navigator & Zoom ↳ Histogram 	<ul style="list-style-type: none"> Capture Browse Adjust Export ⋮ <ul style="list-style-type: none"> ↳ Histogram ↳ Exposure ↳ White Balance ↳ Sharpness ↳ Curves ↳ Color Correction ↳ Grayscale ↳ Noise Filter ↳ Dust Removal ↳ Lens Corrections ↳ Scene Calibration ↳ Crop & Orientation ↳ Output Preview ↳ Adjustments Browser ↳ Adjustment Layers 	<ul style="list-style-type: none"> Capture Browse Adjust Export ⋮ <ul style="list-style-type: none"> ↳ Capture Info ↳ IPTC Core ↳ Output Preview ↳ Queue
Example of tab contents			



You can either key in a specific value or click in the view and use the 'up' and 'down' keys to raise or lower the values.

Tool Presets

Many of the tools in the Tool Area include the option for creating presets. These are simply shortcuts to saved settings (relevant to that particular tool) that you want to apply to other files.

To create a preset, proceed as follows:

1. Make sure the box **1** on the Tool header is checked to preview the adjustments and settings you make.
2. Click the smaller menu icon **2** on the right hand side of the Tool header to access the options **3**.
3. Click on Create Preset **4** to reveal a dialog where you name the preset. Press the Create button to save it. This preset will now appear in the Preset Menu.
4. Files in the Viewer can now be adjusted to precisely conform with the settings you made for the preset just made, or to predefined presets, by opening the tool again and clicking on the preset name.

See the following pages for a general description of presets in Phocus!

In this manual it is assumed that you have a working knowledge of how to use most of the standard image editing tools found in most graphics editing applications.

The tool descriptions here are therefore basic and show how they appear in Phocus. There are many articles in books, magazines and on the Internet as well as videos that discuss and explain in great detail the specific aspects of image editing tools.

Tip

When making changes in a tool, you can use the 'up' and 'down' arrows on the numerical section of the keyboard instead of manual numerical input or using the sliders.

Tip

*You can simultaneously close all tools in a tab by **Alt / Ctrl** clicking on a collapse triangle on any tool. Similarly, you can expand the uppermost tools in a tab by **Alt / Ctrl** clicking on a triangle on any tool, to fill the tool area.*

Tip

*Press **⌘ + Z / Ctrl + Z** after any changes made in Tools to undo the change and revert back one step at a time.*

*Press **⇧ + ⌘ + Z / Ctrl + Y** to reapply the same changes again, one step at a time.*

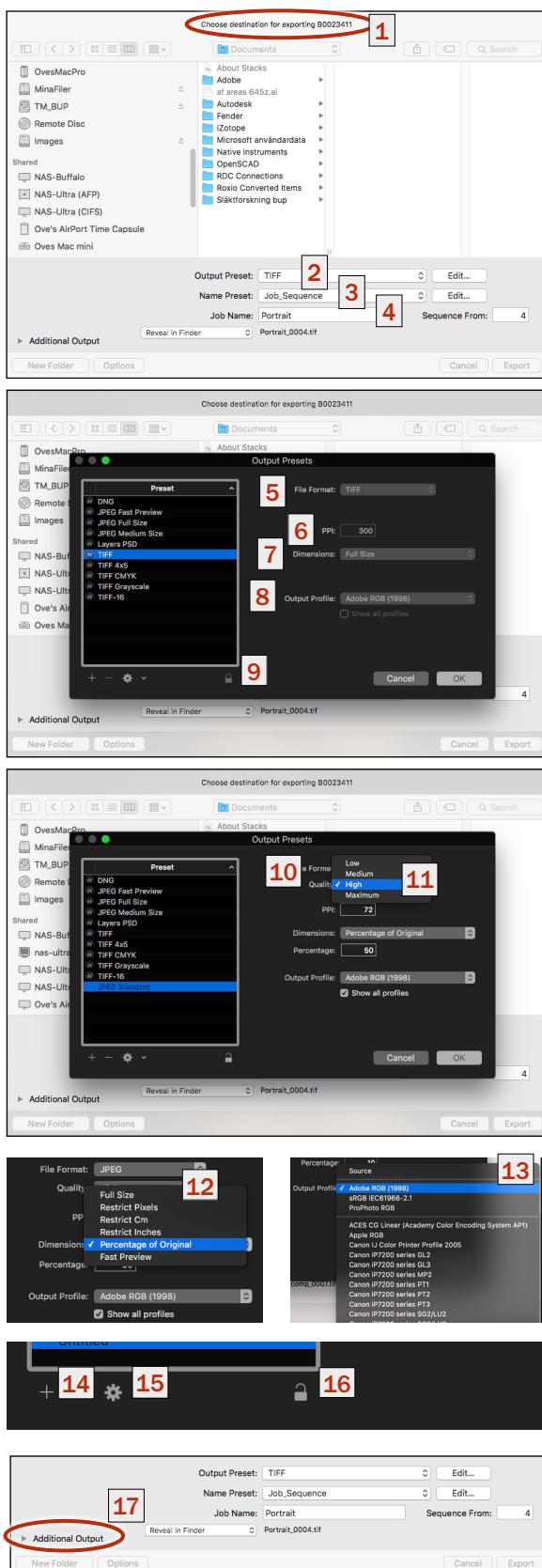
Tip

Any tab can contain any or all tools.

Tip

In preferences you can select a specific layout to be triggered when holding down the option key and clicking a specific tab.

Presets - general



Presets are essentially shortcuts to default or user created and stored settings. They save time and effort as well as provide security regarding various automated tasks.

In Phocus, presets occur as an integral part of a number of different actions. Some presets can also be accessed from different locations. For example, in **Output Preview** in Tools, you might choose TIFF as your preferred format in the **Preset** menu. When exporting, the options not only displays this choice in the **Output Preset** menu but also allows you to change it again.

A change made here, to Layers PSD for instance, is immediately reflected back in the **Output Preview** tool. In other words, a preset is an independent feature that can be accessed, changed and checked at various locations. References to it are continually and automatically updated.

Example - Output presets

When exporting an image, the **Export** window displays a list of options, the first being destination **1** for the file, chosen in the conventional manner.

The lower part of the window lists: **Output Preset** **2**, **Name Preset** **3**, **Job Name** **4** etc. **Output Preset** and **Name Preset** have Edit buttons.

Clicking on the Edit button for **Output Preset** will display an options panel: **File format** **5**, **PPI** **6**, **Dimensions** **7** and **Output profile** **8**.

In this example, the **File Format** shows TIFF as the choice, which would have been shown in the **Output Preview** tool. (The choices are often displayed dimmed because the presets are locked. Clicking on the unlock symbol **9** (or the plus symbol at bottom left of list to create a new preset) allows access to the menus).

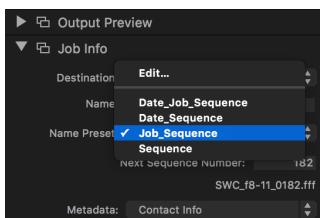
If JPEG is now selected on the list, JPEG is displayed in the **File Format** menu **10**. Clicking on the menu reveals further choices **11**.

Clicking on the menus will reveal lists of choices available, for example **Dimensions** **12** and **Output Profile** **13**.

The plus and minus signs **14** allow the addition and deletion of presets from the list. Presets can also be duplicated, exported and imported **15**. You can also lock all settings to prevent inadvertent deletion **16**.

Additional Output **17**, is also an option available in the Export window. Extra preset choices are revealed here and are selected in the same manner as above.

Presets - continued



Name presets

Name presets are dealt with in the same manner. Similarly, **Name Preset** is accessible from more than one location; when exporting (see section above) or from the **Job Info** tool (**File Name > Edit**).

In this example, **Job Name** could be removed by selecting it in **Template 1** and deleting it (backspace).

Selecting **Date Format 2** would also allow a **Full Date** 3 and **Medium Time** 4 for instance, chosen from the menu, to appear instead, etc.

Again, there are a great number of choices here to cover most needs.

IPTC presets

IPTC Core presets use the same concepts in the options.

With the **IPTC Core** open (**IPTC Core tool > Create Preset**), presets can be selected 5, created 6 and deleted 7 to include or exclude the desired information checked on the list.

See further in this chapter for a full description of **IPTC Core** and **IPTC Keyword** tools.

Tool presets

Tool presets are more straightforward in creation and use. Please see previous section in this chapter for details.

General

The extensive range of settings on offer produces a very broad choice of combinations to meet professional demand. You are encouraged to investigate this aspect of Phocus to see how it can be customized to suit your particular needs.

Properly implemented, presets can make a considerable positive impact on workflow, reducing time demands and errors.

Tool List

The image shows five screenshots of the software interface:

- Adjustments Browser:** A panel showing four tabs: Factory, User, Embedded, and Current. Under Current, there are three categories: Standard, Nature, and Portrait.
- Adjustment Layers:** A panel showing two adjustment layers. Layer 1 has EV set to 0,46. Layer 2 has EV set to 0,28, Clarity set to 177, and Saturation set to -13.
- Bron Control:** A panel titled "Bron Control" showing "Modeling light" settings. It includes a power slider set to 5.3, a group selection dropdown (All), and a list of lamps with their respective power levels: Siros 800 L (5.3), Siros 800 L (5.3), Siros 400 S (4.9), Siros 400 L (4.9), Siros 800 S (4.9), Siros 800 S (4.4), and Siros 800 L (4.4).
- Camera:** A panel titled "Camera" showing settings for a Hasselblad H6D-50c. It includes ISO (400), Shutter (1/50), Exposure Mode (Manual), EV +/- (0,0), Light Meter (Centre W), and Focus (Continuous).
- Capture Info:** A panel titled "Capture Info" listing camera metadata for a Hasselblad H6D-50c. The data includes Device: Hasselblad H6D-50c, Created: 10 February 2016 at 12:32:39, Dimensions: 8272x6200, Lens: HC 100, Converter: Extention: HTS: ISO: 100, Shutter: 1/320, Aperture: f/11, Light Meter: Centre W, Exposure Mode: Manual, Focus Mode: Manual, Serial Number: SQ34000413, and GPS Coordinate:.

Adjustments Browser

See full explanation in the **Adjustments** chapter.

Adjustment layers

Using the **Adjustment Layers** tool you can add a number of adjustment layers for selective adjustments. For such a layer you can control which parts of the image are affected using a combination of these tools:

- *Brush*
- *Gradient*
- *Radial Gradient*.

See full explanation in the **Adjustment Layers** chapter on page 80.

Broncolor Flash Control

With this tool, it is possible to control settings on Broncolor flashes with a Wi-Fi interface. Settings that can be controlled are:

- *Output Power*
- *Modelling light on/off*
- *Sound on/off*

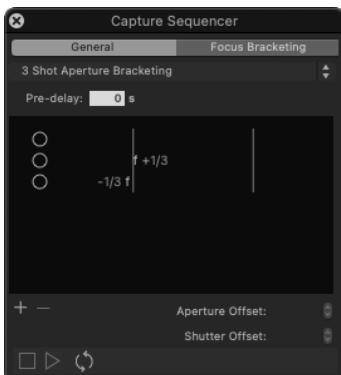
For a full description, please see chapter **Broncolor Flash Control** on page 87.

Camera

Reflects the settings from a tethered camera, according to model. An H- or X-system model will provide more information—focus mode, exposure mode, for example—than a V-system model due to its greater digital capabilities and integration. See description of **Live Video / Tethered Capture** for full details.

Capture Info

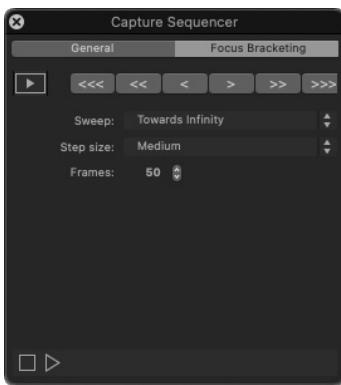
Lists the camera metadata recorded at the time of capture and is dependent on camera model and equipment used. Metadata is an integral part of each individual image file. A Hasselblad H- or X-system camera model will provide more information than a V-system model due to its greater digital capabilities and integration.



Capture Sequencer

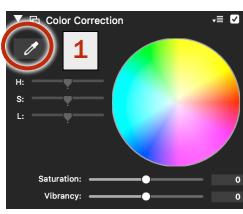
Enables various kind of tethered capture automation such as: interval capture, self timer, exposure bracketing and focus bracketing . There are a number of factory presets but you can set up custom sequences and save them as additional user presets.

A sequence consists of a number of capture steps. For each step you can define aperture and/or shutter offsets relative to the exposure settings set when the sequence is started. Using the cycle button you can set up a number of repeats of all steps and indicate a timing interval for the repeats. It is also possible to set up a pre-delay thereby delaying the start of the sequence after pressing play.



Capture Sequencer – Focus Bracketing

Enables tethered control of Focus Bracketing for both H and X System cameras. For details, please see page 88.



Color Correction

For selective and global color correction. The color picker can be used to isolate a tone and then modify it either by using the **Hue**, **Saturation** and **Lightness** sliders or by the color wheel tool.

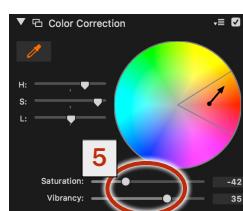
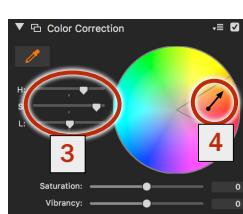
Global changes can be made using the **Saturation** and **Vibrancy** sliders.

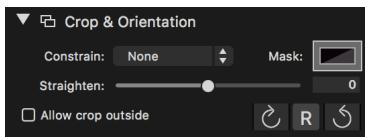
To make specific tonal changes:

1. Select the color picker **1**. (Keep Shift pressed down for multiple samples)
2. Place the picker on the desired tone in the image in **Viewer**. A corresponding point **2** will appear on the color wheel.
3. Hue, Saturation and Lightness can be adjusted by:
 - a) moving the sliders **3**, or,
 - b) using the arrow keys on the keyboard, or,
 - c) clicking on the point on the wheel and dragging it to form an arrow **4**, which can be extended, shortened and rotated to alter the settings. You can also increase or decrease the coverage of the segment by dragging the boundary markers as well as rotating the segment within the color circle.
4. Undo (**⌘ + Z / Ctrl + Z** or backspace) reverts all changes one step at a time, while the tab key changes the segment choice if multiple selections were made.

To make global changes:

Saturation & Vibrancy: Non-selective (global) saturation and vibrancy changes are made by the slider controls **5**. **Saturation** affects all of the image whereas **Vibrancy** is more constrained and protects areas already saturated (useful for skin tones, for example).





Crop & Orientation

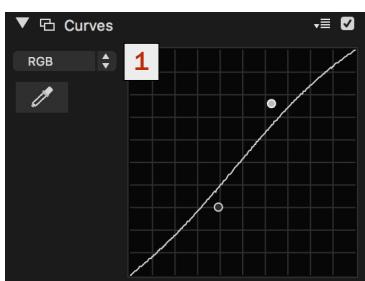
A list of constraints is available (default: **None**) to set the format as well as orientation of the **Crop** tool. Clicking on the **Mask** icon will access a window where both color and opacity of the mask can be selected.

The **Straighten** function has quick 90° buttons as well as a slider that allows a finer adjustment of +20° to -20° shift in orientation.

The **Straighten** function is also accessible by way of the **Viewer Toolbar**. Clicking on the **Straighten** icon will convert the arrow cursor into a cross. Place this cross on any chosen point on the image and trace a landscape or portrait line (real or imaginary) which you want to become a perpendicular landscape or portrait. The image automatically aligns to the line orientation you chose. With the **Crop & Orientation** tool open, you can additionally read off the number of degrees the image has been rotated.

To make larger adjustments, press on one of the rotation arrow icons (in the **Crop & Orientation** tool) to make a 90° adjustment, using the respective icon for clockwise or anti-clockwise orientation. The '**R**' icon illustrates the current orientation and changes accordingly (click to toggle). Use the slider to make additional fine adjustments. You can also reposition the cropped area by the arrow keys

When using rotation or keystone correction there may be situations where it's useful to make a crop that extends outside the transformed image. In this situation you will need to check the **Allow crop outside** checkbox as otherwise the crop will always be restricted to fit inside the image.



Curves

Curve adjustments can be made as a combined **RGB** setting or by selected individual channels. Click in the list **1** to select any of the options. Choosing **Luma** instead of **RGB** will have much less impact on color and saturation and will basically only affect luminosity.

To adjust the curve, click and drag on the graph. Each time you click on a new point, you will create a gravity point, which will pull the curve toward itself. You do not need to click on the actual curve. This system makes sure that the curve is always smooth. Ensure to check the check-box on the Tool header bar so that the preview image will update to reflect the changes.

Click the eyedropper icon and mouse over the areas on the **Viewer** image that you want to sample. The value is automatically represented on the curve. Clicking on the sampled area will fix a point on the graph. Revert by pressing delete or backspace. Options contain presets for consistent curve settings within a batch.

Tip

CURVES

*To move a gravity point, either drag it with the mouse or select it and then use the arrow keys. Hold down the **Ctrl** / **⬆** key to move the point in larger increments.*

To remove gravity points from a curve, press the Delete or Backspace key.

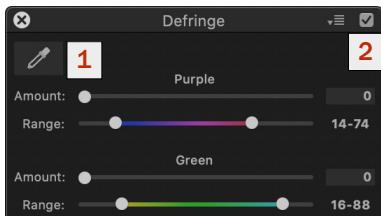
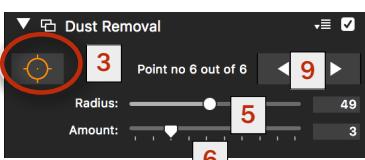


Image with axial
chromatic aber-
ration

Corrected



Dust spots marked by the Dust
Removal tool.

Defringe

The **Defringe** tool is designed to quickly remove purple and green fringes in the image that is not handled by the automatic lens corrections. This could be a result if you are using 3rd party lenses or if the images has axial chromatic aberration where unsharp areas in front of and behind the focused area can get purple and green fringes.

Zoom in to 200 or 400% to see the fringes clearly. Then use the **Color Picker** 1 to select the actual color of the fringe. In some cases more precise adjustment of the hue range and amount can be needed in order to prevent false detections. If the correction adds unwanted effects to other areas of the image, you can use the **Defringe** tool selectively using **Adjustment Layers** as described on page 80.

The two sample images to the left, show the effect when the Defringe tool is used to correct for axial chromatic aberration.

Make sure the box 2 is checked for the corrections to be applied.

Dust Removal *d / d*

The **Dust Removal** tool is designed to quickly remove spots caused by dust particles on the sensor. This tool can be used to clean up images either individually or, in combination with the **Modify** tool, for batch processing.

Activate the tool by clicking 3 or by pressing "D" on the keyboard. Locate and then mark the spot(s). The position of the dust tool circle 4 can be altered by dragging in the center of the marker circle. Radius can be altered either by the **Radius** slider 5, by dragging when placing the marker or by dragging the circle edge after positioning 6. Amount is adjusted by a slider 7 or by manually typing in a value in the text tool box.

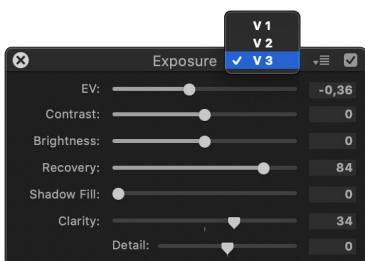
You can also draw selections 7 by holding down *Alt* / *Ctrl* for irregular marks. Multiple edits can be made. These can be individually selected by the arrows 9 in the tool and then individually adjusted (press *Delete* to remove a spot). You can remove dust spots from a complete batch of images by selecting your images, clicking the tool disclosure icon and selecting **Modify Dust Removal of Selected Files** or by using **Modify** found in the **Toolbar**. **Dust Removal** appears as an item on the **Modify** dialog check list.

Exposure

EV, contrast, brightness, highlight recovery, shadow fill and clarity can be set by sliders or value fields.

Use the popup to select algorithm **v1**, **v2** or **v3**. **V2** includes improved recovery, shadow fill and clarity algorithms. The new improved **v3** also includes improved contrast and brightness algorithms. **V3** is default for new images and old images without recovery, shadow fill or clarity adjustments.

Very briefly, highlight recovery reclaims data from the raw file to repair burnt out highlights, shadow fill improves the quality of shadow areas while clarity improves the contrast of mid-tones to give them 'punch'. For clarity adjustments, a new Detail slider has been added to control how much details in the image are affected by the clarity adjustment.



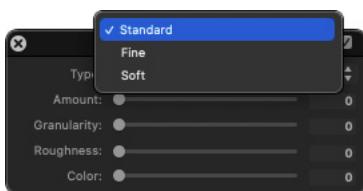
Film Grain



The film grain tool will enable a highly flexible simulation of film grain. You will need to manually add the tool from the tool popup menu top right.

There are 3 types available: **Standard**, **Fine** and **Soft**. For each you can change 4 parameters which are: **amount**, **granularity**, **roughness** and **color**.

Make sure the checkbox **A** is selected for the film grain effect to be visible.



Standard Gives more grain in the highlight areas and provides the impression of a grain effect from a negative film.

Fine Gives less grain in highlight areas. The grain distribution is more narrow than **standard** and can therefore be used to give fine grained texture to the image. That way **Fine** can be used as texture filter, softening flat areas.

Soft Provides the same highlight grain characteristics as the fine settings but the film grains are applied in a different way. The grains applied using **Soft** are the same, but just resized for different granularity. That means, especially in larger granularity values, that the grains has no high frequency content (small grains) and that makes the grain effect look softer.

Amount Master slider for increasing or decreasing the film grain effect.

Granularity Used to increase or decrease the impression of grain size of a film.

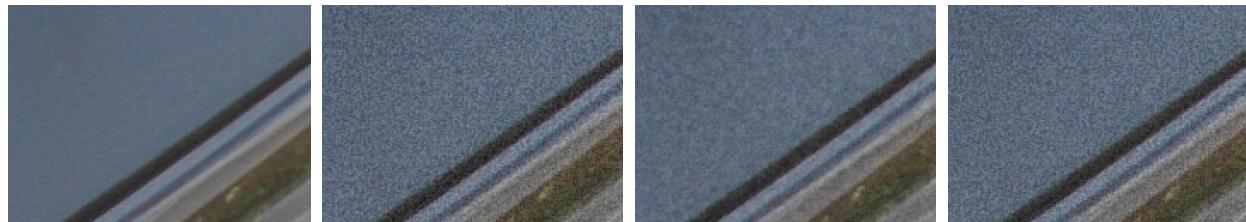
Roughness Used to sharpen the grain appearance, making the grain effect more well defined and characteristic.

Color Adds colored grains to the image. This makes the grain appear more realistic for color film simulation.

Presets

The tool includes a number of presets that can serve as a good starting point.

Click the icon **A** to show the list of presets. Here you can also save your current setting as a preset by clicking **Create Preset...**



No film grain

Grain type = **Fine**

Grain type = **Soft**

Grain type = **Normal**

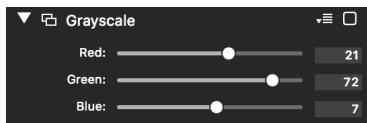


High vs. low **Amount**

Granularity

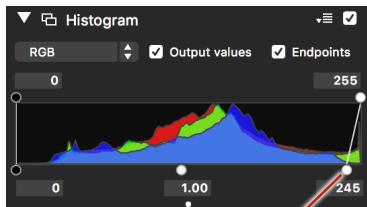
Roughness

Color



Grayscale

Temporarily converts image to a grayscale (while retaining RGB file components). Use RGB slider controls to adjust balance and effect. Files can be exported as color component grayscale (using RGB or CMYK channels) or as a pure **grayscale**. Uncheck the box in the Grayscale tool to revert back to color if required.



Tip

When using Recovery and Shadow Fill you can use highlight/shadow warnings as a guide.

Histogram

Graphs of combined or separate channels can be displayed (default: combined). Shadow, highlight and gamma settings can be made in the value fields or by using the slider controls. There are two checkboxes: **Output Values** and **Endpoints**. Check the **Output Values** box to view the histogram with all user adjustments. Check the **Endpoints** box to show top sliders and value fields for adjustment. (if the endpoints are not at default setting – 0 and 255 – then the values will appear in the top corners even if the box is not checked). F-stop marks are visible when the histogram is in input mode. The tool is resizable (drag lower section of tool) to accommodate the extra information.

By holding down the / **Shift** key when using the sliders you can see when clipping occurs (in the **Viewer**) in the shadows and highlights. This produces the same effect as the **Shadow Warning** and **Highlight Warning**.

To change the color and threshold point settings of these warning demarcations, hold down the / **Ctrl** keys while clicking on either the shadow or highlight slider control in the **Histogram** tool. A **Warning Options** panel opens, allowing changes.

IPTC Core

The **IPTC Core** tool allows you to apply presets of IPTC metadata to files about creators, contact information, archive/library descriptions, standard job types, etc.

Click the menu icon on the Tool header to access **IPTC Views** option panel for editing/creating and choosing presets.

Edit allows the choosing of informational items that are included in the preset lists called **Small**, **Medium** and **Large** (for example, you might always want to include your name, so that would be checked in all three preset lists, but you might only want to include location in the medium and large preset lists).

With any file, click on **Small**, **Medium** or **Large** to reveal the preset contents as a drop down list in the tool, thereby providing the information that is attached to that particular file. See larger illustrations of **IPTC Core** on following page. See special section for further details.

IPTC Core

The **IPTC Core** settings can contain a good deal of information.

By grouping information into three presets – **Small**, **Medium** and **Large** – you can quickly control the information included.

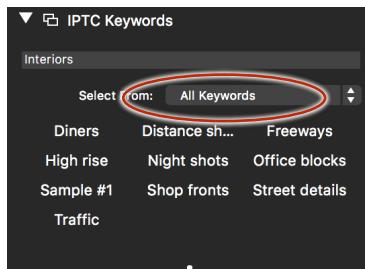


Tip

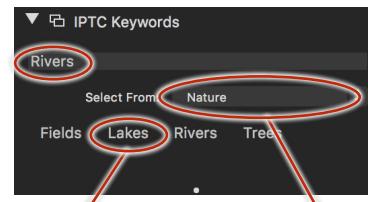
A star rating can be included with an IPTC preset. Click on the appropriate number of stars found furthest down on the Large IPTC Core list.



Editing and managing IPTC keywords



With **All Keywords** chosen on the menu bar, all keywords from all sets will appear as 'buttons' below and any can be selected (singly or in multiples) to add to the selected file.

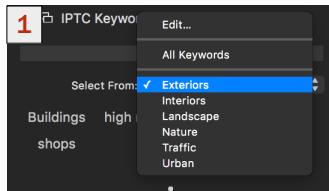


A keyword selected here appears above in the list for inclusion with the file.

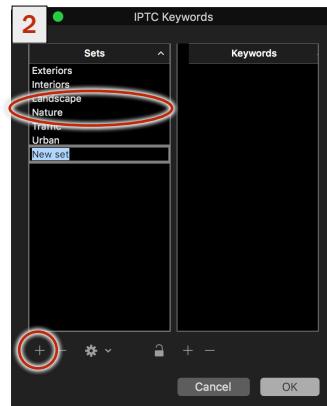
In this example, a set has been chosen—Nature—which restricts the choice to the keywords previously added to that particular set - in this case just Lakes, Rivers and Trees. The button Rivers was selected and the keyword appears above.

(continued on next page)

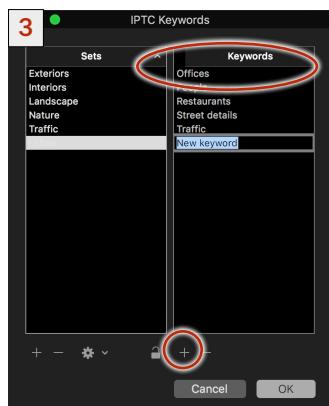
Editing and managing IPTC keywords – continued



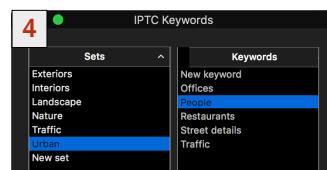
With the **IPTC Keyword** tool open, click on the menu bar and then Edit to open the settings panel.



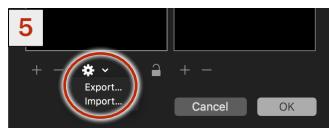
To add a set, click on the plus sign in the **Sets** column and type in the new title.



To add a keyword click on the plus sign in the **Keywords** column. Type in the new word.



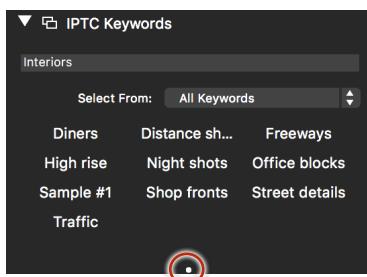
Add as many keywords as you need. To delete, select a set or keyword and click on the appropriate minus sign to delete. Click on the lock symbol to prevent unintentional changes.



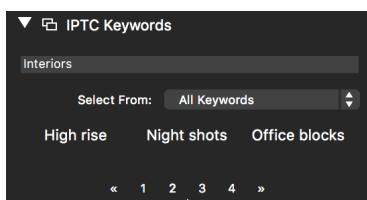
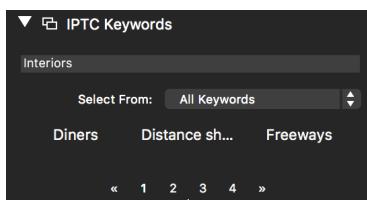
Keywords can be imported and exported as lists, even from Aperture and Adobe Lightroom.



Click on the lock symbol to protect a set of keywords against unintentional editing.



Tool can be reduced in size by dragging upwards resulting in tabbed mode illustrated below.



IPTC Keywords

Allows keyword inclusion to files individually or from sets. The tool can be contracted by dragging the lower bar upwards, automatically grouping the keywords (buttons) into numbered collections, as in the illustrations.

Clicking on the menu bar on the tool opens the settings panel to view sets, edit sets, select saved sets and create new sets. See ***Editing and Managing IPTC keywords*** on the following page for full details. Keywords can be added to thumbnails, singly or to multiple selections. Either write in a new keyword or choose from the list. See previous special section for further details.

Job info

Provides a selection of settings concerning new captures. Particularly useful for tethered work.

Destination: Select the desired **Destination** folder from recent destinations or by normal browsing.

Name: A new job name can be entered here.

File name: Choose from the four presets to change the way that files are named or make an edit.

Next Sequence Number: Enter the desired number for the new sequence.

Metadata: This links an **IPTC Preset** (see below) to the file. The chosen **IPTC Preset** controls the amount and type of metadata that is included in the raw file with tethered capture, or with the Import function when importing.

To create a new preset, click on **Edit** to reveal the options panel. Click on the plus sign to create a new name and then use the check boxes and information section to add or remove items. When saved, the title of this preset will appear on the Metadata menu bar. See illustrations overleaf.

Keystone Correction

The **Keystone Correction** tool can be used to correct the perspective of an imager in the Viewer.

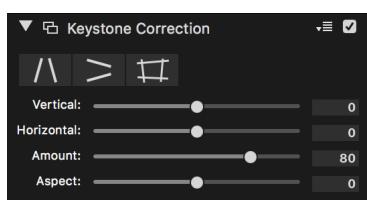
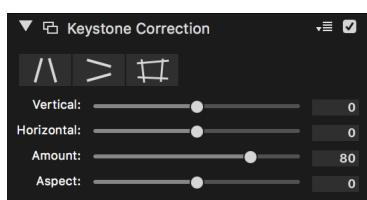
 **Vertical tool:** align the guides along vertical lines in the subject that should appear parallel

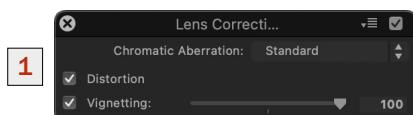
 **Horizontal tool:** align the guides along horizontal lines in the subject that should appear parallel

 **Rectangle tool:** align the four corners to match a part of the image that should be rectangular

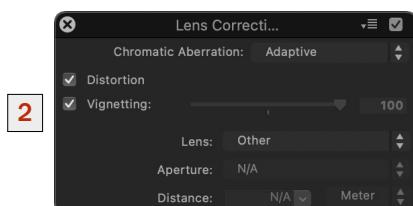
The **Vertical** and **Horizontal** sliders can be used to manually adjust the image. The **Amount** slider controls the percentage of the full theoretical correction applied. It will default to 80% as typically this will achieve a natural look when working with vertical corrections. In other cases it may be necessary to set it to 100% in order to achieve the full correction. **Aspect** changes the aspect of the image. A negative value will scale the image vertically and a positive value scale horizontally.

See examples "Keystone Correction tool – Example Vertical correction" on page 85.

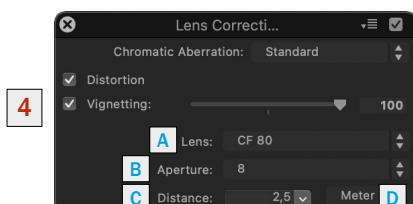
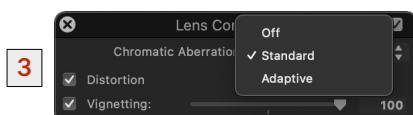




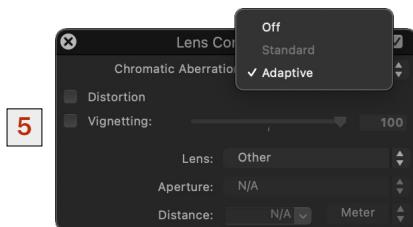
Dialogue with H and X System lenses.



Dialogue with V System or 3rd party lenses.



V System lens selection dialogue.



Lens Corrections

Depending on which type of lens was used for capture, the **Lens Correction** tool will have different options. If a lens from the H or X System was used, lens corrections will be fully automatic and the interface will look like 1. For a lens that isn't automatically identified, e.g. a V System or 3rd party lens, the interface will look like 2.

H or X System lenses

The lens is automatically identified and the correct lens correction tables are used.

Three corrections are available:

Chromatic aberration Corrects "Color fringing".

Distortion Corrects lens distortion.

Vignetting Removes vignetting. Check the box, then use the slider control or type in a value if full correction is not desired.

For **Chromatic Aberration** 3, you can choose between:

Off Chromatic aberration correction is disabled.

Standard Correction is based on the theoretical lens model.

Adaptive Correction is based on image analysis and can be used in the actual lens slightly differs from the theoretical model.

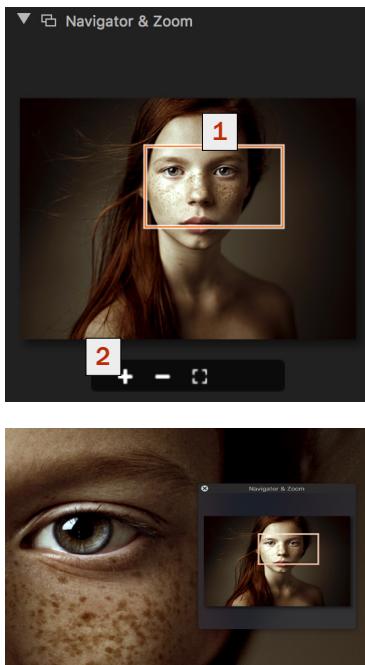
V System lenses 4

The lens cannot be automatically identified by the camera. This means that you will have to enter data for **Lens Type A**, **Aperture B** and **Distance C**. In the selection box **D**, you can select meter or feet as distance unit. This will ensure that the correct theoretical lens correction tables are used.

For Chromatic Aberration correction, can choose between **Off**, **Standard** and **Adaptive** as described above 3. **Distortion** and **Vignetting** correction works in the same way as for H and X System lenses.

3rd party lenses 5

The lens is not identified by the camera and there are no theoretical correction tables available. It is however, possible to use the **Adaptive** correction for Chromatic Aberration.



Floating tool on top of Viewer image showing track frame and corresponding enlargement in Viewer.

Navigator & Zoom

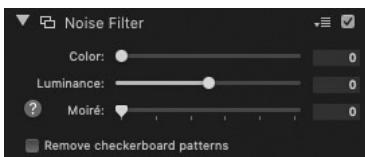
The **Navigator & Zoom** tool can be used in several ways providing not only a navigation function but also a loupe function.

With the **Navigator & Zoom** tool open, select the **Zoom** tool from the **Viewer toolbar** and click on **Viewer** image over the detail you want to check. A track frame appears on the image in the tool view **1** (with the same aspect ratio as the **Viewer** window). Select the frame and move it to a new area if required. Frame size in tool image changes according to magnification of **Viewer** image.

Alternatively, hover the mouse over the lower part of the tool image to reveal a control panel **2** with three buttons – a plus, a minus and a track button. Selecting the track button (shortcut toggle: L) converts the arrow cursor to a track cursor for the **Viewer** image while the plus and minus control enlargement for the tool image. The track cursor can be initially placed and then fixed by mousing down. Clicking elsewhere in the **Viewer** afterwards will automatically disable the track cursor to reveal the regular cursor again.

A floating variation of the tool can also be chosen, again, providing access to the three buttons if required. This produces a much larger tool window. In addition, the lower right hand corner of the window has a drag handle to alter the size.

Both click and drag as well as mouse scroll wheels can be used in the tool window (tabbed or floating) for navigation in zoomed mode. Holding down the **Alt** key will allow zooming in the tool window with a scroll wheel and **Alt**/clicking will toggle the zoomed view to 100%.



Noise Filter

Reduces noise in the image. Basic noise reduction is in place for all images, but certain textures under certain lighting conditions can produce extra noise.

The filtering tools are:

Color: Neutralizes the coloration of colored 'noisy' pixels, typically in areas with very fine detail such as hair or on fine textured materials.

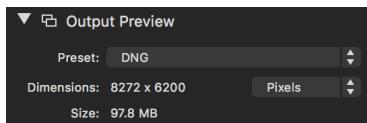
Luminance: For use with long exposures and high ISO rated images. Reduces the effect of pixels showing up as 'noise' in dark areas.

Moiré: Reduces moiré effects typically originating from patterned materials showing interference with the frequencies of the pixel structure on the sensor.

Note: a more flexible method to remove moiré is to use Adjustment Layers. With this method you can perform selective moiré removal.

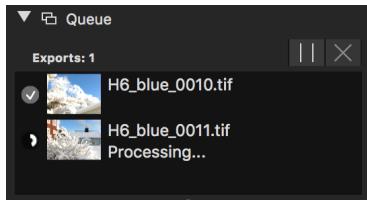
Please note that due to its nature, moiré will seldom be cured 100%.

Remove Checkerboard patterns: This option will remove the patterns that may occur when using for instance extreme wide angle lenses and/or dramatic tilt/shift settings.



Output Preview

Shows the output size of the current image exported with a given output preset (typically already selected in the export menu).



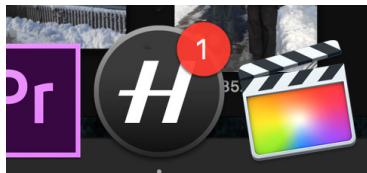
Queue

Displays files scheduled for export, files currently being exported in the background and files already exported as well as files being imported in the background from a card reader or connected disk.

If the file has been adjusted and/or cropped, then this is also reflected in the **Queue** thumbnail. You can *Ctrl* / *Right click* the file to open a list of options (*Reveal in Finder*, *Open in Editor*, *Show Thumbnails*, *Stop* and *Delete*).

Files in the queue can be paused by the Pause button, stopped or deleted via the **Options** or deleted by *Backspace* / *Delete*. The pause button will temporarily stop any further exports remaining in the queue. Thumbnail files can also be dragged and dropped onto the **Queue** tool to *Export as Previous*.

The number of unfinished export tasks also appears on the Phocus icon in the dock as a reminder.



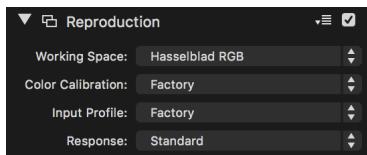
One file in the Export queue.

Tip

You can resize the Queue window by dragging the bottom edge if there are a large number of files on the list.

Tip

Drag thumbnails to the Queue tool as a quick alternative to Export as Previous.



Reproduction

This tool allows you to control some of the more advanced options related to color reproduction. Please note that it is not included by default - you need to manually add it by using the tool popup found at the top right of the tool area.

Working space: Lets you select the internal working space used by Phocus. Hasselblad RGB is the default working space while Hasselblad L* RGB will provide a slightly expanded gamut combined with an L* gradation. Hasselblad L* RGB should be the preferred choice when doing reproduction work.

Color calibration: Provides the option of using a standard (factory) color calibration or one that you have made using the built-in color calibration feature. See more on page 105.

Input profile: Provides the option of using your own custom camera profile instead of the default factory profile. When generating the input file to be used by your profiling tool it is important to export with an output preset where the profile is set to 'Source' - this will result in no ICC transformations being applied to the image data. In addition, please note that a custom profile will be dependent on the working space selected when creating the profile.

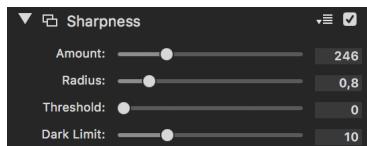
Response:

Standard: Approaching what would be considered a standard film response.

Reproduction: Linear response which is gained in order to match the theoretical ISO response

Reproduction Low Gain: Linear but without the gain to match ISO. This will utilize the full dynamic response of the sensor but at an ISO response that is slightly lower than nominal

Negative: A reverse linear curve



Sharpness

Sharpness contains four controls: **Amount**, **Radius**, **Threshold** and **Dark Limit**. See separate sources for in-depth explanations of sharpening tools and methods.

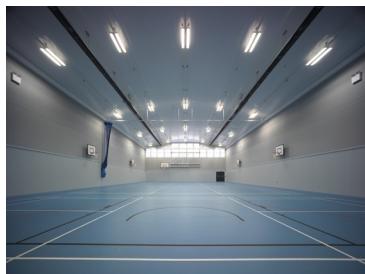
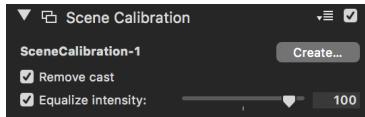
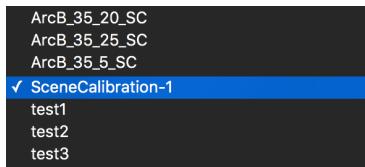
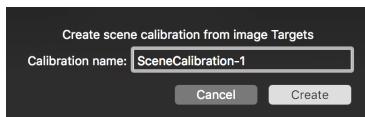
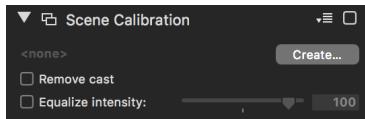
Amount: Controls the strength of the sharpening effect. Depending on image, a value between 80 and 200 is recommended as a starting point.

Radius: The larger the radius, the more extensive the sharpening effect will be. The setting depends on the nature of the image and resolution. Generally, use a large radius with lower-resolution images and a smaller radius for high-resolution output.

Threshold: Controls the point above or below which pixels are affected. Values are from 0 through 255. Very low settings will sharpen most pixels, and might create unwanted noise in soft texture, such as skin, for example. Higher settings will restrict the changes to detailed areas only.

Dark limit: Sets the brightness level below which the filter has no effect. This will prevent the filter from intensifying noise or unwanted textures. The higher the number, the less extensive the sharpening effect will be. Depending on the image, a setting between 0 and 20 is recommended.

Click on the menu icon to access the presets: **Default**, **Medium**, **High** and **Portrait**.



Uncorrected



Corrected

Scene Calibration

This tool helps to remove a color cast and/or uneven illumination caused by lighting variations. It has two check-boxes: **Remove cast** and **Equalize intensity**. The slider for **Equalize intensity** is used for fine-tuning to the intensity adjustment.

Remove cast: Particularly useful when tilt and shift are used, for example, where a partial unwanted color cast can sometimes be produced.

Equalize intensity: Neutralizes any overall luminance discrepancies. Useful in reproduction work and similar to even out slight variations in lighting for a more uniform distribution. The slider, ranging from 0 to 110%, allows for fine-tuning to the intensity correction.

When using H System lenses, ensure that any **Vignetting** setting in the **Lens Correction** tool is turned off as a combination of the two will overcorrect the image.

Procedure:

1. Capture your main image as usual.
2. Capture the scene calibration image using the same camera settings (tilt, shift, lens etc.) A simple method is to use an opaque white plastic sheet in front of the lens. Make sure the plastic sheet is thick enough to eliminate all details from the image. Normally a 1.5 mm thick material will be sufficient. Note that scene calibration can only be created from single shot images and can be applied to single and multi-shot images. A new scene calibration cannot be created from multi-shot images.
3. If working untethered, import both images into Phocus.
4. Select the white frame and using the Scene Calibration tool click the Create option. You will be prompted for a name.
5. Now select the actual image to be corrected.
6. From the drop down selection arrow of the scene calibration tool select the calibration file you have just created. Ensure the tool is switched on (small tick box in top right hand corner of tool box).
7. Now tick the remove cast box and the Equalize intensity box if required.
8. If the correction is too harsh drag the intensity slider to the left until the correction is at the desired amount.
9. If required, the same scene correction image can be applied to multiple images using the Modify command.

White Balance

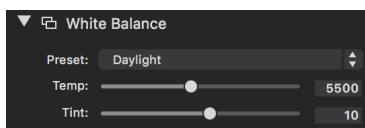
The white balance tool includes:

Preset: A menu containing standard presets as well as other preset possibilities. Multiple selected files can also modified at the same time to ensure consistent color within a batch.

Temp: Adjusts the color temperature according to the Kelvin scale. Slider or value input.

Tint: Compensates for any green (slide to the left) or magenta cast (slide to the right) or by value input.

The neutralization tool on the **Viewer toolbar** can also be used.



Toolbar

The Toolbar is accessible in most, but not all, layout configurations above the File Browser, Viewer and Tool Area. It consists of a number of frequently used tools for general use.



Photo: Joseph Goh



Toolbar

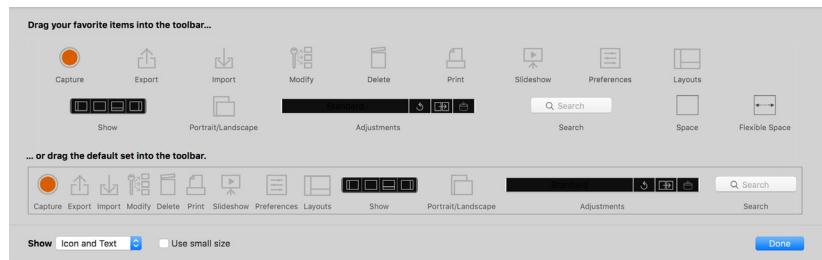
- Icon and Text**
- Icon Only**
- Text Only**
- Hide Toolbar**

Use Small Size

Customize Toolbar...



Illustrated above is just one example of a possible Toolbar display. *Ctrl / Right click* the bar, to select a number of display options. Select **Customize Toolbar** to open the dialog illustrated below (Mac). This provides the opportunity to customize the layout by drag and drop, to change the size of the icons and text etc. You can drag and drop selected items or the default set onto the bar and delete items by drag and drop off the bar.



Capture

During capture, shots from a tethered camera are stored directly as 3F files in the chosen destination folder. According to model, a capture can also be controlled and initiated remotely from the keyboard.

See **Tethered Capture** section for further details.

Export

Click on the **Export** button to open the dialog. This allows you to choose the file format, resolution, profile etc. of the exported files.

The first option is destination for the file, followed by:

Output Preset: Contains a list of image file formats. Press Edit to open an extra dialog containing File format, Quality, PPI, Dimensions and Output profile.

Name Preset: Contains a list of file-naming variables. Press Edit to open an extra dialog for a number of choices about naming variables.

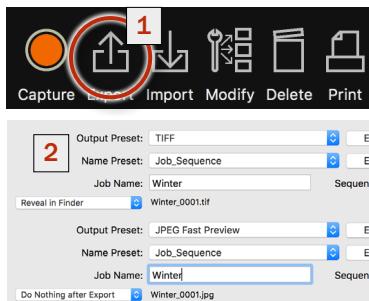
Job Name: Allows a name change.

A post-export option

An **Additional** Output option

Presets can be edited to provide a very wide range of possibilities. See specific sections in this manual about **Output** and **Name presets** to learn more about this powerful aspect of Phocus.





Export New Images Automatically

You can speed up the export of files by using the **Export New Images Automatically** function. A selected folder (any folder, new or already existing) is classified as a 'hot' folder where placed files can be individually or mass processed according to a set of chosen options that apply specifically to that folder.

The folder can be used as a 'drag-and-drop' folder or as an import folder. Even the **Capture Folder** can be classified as a 'hot' folder if you wish.

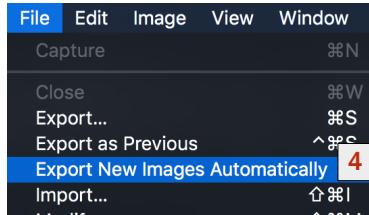
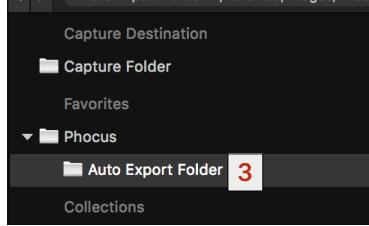
Proceed as follows:

1. Choose Toolbar > Export **1** to reveal an options window.
2. Go through the options **2** ensuring that all the settings are correct to produce the type of file required.
3. Choose **File Browser** **3** to either select a current folder or create a new folder (named "Auto Export" in this example). Whichever you choose to do, ensure that the folder remains selected.
4. Choose Menu > File > Export New Images Automatically **4**.

New tethered captures can be automatically exported from the selected folder if you right click it and then select **Use as Capture Destination** from the options.

Alternatively you can drag and drop captures from any folder into the new **Auto Export** folder for immediate processing and dispatch to the **Export** folder.

Just remember that all files placed in this 'hot' folder will be exported according to the settings originally chosen in step **2**.



Import & Export Tips

Tip
<p>Files can be exported directly from the thumbnail view via an options list by Ctrl clicking / right clicking thumbnails.</p> <p>Be aware, however, that many advantages of Phocus will be lost by exporting 3FR files directly. See FAQ chapter for details.</p>

Tip
<p>A tethered camera can also act as a card reader. It will appear as an icon under Devices in the File Browser. Click on the disclosure triangle to see the Capture folder. Then click on the folder to display the captures directly in the Thumbnail Browser.</p>

Tip
<p>Whenever any imports or exports are active you will see a status bar at the bottom of the File Browser showing the number of remaining exports and imports.</p> <p>The Queue tool will also show the progress of imported/exported files.</p>

Tip
<p>The Preferences menu allows setting the Embedded Preview Size. Choosing a Large or Extra Large preview size is recommended for optimal preview viewing quality in Phocus. However, this will affect file size and performance on older platforms.</p>

Tip
<p>Double click a 3FR thumbnail to immediately import it and open it in Viewer.</p>

Tip
<p>In Preferences you can select a specific layout that is activated automatically when a camera is connected or memory card inserted.</p>

Import

See **Import** in previous section and **Adjustments** in the following section.

Modify

Opens a dialog offering a list of choices for batch modification of selected (shift clicked) thumbnails.

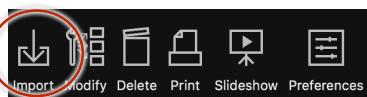
See illustrations below.

Delete

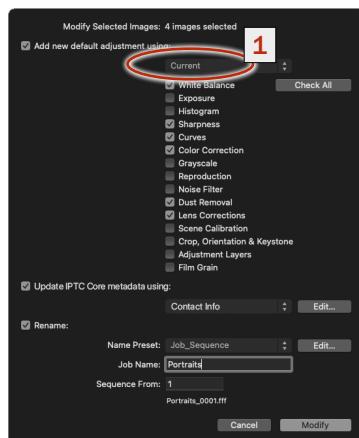
Sends selected image directly to the Trash. Alternatively press delete or backspace on the keyboard. In these two cases a dialog opens for approval before trashing the files.

Print

Dialog offers not only the standard printer choice but also PDF and Preview opportunities. See special section on following page for more details.

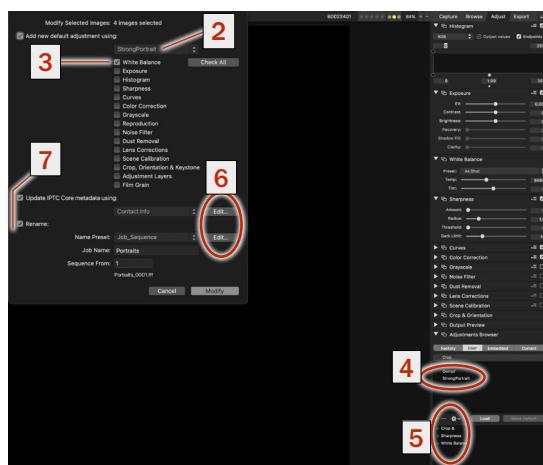
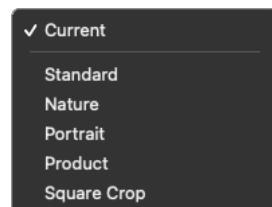


Modify



Click on **Modify** ($\uparrow + \# + m / Ctrl + m$) in the **Toolbar** to open the options. The selection 1 offers presets such as **Current** (current tool settings), **Portrait**, **Product** etc. Alternatively, individual tools can be checked on and off for more individual adjustments.

Your custom presets also appear as choices via this menu.



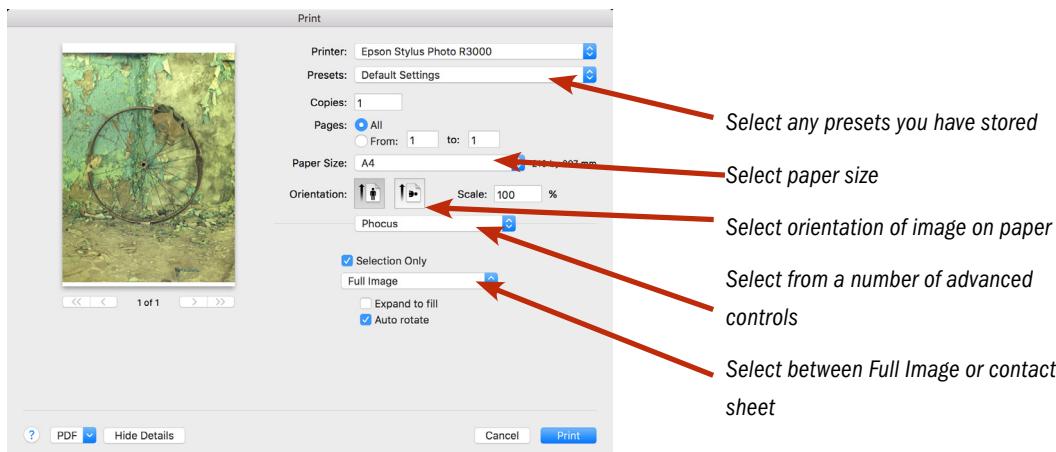
In this example, a custom preset 2 (StrongPortrait) has been used plus **White Balance** 3.

(Note also in this example, the **Adjustments Browser** 4 remains open from a previous save with the same preset, so the adjustment tool list 5 can be checked regarding content).

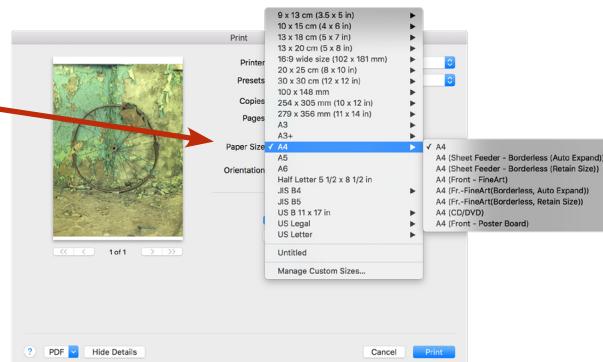
Both **IPTC Core** and **Name** options can be opened for updates by checking the boxes 7 and clicking on the **Edit** buttons 6.

Print

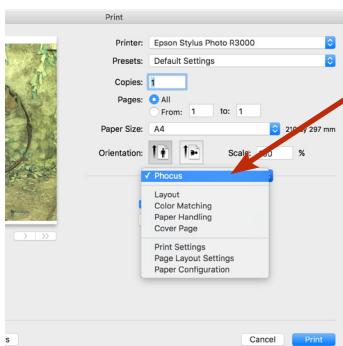
The **Print** dialog offers a list of possibilities to cover a variety of requirements. Below are just examples of what is available.



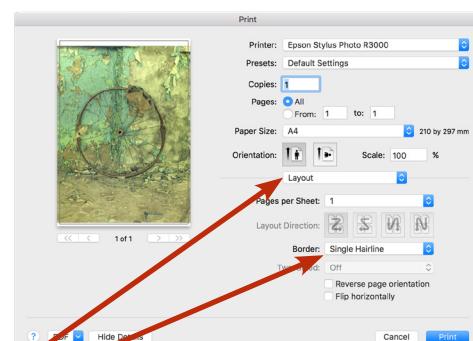
Click here to reveal a list of conventional as well as custom sizes.



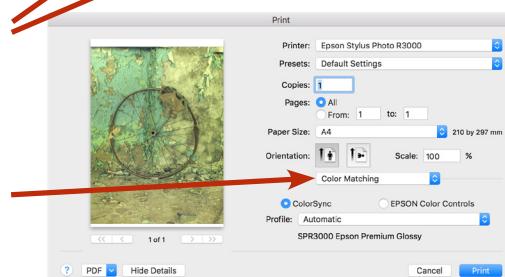
Click here to reveal a list of more advanced controls.



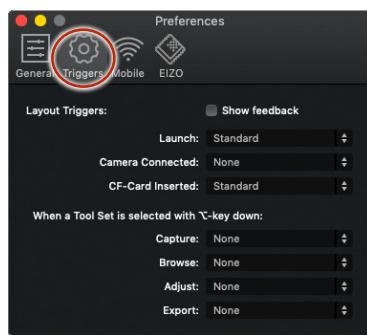
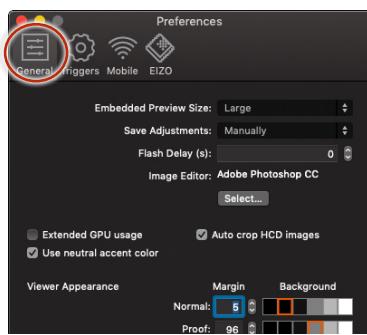
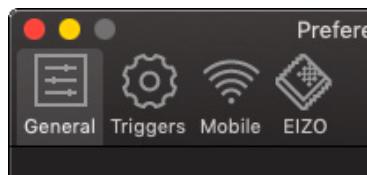
Here, layout has been selected to provide layout choice and thin border.



Here, Color Matching has been selected to provide color management control.



Preferences



Open preferences by choosing:

- **Toolbar > Preferences**
- **Menu > Phocus > Preferences**
- (⌘+,) Mac only

The dialog has four tabs that are accessed by clicking on the appropriate icon: **General**, **Triggers**, **Mobile** and **Eizo**. The Eizo tab is only available when a compatible Eizo monitor is connected. See page 104.

General:

Embedded Preview Size: **Small**, **Medium**, **Large** and **Extra Large** (default setting: **Medium**). Note that a **Large** setting, for example, will increase the quality of the embedded preview as displayed in **Viewer** but will also increase its size and therefore requirements of computing power regarding screen redraw speed.

Save adjustments: Sets how adjustments are saved (default setting: **Always Save**).

Manually - requires you to save each time you decide is necessary.

Ask before saving - displays a dialog for you to check each time a save is attempted.

Always Save - saves the current adjustments

Flash Delay (s): delays next capture to allow time for older flash systems to regenerate correctly for next capture when using Multi-Shot.

Image Editor: Click **Select** to choose the application you want to work with for further editing of images. Double-clicking on an image in the **Queue** (after it has been processed/exported) will then open it in the selected software.

Extended GPU usage: When checked, the computer will use the GPU for faster image exports and improved viewer performance when zoomed to 100% and above. On the Mac platform this feature requires a Metal compatible GPU. If the system requirements are not met, the check-box will be disabled.

Autocrop HCD images: Automatically crops images from H4D-60, H5D-60 or H6D-100c/HCD lens combinations. The added crop can easily be removed later.

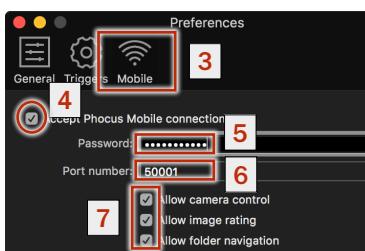
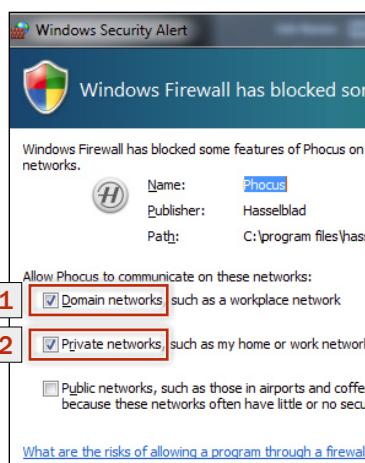
Use neutral accent color: Overrides the system accent color to provide grayscale controls in Phocus (mac OS 10.14 and later).

Viewer Appearance: You can control both background color and margin (area around Viewer image) independently for normal mode and proof mode.

Triggers:

Sets the choice of layout that can be automatically initiated, if required. Choose the appropriate action, then click on the drop down menu alongside to select the chosen layout. For example, you may prefer to see the **Thumbnails Only** layout when a memory card is inserted, if so, just select **Memory Card Inserted > Thumbnails Only**. The view will then automatically change to **Thumbnails Only** when a memory card is inserted. Remember that you can create your own layouts for various situations as described in the **Layout Overview** section of this manual.

Tool Set: Sets the layout (default or customized) that can be initiated by Option clicking (**Alt/Ctrl + Alt**) a Tool tab. For example, you may prefer to hide the **Thumbnails** and **File Browser** when making **Adjustments**. By making the appropriate selections, the layout will automatically change to **Viewer** only when you make an Option click on the **Adjustment tab** in the **Tool palette**.



Mobile:

Note! The following concerns the first version of **Phocus Mobile** that is only compatible with **H5D**, **H6D** and **X1D generation 1** cameras. Newer cameras can only use **Phocus Mobile 2** which is described on page 113.

A special version of Phocus – **Phocus Mobile** – is available for the Apple iPhone®, iPad® and iPod Touch®. It offers the option of wireless connection enabling users to remotely browse, zoom and rate images. This allows individuals to view images on separate electronic devices rather than gathering around a single computer.

Phocus Mobile also allows users to remotely operate and trigger a tethered camera, providing control of exposure mode, f/stop, shutter speed, ISO, metering mode and other important capture information, all presented on a virtual camera display. This is additionally particularly useful when the camera is located in a difficult-to-access position. For a detailed description of **Phocus Mobile**, please see page 107.

Phocus Mobile setup

Phocus Mobile is available free of charge from the Apple App store and will automatically be installed onto your chosen device. Windows setups may additionally require changes to the Windows firewall setting; see note below.

Phocus Mobile and Windows

On the Windows platform, **Phocus Mobile** utilizes **Apple Bonjour** (version 2.0.2 or later) and so this must be installed first. Apple Bonjour is a local service discovery application (to enable local wireless connections) that is an integral part of the Apple computer operative system that also works with Windows. It is automatically installed with **Apple iTunes** but can also be separately downloaded from the Apple support website.

It is advisable to update your Windows system with the latest service packs before installation. The Windows firewall will probably have to be manually set to allow **Phocus** to communicate with Phocus Mobile. Typically this would mean that a firewall prompt dialog will appear on the first launch of **Phocus Mobile** where you should check Domain networks ... **1** and Private networks ... **2** to allow connection. However, due to the variety of possible Windows configurations, connection issues may still occur. In these instances you should verify the correct installation of **Apple Bonjour** in the **Computer Management > Services and Applications > Services window**.

Enabling Phocus Mobile (Mac and Windows)

1. With Phocus running, open Preferences and then click on the Mobile **3** tab.
2. Check Accept Phocus Mobile connections **4**.
3. Write a password **5** if you want to prevent undesired mobile access to Phocus (optional).
4. Port number **6**. In most cases when you access the Phocus host from within the LAN you can leave this at it's default value. If you have special FireWall requirements and in particular if you need to setup a connection from outside the LAN you will need to enter the dedicated port number.
5. Decide whether you want to allow remote camera control and/or image rating **7** and check accordingly.
6. Close the Preferences window and open Phocus Mobile.

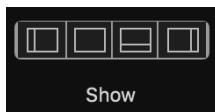
Layout options on the Toolbar



Portrait /Landscape

Switches the layout of the **Viewer** and the **Thumbnail Browser** from landscape (default) to portrait or vice versa (toggle function). Useful for exploiting viewing area on screen. See example below.

The layout on the left can be changed to the layout on the right by selecting **Portrait/Landscape** on the **Toolbar**.



Show

Show (chosen via **Customize Toolbar** on Mac platforms; default on Windows) offers four rapid hide/show buttons for the **Browser**, **Viewer**, **Thumbnails** and **Tools** panels. See example below.

This layout was produced by using **Show** on the **Toolbar**. The **File Browser** and the **Thumbnails** were hidden by selecting the appropriate icons (that represent the four main areas).

Selecting the same icons again would reveal the tools again (go **Menu > Windows** to hide and show **Tools/Browser/Thumbnails/Viewer** areas or use shortcuts).



Layouts

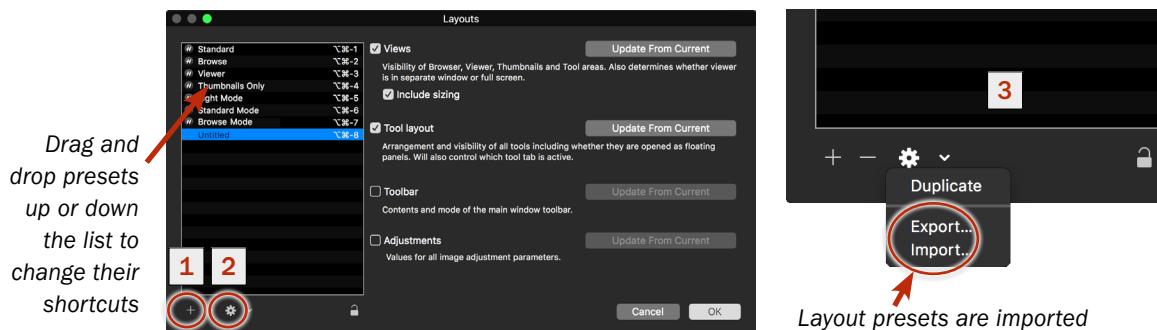
Layouts (dialog) allows you to select one of four factory defined layouts (with changeable shortcuts), customized user created layouts as well as defining layout arrangements and content.

This layout was produced by using selecting **Thumbnails Only** in **Layouts** on the **Toolbar** (can also be accessed under **Menu > Window > Layout**):

Edit...
Standard ctrl+alt+1
Browse ctrl+alt+2
Viewer ctrl+alt+3
Thumbnails Only ctrl+alt+4

Select **Edit** to create customized layout presets (see below).

Working with Layouts in Phocus



Choose **Toolbar > Layouts > Edit** (or **Menu > Window > Layout > Edit**) to open the dialog containing many options under four headings: **Views**, **Tool Layout**, **Toolbar** and **Adjustments**.

Only current settings can be saved. Click the **Update From Current** buttons for each group to include those settings. A disabled **Update From Current** button implies that the setting already complies with the current state.

Views: This section determines which of the four main areas are to be included. Also determines whether the viewer appears on a separate window or appears in full screen view. Check the **Include sizing** box if you want to retain the size of the areas.

Tool Layout: Determines which tools are to be included in regard to their position on the lists under the tabs, whether they are open, closed or floating and whether they are active or not.

Toolbar: Sets the contents and mode of the Viewer toolbar.

Adjustments: Sets the parameter values of all adjustments used.

In addition, layout choice can be triggered by specific actions in order to automate various proceedings (see **Preferences** for details).

When settings are complete, click on the plus sign 1 to create a new layout on the list (minus to delete a file) containing the required settings of one, several or all groups.

Name the file and then click on the action button 2 to copy it or export it 3. Previously saved settings can also be imported here. Change the shortcut if required by shuffling/deleting the list names.

Preset layouts can be recalled for specific working situations on your platform and exported/imported to/from other workstations. They improve workflow considerably as less time is needed for orientation and the checking of settings.

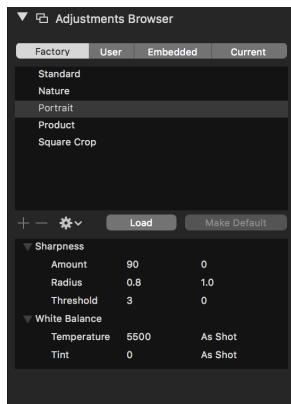
Adjustments

Adjustments can facilitate workflow and add security and rapidity to a sometimes risky and time-consuming aspect of file management.



Photo: Hengki Koentjoro

Adjustments – editing management



By exploiting the possibilities that Phocus offers you can not only save a great deal of time but improve the efficiency and security in this area of your workflow when editing images.

In Phocus, edits can be applied singly or collectively. Sets of edits are referred to as **Adjustments**.

Note that an **Adjustment** is an internal function within Phocus only. When the file is exported into another format it has the desired edit instructions applied to the exported file. That is, all edits are nondestructive in Phocus and so 3F files remain unaffected and can be recalled at a later date as identical as they were when first processed from the raw data. So, in simple terms, you cannot "press the wrong button" in Phocus because the original file always remains.

As you apply each edit (color balance, curves, exposure, etc.) you can progressively build up a history of the changes made. When you are satisfied with your choice of modifications, you can save the collective changes as **Adjustments**. These are added to and stored inside the raw file to become Embedded. (It is by way of the **Embedded** list that you can revert back to any stage of image development that you wish).

Note

Current only illustrates the current state regarding accumulated edits. It does not necessarily imply the current state has been saved.

Adjustments can also be saved for future use on other files and will appear beneath the User heading. **Adjustments** can also be applied simultaneously to a whole batch of files by using the **Modify** tool. This means you can always go back to something you preferred a few minutes ago or back to something you preferred several months ago, for example. In that way, a whole folder of captures can be simultaneously edited in exactly the same way, securely and automatically, in accordance with your own or your clients preferences, for example.

Adjustments can also be imported and exported. This feature is very useful for sharing, when on location, when renting equipment etc.

As a starting point, Phocus has some Factory presets that can either be used directly or as a basis for additional fine-tuning and saving as customized presets.

Note

You must press Load (or Return) to apply a selected preset.

There are a number of controls that exploit the underlying **Adjustments** concept:

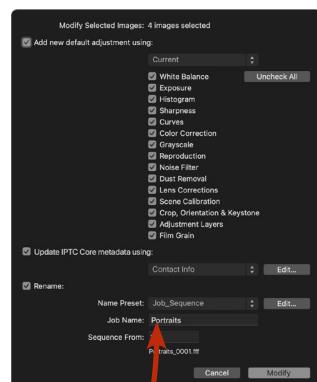
- A dialog for applying adjustments during image import.
- A **Modify** function for applying adjustments to a batch of images.
- Options for how current adjustments are saved (**Ask Before Saving**, etc.)
- A tool for managing adjustments.
- A **Save changes** button that saves current adjustments.
- A **Copy to User** function that saves current adjustments as custom presets.

Therefore, it is advisable to build up your understanding of Adjustments to see how they can work for you in your situation and improve your workflow.

See the following chart for an overview of the the idea behind **Adjustments**.

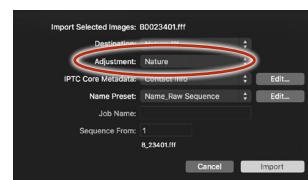
Adjustments – overview

This simplified overview illustrates the interrelation of some of the adjustments functions between four tools. There are many settings that are shared. Presets can be exploited using any of these four tools.



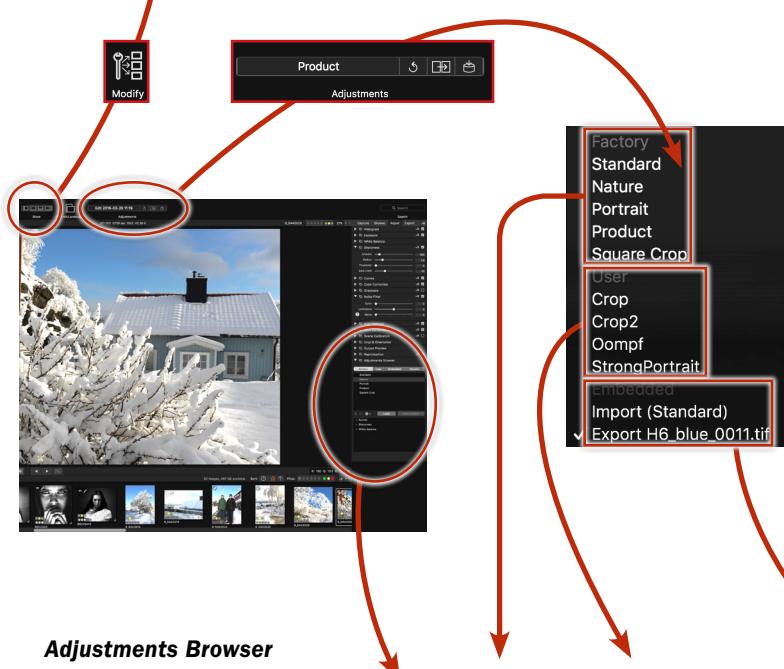
Modify

The **Modify** dialog is used for rapid and automatic batch processing. It uses adjustment presets that can be temporarily customized if required. IPTC data and file naming can also be batch changed in this dialog.



Import

The **Import** dialog allows you to apply Adjustments to images when they are imported.



Adjustments view

The **Adjustments view** is a visible reminder of the current preset or save, according to the image in the Viewer.

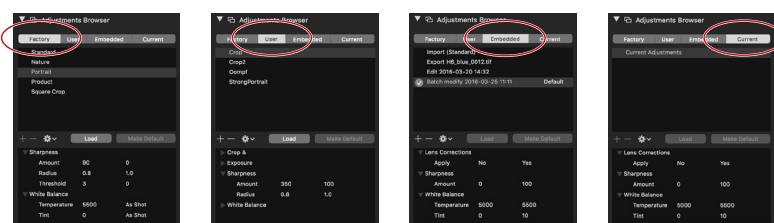
It also displays a list of presets and saves under the three headings: **Factory**, **User** and **Embedded**.

It mirrors the information (except settings) also visible in the Adjustment Browser.

Adjustments Browser

This tool acts as an Adjustment multi-tool and information check system. It provides four separate and very useful groups of information – **Factory**, **User**, **Embedded** and **Current**.

Customized presets are also created with this tool and saved either as new presets or as default presets.

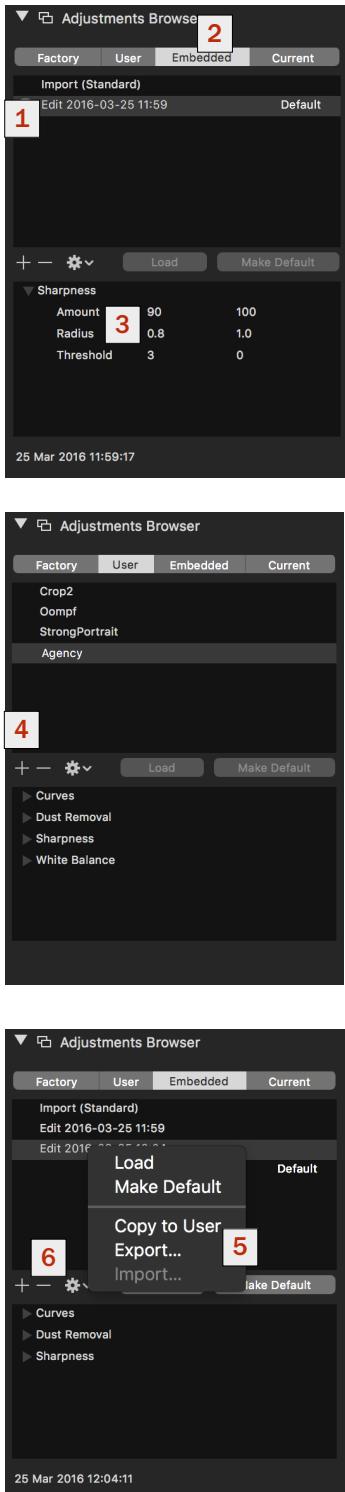


Factory lists several presets as starting points.

User lists custom made Adjustments for global use.

Embedded lists the history of saved adjustments within the selected file.

Current lists the tools and settings currently in use.



Adjustments Browser

In the example shown here, an adjustment **1** under the Embedded heading **2**, has been selected. An activated tool icon in the view beneath **3**, reveals the details of the Sharpness settings that were in use at the time the adjustment was applied to the image.

Adjustments – categories

Open the Adjustment Browser tool and click on the appropriate heading. The lower section displays the settings of the tools used for the selected adjustment (revealed by the tool icon). Note this means the adjustment you have just selected, not necessarily the adjustment in use with the corresponding results visible in the Viewer. Also note that any selected adjustment must be loaded to take effect, selecting alone will not apply any changes.

Factory: These are the standard adjustments provided with Phocus. They can be either used directly or for creating a customized adjustment which is listed beneath the User heading.

Standard: No edits

Nature: Curves – RGB

Sharpness – Amount 180, Radius 0.8

White Balance – Temp 5500, Tint 10

Portrait: Sharpness – Amount 90, Radius 0.8, Threshold 3

White Balance – Temp 5500, Tint 0

Product: Sharpness – Amount 350, Radius 0.8

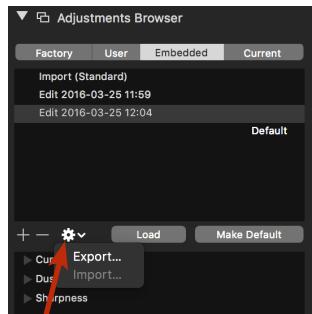
White Balance – Temp 5500, Tint 0

Square Crop: Crop (60Mpix model only)

User: Displays user-defined adjustments that can be used globally for use with any other images. These are generated either by clicking the plus sign **4** in the User menu which will store an adjustment with the actual saved settings present or by selecting an adjustment beneath the Embedded heading, right-clicking and then choosing Copy to User **5**.

A preset can be deleted by clicking the minus sign **6**. Double-click the new preset to re-name it.

Embedded: Displays a history of saved (embedded) adjustments (note that it is not a list of edits you may have tried and not saved). These are added to the list each time changes are saved. The adjustments last saved with the current file are marked as default. A check mark in front of an adjustment shows that it is applied to the current file. If you want to save an Embedded adjustment for use with other images, either right click the selected adjustment and select Copy to User or under the User heading, click on the plus sign to copy the original embedded adjustment. Either way you can then double click the new adjustment in User and rename it (advisable).



Adjustments can also be imported and exported.

All embedded adjustments are stored directly within a 3F file. With other file formats, adjustments are stored in sidecar files. If files are moved within Phocus, then the adjustments are automatically transferred too. However, if files are copied outside of Phocus or to another computer/storage device then you should ensure that the appropriate sidecar files are copied too in the case of other formats. 3F files remain unaffected with regard to copying as they always retain their integral adjustment history.

Current: This represents the current total set of adjustments for the selected image. It therefore visually illustrates the effect on the current image made by any loaded adjustment plus any changes made afterwards. Note that the Current set of adjustments might not necessarily have been saved as an adjustment at this point. Can also generate a User setting.

Transferring Adjustments

Both **Embedded** and **Current** adjustments can be copied to **User** as custom presets by right clicking the selected adjustment and choosing **Copy to User**.

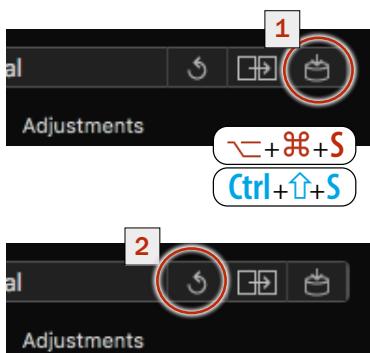
Adjustment Preferences

Under **Preferences** (in the **Toolbar**) you can choose how the current adjustments are to be saved when browsing to the next image.

The options are **Manually**, **Ask Before Saving** and **Always Save** (recommended).

Saving adjustments

You can save any changes made by pressing the **Save changes** 1 button in the **Adjustments View** on the **Toolbar** or use the shortcut – **⌘ + ⌘ + S / Ctrl+⇧+S**. This generates a new set of adjustments on the **Embedded** list.



You can revert from any edits made simply by pressing the **Reload** button 2 in the **Adjustments View** (if you haven't made a save as this creates a set and automatically greys out the **Reload** button).

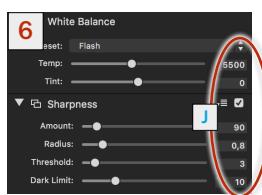
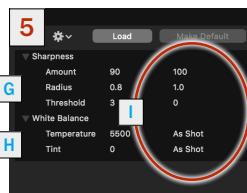
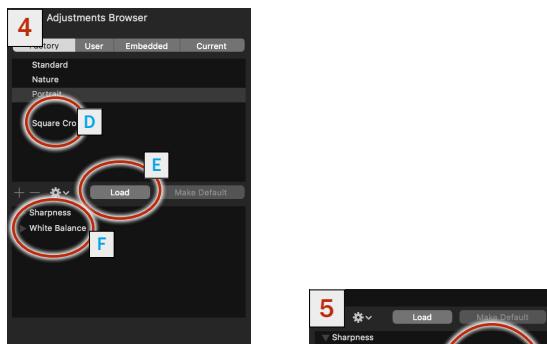
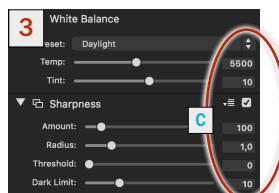
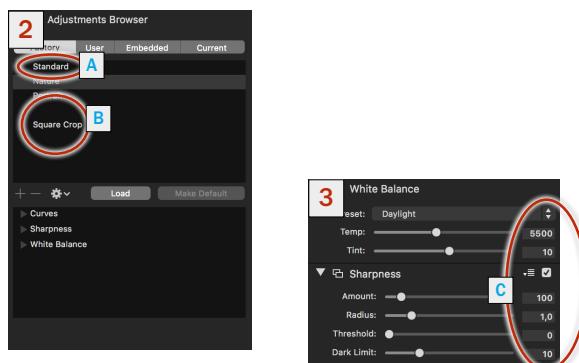
A recently saved adjustment can also be used on a new image by pressing the Use last saved adjustment button 3 or use the shortcut – **⇧ + ⌘ + U / Ctrl+⇧+U**.

In this way, the **Adjustment View** section of the **Toolbar** also acts as a shortcut to directly choose – or change your choice of – adjustments (as a quick alternative to going through the longer process of selecting and loading new adjustments from the **Adjustments Browser** tool).

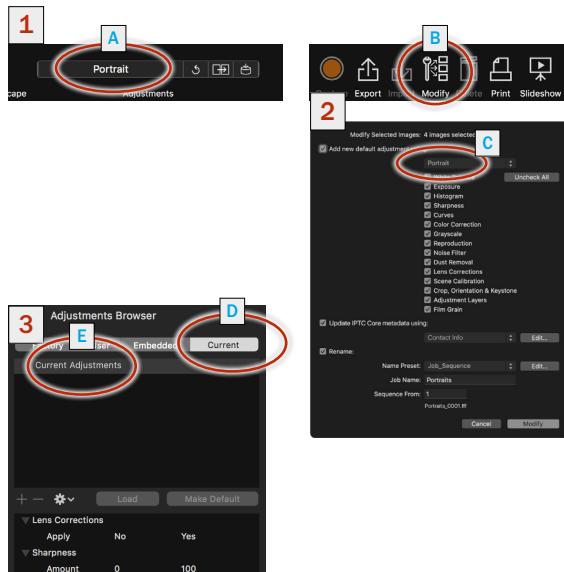
Adjustments – an example

In this example a portrait is chosen and adjustments applied to demonstrate how adjustments can help smooth out the workflow process.

Both single images and batch processing of multiple images can be adjusted this way.



1. For this example, make sure the **Viewer**, **Thumbnail Browser** and **Tools** are displayed. Select a file to appear in the **Viewer**.
2. Open the **Adjustments Browser** tool and click on the Factory heading **A** to display the Factory presets **B**.
3. Open the **White Balance** and the **Sharpness** tools (note the current settings **C**).
4. Back in the **Adjustments Browser** under the **Factory** heading, click on the "Portrait" preset **D** then click on Load **E**. You will see that **Sharpness** and **White Balance** now appear in the lower view.
5. In the lower window of the **Adjustments Browser**, click on the disclosure triangles **G** and **H** and to see the settings – **Sharpness** (amount 90, radius 0.8, threshold 3) and **White Balance** **I** (Temperature 5500, Tint 0).
6. If you now look back again at the **White Balance** and the **Sharpness** tools, you will see that the new settings **J** (as shown in 5 above in the **Adjustments Browser**) have now been transferred to these tools thereby applying their effects on the image in the **Viewer**.



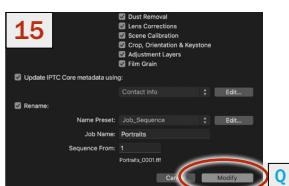
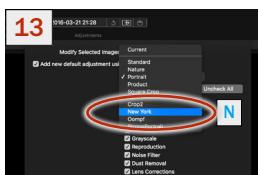
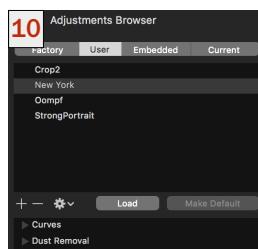
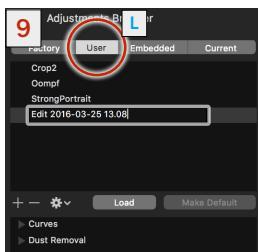
Continuing from the previous example, observe the following:

1. If you now look at the Adjustment view on the Toolbar you will see "Portrait" A. This provides a constant visual reminder of the adjustment in use for the selected image.
2. If you click on Modify B on the Toolbar the menu in the Modify dialog also now lists "Portrait" C for selection. This provides the opportunity to batch modify a group of images using the identical adjustments for all, automatically.
3. If you click on the Current D heading in the Adjustments Browser tool you will see "Current Adjustments" E. The lower panel now displays the current settings details allowing you to inspect them for approval (in this case it is Sharpness and White Balance from the "Portrait" preset plus an additional edit of Curves, see below).



To continue even further, this example shows how a factory preset is customized, saved, renamed and used as a new modifying preset for a batch of images.

4. Having applied "Portrait" to the selected image as in the first example, open the **Curve** tool and make a change.
5. Save the change by clicking the **Save** button F on the **Toolbar** (which then dims to signify that change has been saved).
6. Click on the **Embedded** G heading in the **Adjustments Browser** tool to display the new setting which is named with the date and time H. (Notice that the **Adjustment** window I on the **Toolbar** bar displays the same name now).
7. Back in the **Adjustment Browser**, select the latest saved adjustment J and right click it to reveal a pop up menu.
8. Select **Copy to User** K from the menu.



9. The new adjustment now automatically appears under the **User L** heading as a new customized preset (named here with the same date and time as when saved).

10. You can now rename it by clicking on it first to highlight it. In this example it is renamed to "New York".

11. In the **Thumbnails Browser** select the files you want to change.

12. Click on **Modify M** on the **Toolbar** to display the dialog.

13. On the dropdown in the Modify dialog, select the desired saved adjustment **N** ("New York" - in this case).

14. Also in the **Modify** dialog, you can include some extra IPTC data and rename the files. In this case, a previous IPTC preset is chosen **O** and the files are renamed **P**.

15. Finally, click on the **Modify Q** button.

To sum up, you have now:

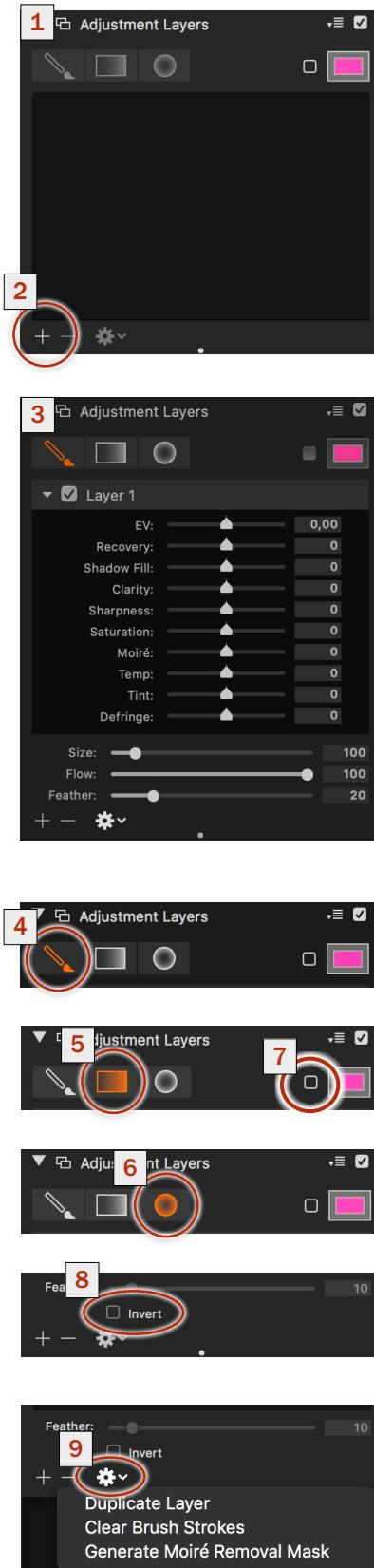
- used a preset to securely make previously approved edits.
- added to that preset to create a new customized preset.
- renamed the new customized preset for future use.
- altered the IPTC information for inclusion with the newly modified files.
- renamed the newly modified files.

In this way you can modify batches of very finely tuned files quickly, easily and securely.

Tip

There several ways of exploiting the actions within **Adjustments** and you should investigate the possibilities that would suit your particular preferences.

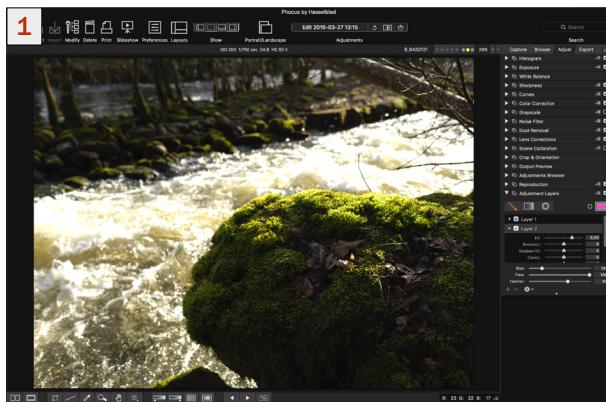
Adjustments Layers



Adjustment Layers

1. Open the **Adjustment Layers** tool from the "Adjust" tab
2. Click "+" to add a new adjustment layer.
3. A new Adjustment layer is added with 10 different options:
 - Ev (Exposure adjustment)
 - Recovery
 - Shadow Fill 1)
 - Clarity 1)
 - Sharpness
 - Saturation
 - Moiré
 - Temp (Color Temperature)
 - Tint (Color Tint)
 - Defringe
- 4) Requires v2 or v3 of the adjustment algorithms. See 51.
4. Click the **Brush** tool to use freehand painting to create the adjustment layers mask. Holding down the Alt-key (/ **Alt**), changes the brush to erase mode.
5. Select the **Gradient** tool to create a linear gradient mask.
6. The **Radial Gradient** will create a radial mask.
7. Checking this box visualizes the area covered by the mask.
8. Checking this box will invert the effect of the mask.
9. Clicking the settings icon at the bottom of the tool will reveal a sub-menu with the following options:
 - Duplicate layer:** copies the active layer to a new
 - Clear brush strokes:** removes any mask from the active layer
 - Generate Moiré Removal Mask:** searches the image for possible moiré and automatically generates a mask.

Adjustments Layers – Brush tool

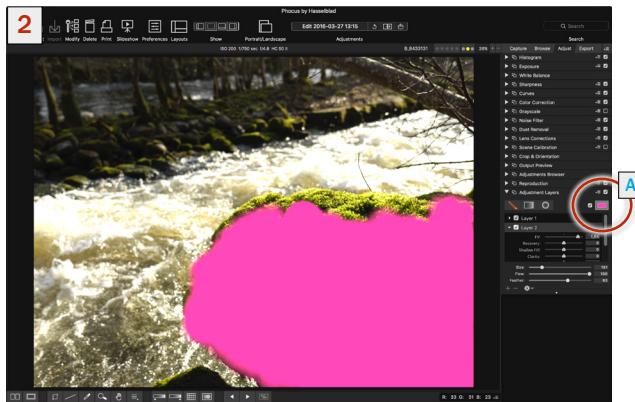


Brush Tool



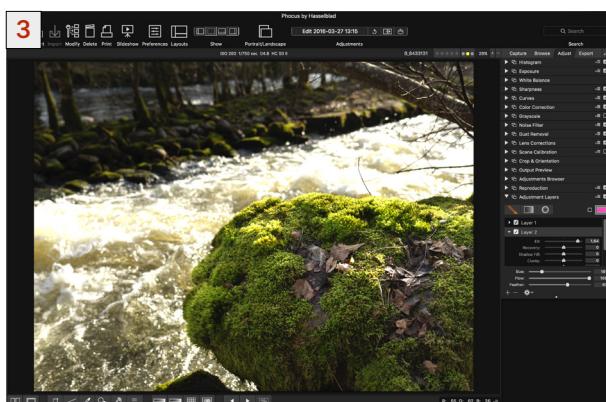
1. Add a new adjustment layer and select the **brush tool**. Use the control sliders (size, flow and feather) to control the brush behaviour.
2. Check the box **A** to show the mask and paint over the area to be brightened.
3. Uncheck the show mask box and evaluate the result. Use the sliders to fine-tune the setting.

Note: To erase a brush stroke, press the **Option**/
Esc key on Mac or **Alt** key on PC and paint over the area to be erased.

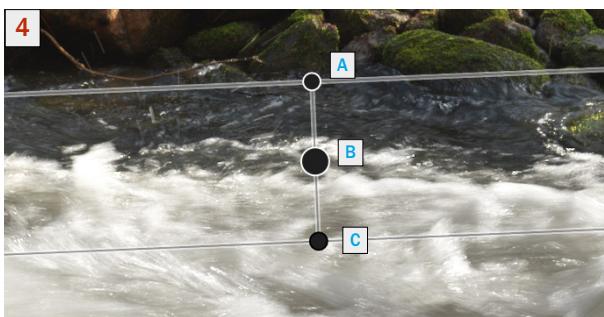
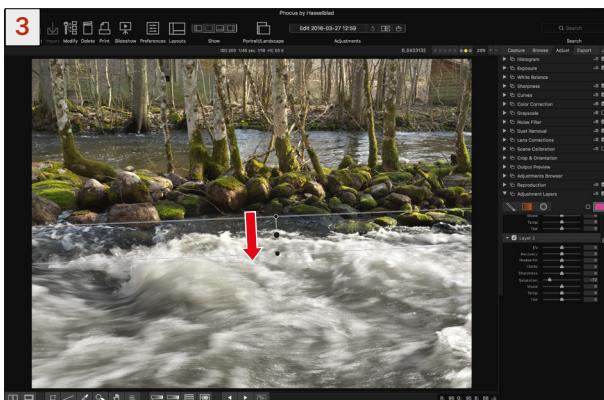
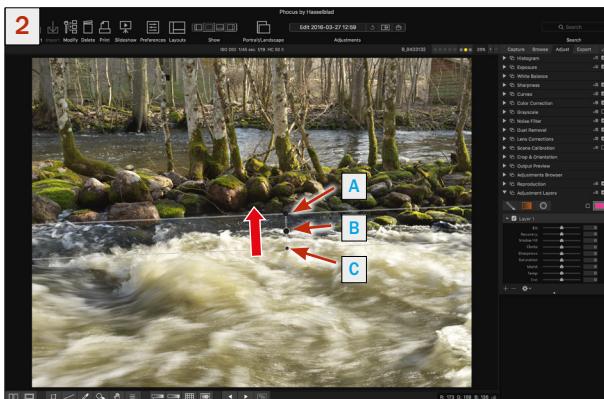
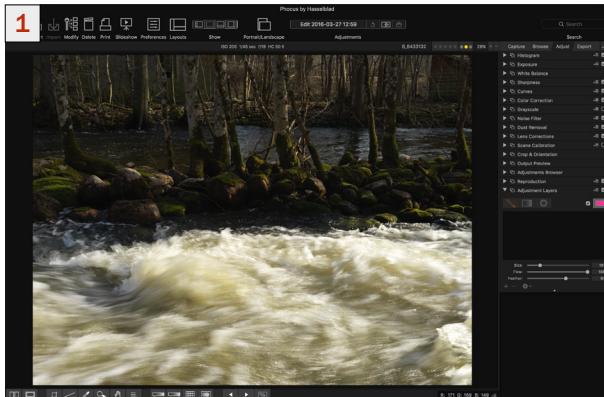


Note: All values for the adjustment layer can be changed at any time.

Note: When using a Wacom tablet or similar pressure sensitive device, the pressure will now be used to control the flow of the adjustment layer brush, in that case the maximum flow used will be determined by the setting of the flow slider.



Adjustments Layers – Gradient tool



Gradient Tool



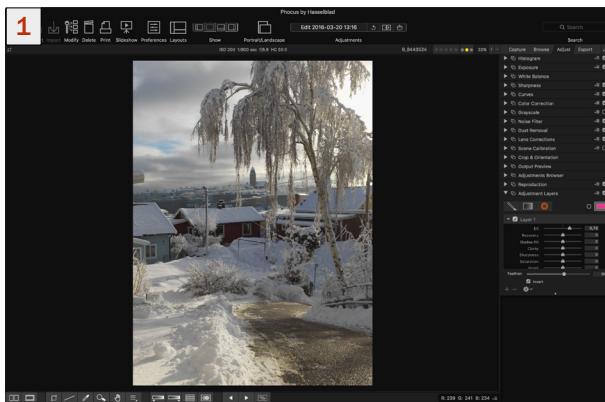
1. Add a new **adjustment layer** and select the **Gradient tool**.
2. Select the **Gradient tool** and drag from where the water meets the rocks and up a bit. The gradient can be adjusted later using the handles on the gradient. See #4.
3. Add a new layer by clicking the "+". Set **Saturation** to a negative value to decrease saturation. Drag a new gradient. This time in the opposite direction. Fine-tune the setting for Saturation for the desired result.
4. Gradient manipulation handles:

A: The white outline indicates active side. Modify the gradient by moving this handle.

B: Centre handle - Moves the gradient.

C: Inactive side. Modify the gradient by moving this handle.

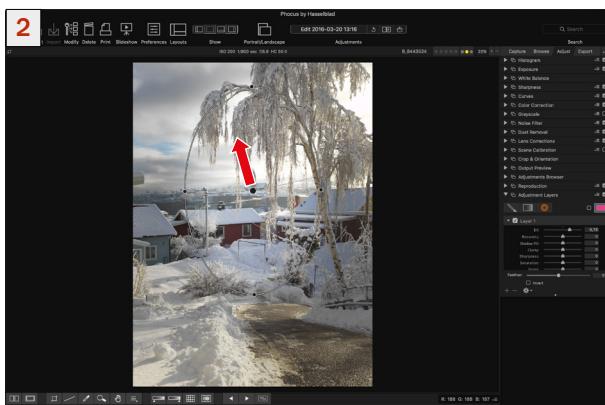
Adjustments Layers – Radial Gradient tool



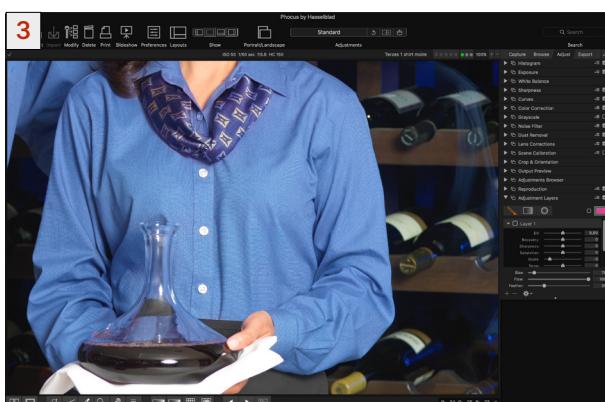
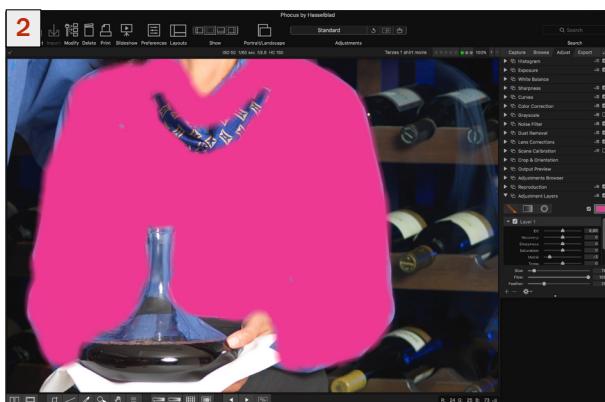
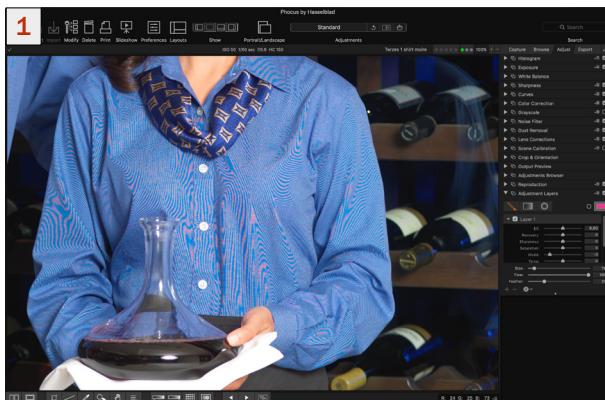
Radial Gradient Tool



1. Add a new **adjustment layer** and select the **Radial Gradient** tool. Set EV adjustment to a positive value.
2. Use the **Radial Gradient** tool to drag an ellipse from the centre. Note that the ellipse can be adjusted later using the handles. The centre handle moves the whole gradient while the other handles will re-shape the gradient.



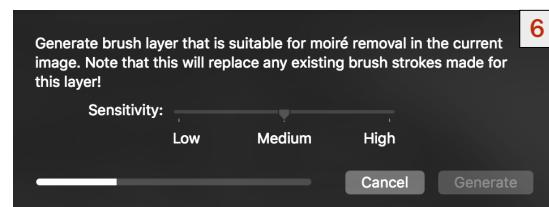
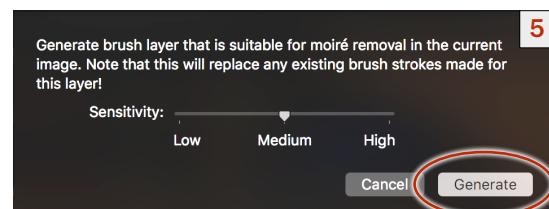
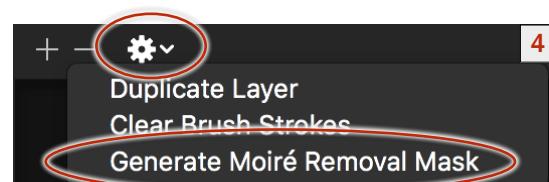
Adjustments Layers – Moiré removal



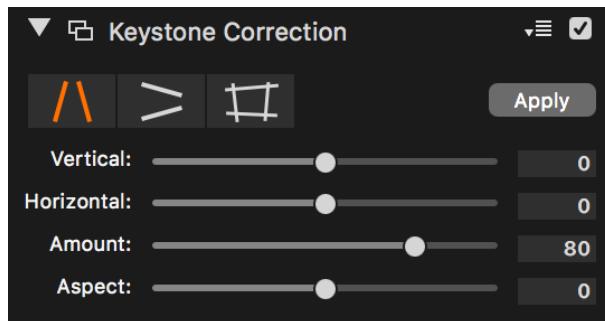
Selective Moiré removal

Sometimes the Moiré Removal Tool can affect some areas of the image in a non-desired way. In such a case, selective Moiré Removal is a good solution.

1. Open the image showing Moiré.
2. Select the brush tool and add a mask over the area where you want to remove Moiré.
3. Adjust the slider for Moiré until you get the desired result.
4. In the Adjustment Layer action menu, there is an option to automatically create a Moiré removal mask. This option will search the image and look for areas that can show moiré.
5. With the slider you can select three different strengths for the mask (low - medium - high). Experiment to find the setting that is optimal for the particular image. Click Generate.
6. A progress bar appears to indicate remaining time. When the mask generation is complete, the dialogue will disappear. Check the Show Mask to see what the mask looks like. The mask can be edited using any of the three tools.



Keystone Correction tool – Example Vertical correction



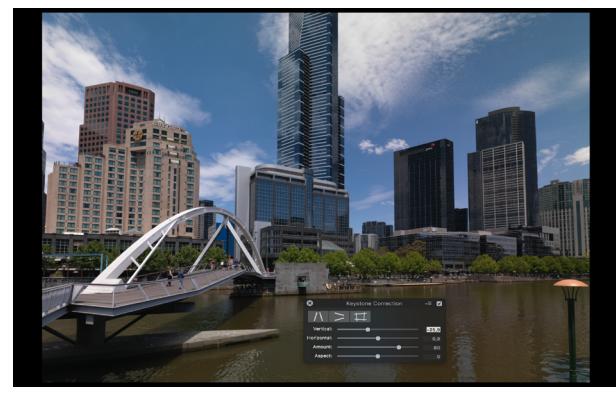
1. Open the **Keystone Correction** tool from the "Adjust" tab and open an image in the viewer



2. Click the **Vertical Tool** to reveal the vertical guides



3. Adjust the guides by dragging the control points to align with lines in the subject that should be vertical. Click the **Apply** button

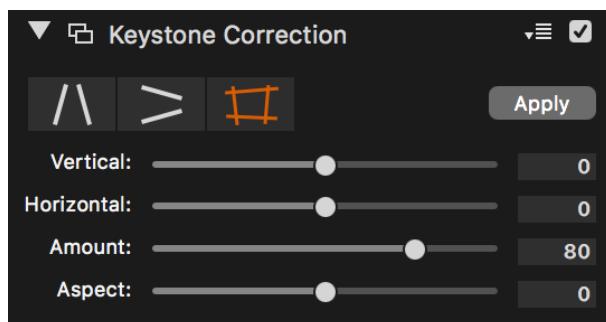


The perspective is now corrected.

By changing the **Amount** slider, you can control the amount of vertical correction for the most visually pleasing result.

The crop can be fine-tuned by using the standard **crop tool**. Note that you can use the "Allow Crop Outside" checkbox to allow cropping outside the image area.

Keystone Correction tool – Example Rectangular correction



1. Open the **Keystone Correction** tool from the "Adjust" tab and open an image in the viewer

2. Click the **Rectangle Tool** to reveal the rectangular guides



3. Adjust the guides by dragging the control points to align with the four corners in the subject.
- Click the **Apply** button

The perspective is now corrected.

By changing the **Amount** slider, you can control the amount of vertical correction for the most visually pleasing result. In this case, an amount of 100% is most likely to be the best choice.

The crop can be fine-tuned by using the standard **crop tool**

Broncolor Flash Control

With this tool it is possible to control Broncolor flashes that feature Wi-Fi. The features that can be controlled are:

- Intensity of lamps or groups
- Modeling light
- Test flash

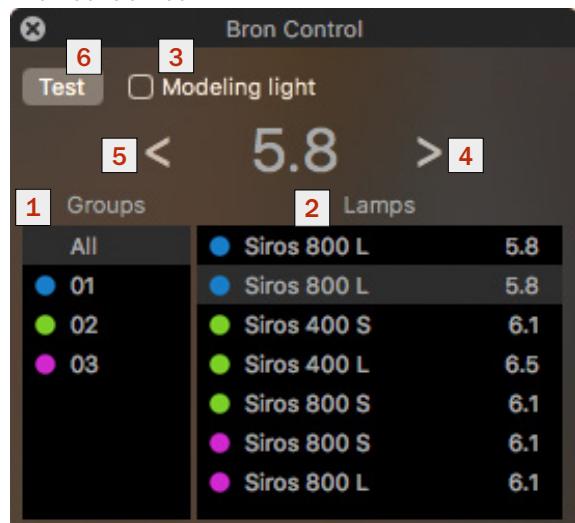
Setup

Refer to the flash unit's instruction manual for how to setup Wi-Fi and grouping of flashes.

When Wi-Fi is activated on the flash units and the required grouping set, connect your computer running Phocus to the same network.

Flash units can be controlled either individually, in groups or all. To control a single flash, click in the Lamps column (2). To select all or a group, click in the Groups column (1).

Bron Control Tool



Modeling light

Click the checkbox (3) to turn modeling light on. Click again to turn off.

Intensity

Click the right arrow (4) to increase intensity in 1/10 steps and the left arrow (5) to decrease. Holding down the Shift key will increment intensity in 1.0 steps. If flashes in a group have different intensities, all flashes in that group will increment in 1/10 or 1.0 steps.

Note that you can also use the left and right arrow keys on your keyboard.

Test flash

Click the Test button (6) to make a test flash with the selected flashes.

Focus Bracketing

Create images with infinite depth-of-field using the Focus Bracketing function in the Capture Sequencer tool.



Focus Bracketing

The **Capture Sequencer** tool includes a second tab for control of **Focus Bracketing**.

This function will create an image sequence where focus is shifted between images. A separate software is required to combine the captured images into a composite. There are several options available. For the images in this chapter, Helicon Focus™ from Helicon Soft was used.

Compatible cameras

H system cameras: from H4D and later. Multi-shot cameras will work in single-shot and 6-shot modes only.

X System cameras: All. Note that first generation X1D cannot use Specify Limits sweep mode.

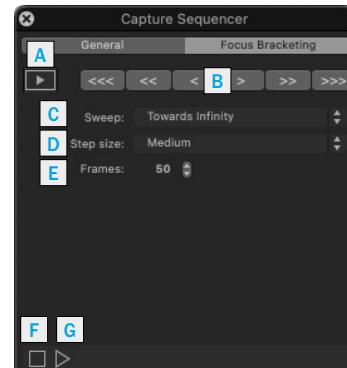
The **Focus Bracketing** tab has the following controls:

- Start Live View **A**
- Focus controls **B**
- Sweep Mode **C**
- Step Size **D**
- Frames **E**
- Stop capture sequence **F**
- Start capture sequence **G**

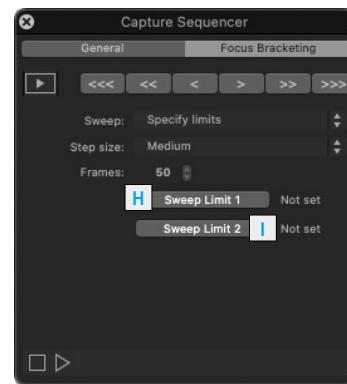
When Sweep Mode **Specify Limits** is selected, two additional controls become available:

- Sweep Limit 1 **H**
- Sweep Limit 2 **I**

Continued on the next page.



Capture Sequencer tool with the Focus Bracketing tab selected.



Specify Limits sweep mode selected. Only available with X1D II 50C, 907X 50C and 907X Special Edition cameras

Note

Make sure that the camera and lens are using the latest available firmware.

Sweep Mode

There are 4 possible modes:

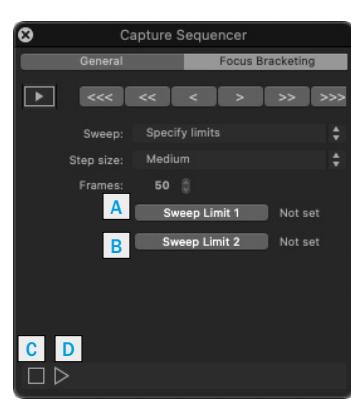
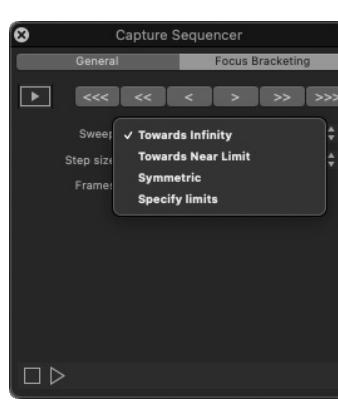
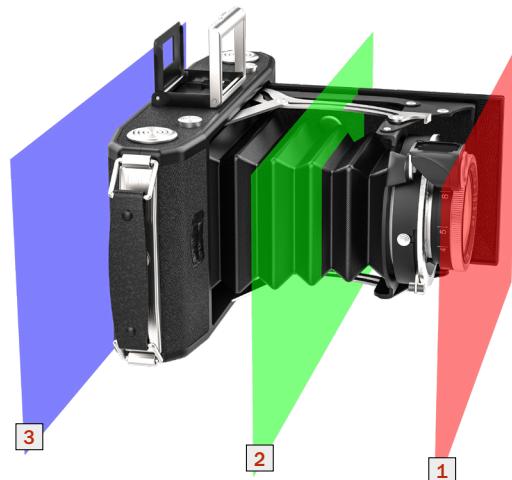
- **Towards Infinity** – Set focus on the closest point **1**. The camera will start shifting focus towards infinity until the selected number of frames has been reached or the lens has reached its end position.
- **Towards Near Limit** – Set focus on the furthest point **3**. The camera will start shifting focus towards near limit until the selected number of frames has been reached or the lens has reached its end position.
- **Symmetric** – In this mode, focus should be set on the main subject **2**. When the sequence is started, the camera will first take an image and then move to a focus point closer to the near limit and take all the images in the sequence, shifting focus towards infinity. The first image is an extra exposure made to ensure that there is one image of the main subject with perfect focus.
- **Specify Limits** (Available with X1D II 50C, 907X 50C and 907X Special Edition cameras only).
 - Set focus on the furthest point 3. Then click **Sweep Limit 2 B**. An approximate distance value should now be shown next to the button.
 - Set focus on the nearest point 1 and click **Sweep Limit 1 A**. An approximate distance value should now be shown next to the button. The required number of frames will be automatically calculated as a function of the selected aperture.

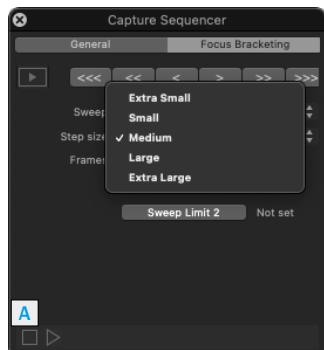
For all modes, the sequence is started by clicking the arrow **D**. To stop a running sequence, click the Stop button **C**.

Continued on the next page.

Note

The first 3 modes basically works like the focus bracketing feature built into the X1D II 50C/907X 50C cameras. See separate User Guides for these cameras for additional details.



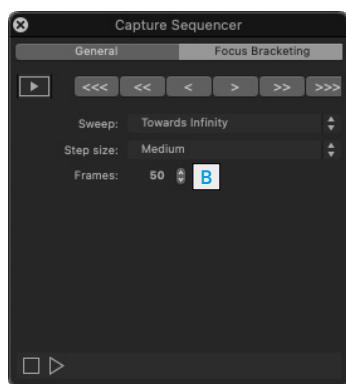


Step size selection

Step Size

This setting selects the amount of focus shift between images. The actual step size is dependant on the selected lens aperture. E.g. f/4 results in a smaller step and requires more frames than f/8.

A guideline is that **Medium** will always give a result that has perfect coverage of sharpness over the subject but can result in a large number of frames. Using **Extra Large** will give unsharp areas as the focus shift is larger than the depth-of-field. If this is visible or not depends on the magnification of the final image. In many cases, using **Medium** or **Large** step size is a good choice and will produce excellent results. Experiment with different step sizes to learn which settings that will produce the best results for you.



Frames selection

Frames

The **Frames** option **B** selects how many captures will be made in the sequence. Enter a value in the box or use the small up/down arrows to change.

As there can be so many different situations, it is difficult to give precise guidelines on how many frames to select. See examples on the following pages.

A great advantage of shooting focus stacking tethered, is that you immediately see the result on screen. If the selected number of frames didn't provide full coverage of the subject, you can always run the sequence again. If too many frames were selected, simply stop the sequence by pressing the stop button **A**.

When the **Specify Limits** mode is selected, the number of frames is automatically calculated and cannot be set.

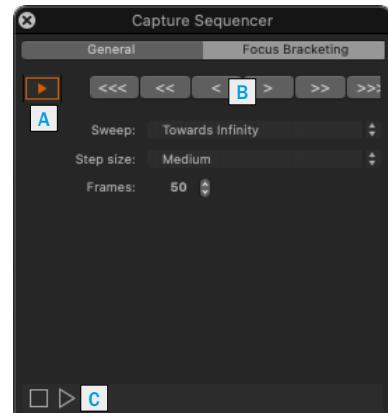
Continued on the next page.

Example using a H System camera

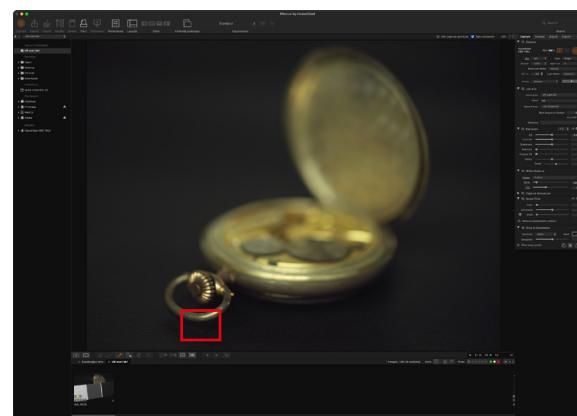
The H6D 100c was set up about 50 cm from the 100 year old watch. An HC 120 II lens was used and aperture f/8 was selected.

1. Select **Toward Infinity** as sweep method.
2. Press the Live View button **A**
3. Use the Phocus zoom tool to zoom in on the closest point. The viewer in Phocus will look something like illustration **D**.
4. Use the focus controls **B** to adjust focus on the closest point as shown in illustration **D**. Arrows pointing left focuses toward the near limit. A button with three arrows makes a larger focus adjustment than a button with one arrow.
5. Turn off Live View by clicking the Live View button again. This is not necessary but reduces heat build-up in the sensor.
6. Set 50 as a starting value for **Frames**.
7. To minimize vibrations, raise the mirror by pressing the mirror-up button **E** in the camera control tool or by pressing the mirror-up button on the camera.
8. Start the sequence by pressing the Start button **C**.
9. When the sequence ended, it was evident in this case that 50 images was not enough to cover the watch. Therefore the sequence was started again by pressing the start button **C**.
10. Analyze the captured images and if required make necessary adjustments. Make sure all images are adjusted equally.
11. Select all images that covers the subject with sharp areas and export them to Tiff or Jpg.
12. Import the images to the software used for focus stacking and make the final composite. Depending on software there are different methods to stack images. Use all available methods to see which will produce the best result. You may have to combine parts from different methods to achieve the best result possible as different algorithms have different strengths and weaknesses.

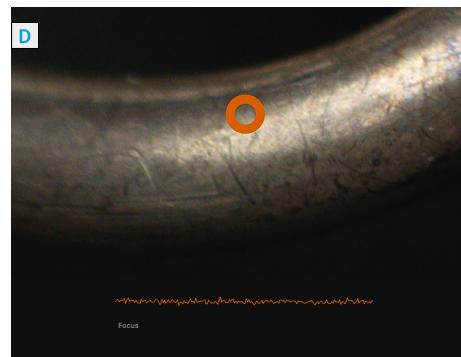
The resulting image is shown on the next page.



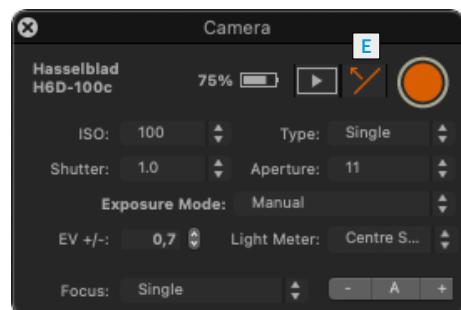
Live View active



Phocus main window with active Live View.



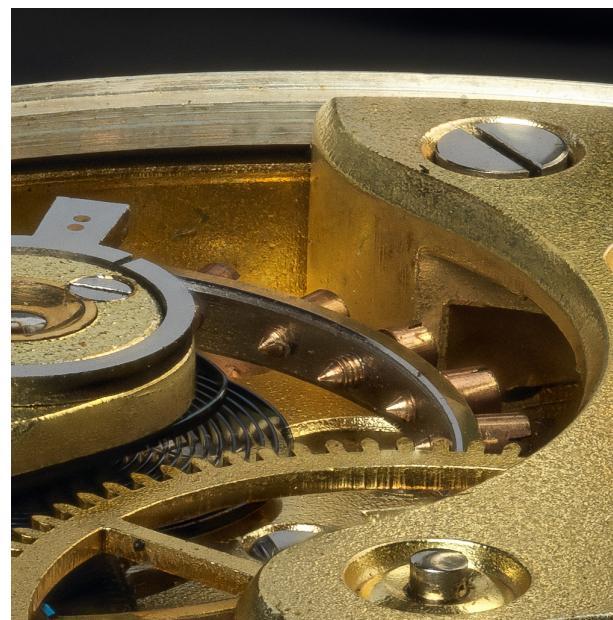
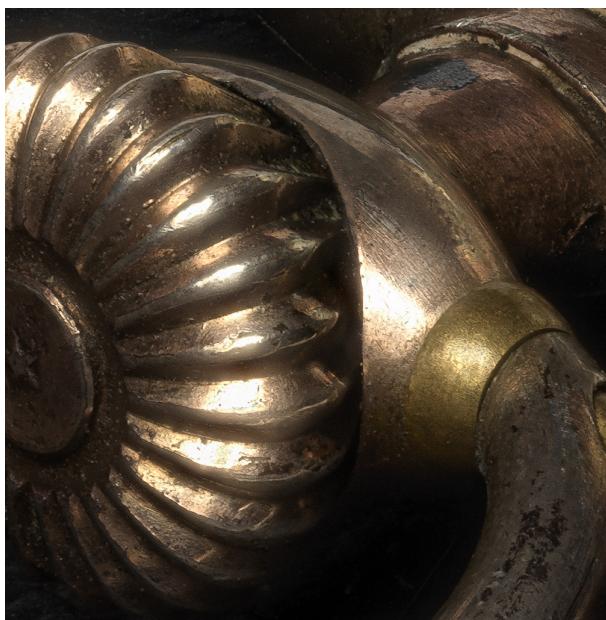
100% zoom-in. Sharpness set correctly.



Camera control tool



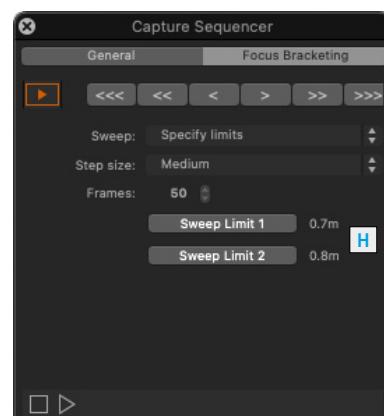
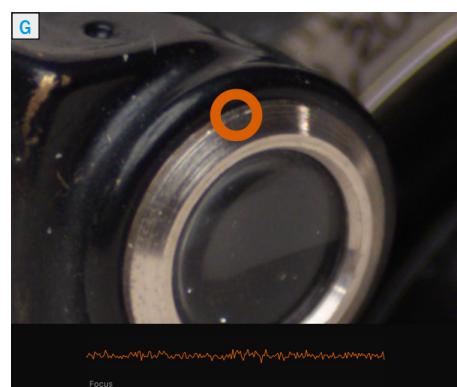
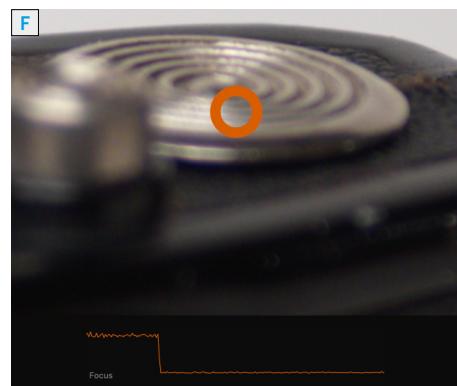
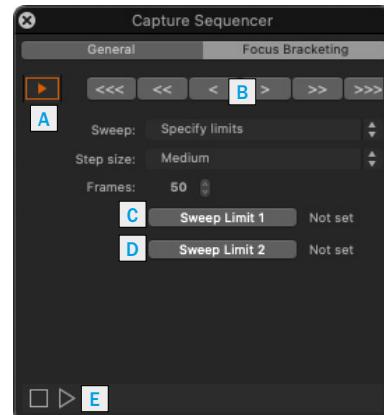
H6D 100c, HC Macro 120 II, f/8, Medium step size, 84 images, distance 50 cm. Stacking made in Helicon Focus using a combination of method A and C. Highlights were rendered in higher quality with method A and method C produced less overall artifacts.



Example using a X1D II 50C camera

The X1D II 50C was set up about 70 cm from the old camera. An XCD 90 lens was used and aperture f/6,8 was selected.

1. Select **Specify Limits** as sweep method.
2. Press the Live View button **A**
3. Use the Phocus zoom tool to zoom in on the furthest or closest point. This example uses the furthest point. The viewer in Phocus will look something like illustration **F**.
4. Use the focus controls **B** to adjust focus on the furthest point as shown in illustration **F**. Arrows pointing left focuses toward the close range. A button with three arrows makes a larger focus adjustment than a button with one arrow.
5. Press the **Sweep Limit 2** button. An approximate distance value is shown to the right of the button **H**.
6. Zoom in to the closest point and focus as in illustration **G**.
7. Press the **Sweep Limit 1** button. An approximate distance value is shown to the right of the button **H**.
8. Turn off Live View by clicking the Live View button again. This is not necessary but reduces heat build-up in the sensor.
9. Start the sequence by pressing the Start button **E**.
10. Analyze the captured images and if required make necessary adjustments. Make sure all images are adjusted equally.
11. Select all images and export them to Tiff or Jpg.
12. Import the images to the software used for focus stacking and make the final composite. Depending on software there are different methods to stack images. Use all available methods to see which will produce the best result. You may have to combine parts from different methods to achieve the best result possible as different algorithms have different strengths and weaknesses.



The resulting image is shown on the next page.



X1D II 50C, XCD 90, f/6,8, Medium step size, 21 images, distance 50 cm. Stacking made in Helicon Focus using method C.



Menu

As well as the operating system requirements, the Menu contains several Phocus-specific items: Image, View, Window (all listing several keyboard shortcuts) and Help.



Photo: Dmitry Ageev

Macintosh	
⌘ = Command	
⌥ = Alt	
⌃ = Control	
⇧ = Shift	
Windows	
⇪ = Shift	
MAC	WIN
⌘+, (see under File)	
⌘+H	
⌘+Q (see under File)	
⌘+N	Ctrl+N
⌘+W	Alt+F4
⌘+S	Ctrl+S
⌃+⌘+S	Ctrl+⇪+E
⇪+⌘+I	Ctrl+I
⇪+⌘+M	Ctrl+M
⌘+P	Ctrl+P
(see under Phocus) ⌘+F, then R	
(see under Phocus) Alt+F4	
⌘+⌫	⇪+Del
⌫	Del
⌘+Z	Ctrl+Z
⇪+⌘+Z	Ctrl+Y
⌘+X	Ctrl+X
⌘+C	Ctrl+C

Menu Shortcuts

Phocus

Preferences

Hide Phocus: Hides the application.

Quit Phocus: Closes the application.

File

Capture: Triggers a tethered camera.

Close: Closes the active window. Also closes application (Win only).

Export: Exports the current image.

Export as Previous: Exports the current file with the same settings as the preceding file, thereby avoiding the export dialog.

Import: Imports the selected file.

Modify: Accesses the Modify dialog.

Print: Accesses print dialog.

Preferences: Opens the Preferences menu (English operative system only).

Exit: Closes the application

Force Delete

Delete

Edit

Undo

Redo

Cut

Copy

⌘+V	Ctrl+V
	Ctrl+F
⌘+A	Ctrl+A
⇧+⌘+A	Ctrl+⇧+A
⌘+B	Ctrl+B
	⌘+D
⌫+⌘+S	Ctrl+⌫+S
	⌫+⌘+R
⇧+⌘+U	Ctrl+⇧+U
	⌫+⌘+M
	Alt+⌫+L
	Alt+⇧+L
⌫+⌘+G	Ctrl+G
⌃+⌘+G	Ctrl+⌃+G
	⌫+⌘+O
⌃+⌘+O	Ctrl+⌃+O
	⌃+⇧+⌘+S
	Ctrl+D
⌃+⌘+H	Ctrl+H
	⌃+⌘+W
	Ctrl+W

Paste

Find

Select All

Deselect All

Image

Add/Remove from Quick Collection: Affects selected images in the Thumbnail Browser.

Remove Crop: Reverts image back to original content.

Save Adjustments: Saves any adjustments made to currently selected image. Adds adjustment icon to lower right of title bar below thumbnail.

Reload Adjustments: Reloads previous adjustments.

Use Last Saved Adjustments: Reloads the Adjustment Preset present when the image was opened in the Viewer. Same function as Reload button.

Map: Opens ‘Google Earth’ when online, to reveal selected capture’s location. Requires the use of the Hasselblad GIL or X1D GPS accessory at time of capture.

Slideshow: Allows selected thumbnails to appear as slideshow.

View

Grid: Applies a grid pattern on top of the image in the Viewer.

Grid Options: Opens a dialog to allow adjustments to the number of lines that make up the grid as well as their color.

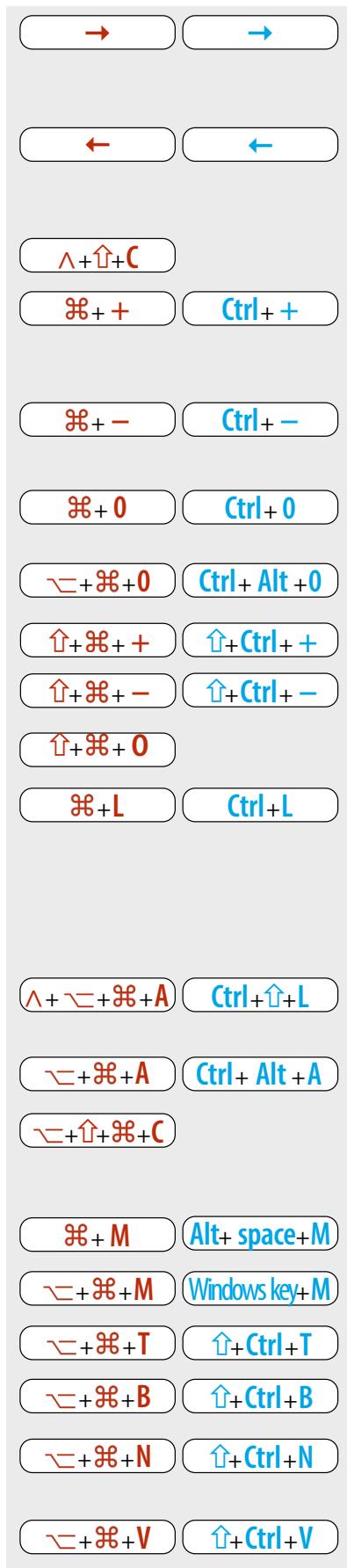
Overlay: Overlays a selected file on top of image in Viewer.

Overlay Options: Opens a dialog to allow opacity and scale adjustments to overlay file. Also prompts selection of overlay file.

Shadow Warning: Marks areas of the image in the Viewer that are rated as underexposed. These areas appear as light magenta (default) and cover the affected areas of image below. Also accessible on Viewer Toolbar as Mark underexposed.

Highlight Warning: Marks areas of the image in the Viewer that are rated as overexposed. These areas appear as light cyan (default) and cover the affected areas of image below. Also accessible on Viewer Toolbar as Mark overexposed.

Warning options: Opens a dialog to allow threshold adjustments to Shadow Warning and Highlight Warning.



Next Image: Displays the capture to the right (in Landscape mode) of the selected image in the *Thumbnail Browser*, replacing the current image in the *Viewer*. Also accessible on *Viewer Toolbar*.

Previous Image: Displays the capture to the left (in Landscape mode) of the selected image in the *Thumbnail Browser*, replacing the current image in the *Viewer*. Also accessible on *Viewer Toolbar*.

Compare Image

Zoom In: Doubles the image size in the *Viewer* by 100% increments (50% → 100% → 200% etc). (*Zoom tool* on *Viewer Toolbar* produces a 100% enlargement directly).

Zoom Out: Reduces an enlarged image in the *Viewer* in 100% increments (200% → 100% → 50% etc).

Fit to Window: Chooses the appropriate size of image to fit in *Viewer area* (By default, the image size is adjusted to fit the *Viewer area*.)

Zoom to 100%: Enlarges image to 100% regardless of current *Viewer area*.

Larger Thumbnails

Smaller Thumbnails

Fit Thumbnails

Live Video: Produces a continually updated image in the *Viewer*. Functions only with tethered operation in studio-like environments.

(⌘ + +/− (tool))	(Ctrl + +/− (tool))	Fine focus-adjustment
(Alt + +/− (tool))	(Alt + +/− (tool))	Large focus-adjustment

Live Video Audio Feedback: Produces an audio tone that notifies the accuracy of the lens focus setting.

Adjustment Mode (Video): Activates visual adjustments of a RAW video clip.

Show New Captures in Viewer

Window

Minimize: Collapses current window to the dock.

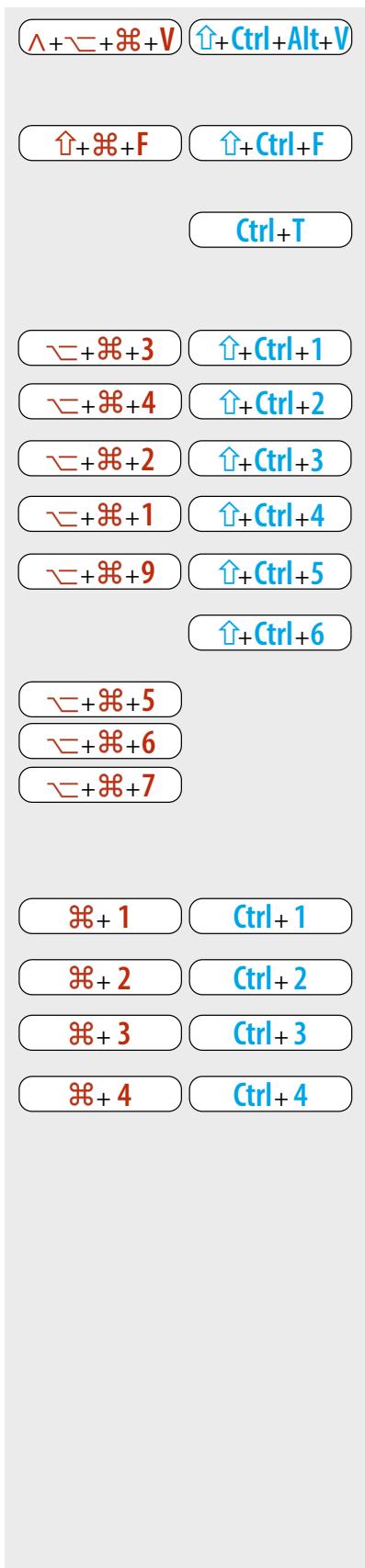
Minimize All: Collapses all windows.

Hide/Show Tools: Shows/hides Tool Area. Toggle function.

Hide/Show Browser: Shows/hides File Browser. Toggle function.

Hide/Show Thumbnails: Shows/hides Thumbnail Browser and fills area with an expanded *Viewer*. Toggle function.

Hide/Show Viewer: Shows/hides *Viewer* and fills area with an expanded *Thumbnail Browser*. Toggle function.



Viewer in Separate Window: Creates a separate Viewer window complete with Viewer Toolbar. Replaces Viewer area with the Thumbnail Browser only. Toggle function.

Full Screen Viewer: Fills whole screen area with Viewer complete with Viewer Toolbar. Toggle function.

Toggle Portrait/Landscape

Layout: Choose between:

- ⊖+⌘+3
- ⊕+Ctrl+1
- ⊖+⌘+4
- ⊕+Ctrl+2
- ⊖+⌘+2
- ⊕+Ctrl+3
- ⊖+⌘+1
- ⊕+Ctrl+4
- ⊖+⌘+9
- ⊕+Ctrl+5
- ⊕+Ctrl+6
- ⊖+⌘+5
- ⊖+⌘+6
- ⊖+⌘+7
- Standard
- Browse
- Viewer
- Thumbnails only
- Light Mode
- Standard Mode
- Camera
- Card
- Tethered

Tip

Layout shortcuts can be reassigned to existing or newly created versions.

See under: Toolbar > Layouts > Edit (or Menu > Window > Layout > Edit).

Tool Set: Choose between:

- ⌘+1
- Ctrl+1
- ⌘+2
- Ctrl+2
- ⌘+3
- Ctrl+3
- ⌘+4
- Ctrl+4
- Capture
- Browse
- Adjust
- Export

Bring All to Front: Brings **Phocus** and **Viewer** to the front if covered by other applications.

Shortcuts not in Menu

b / b	Select Adjustment Layers Brush tool
c / c	Crop tool
d / d	Dust removal tool
e / e	Select Adjustment Layers Radial Gradient tool
g / g	Select Adjustment Layers Gradient tool
h / h	Hand tool
i / i	Color picker tool
l / l	Loupe (Navigator tool)
n / n	Neutralization tool
r / r	Straighten tool
w / w	Compare view
y / y	Toggle visualization of selected adjustment layer

z / z

Zoom tool

Option + drag / Alt + drag

Drag overlay

F5 / F5

Single-shot capture

F6 / F6

Multi-shot capture

Appendix

- Camera Configurator
- Integration of Eizo self-calibration displays
- Closed Loop Color Calibration
- Keyboard shortcuts
- FAQ
- Index



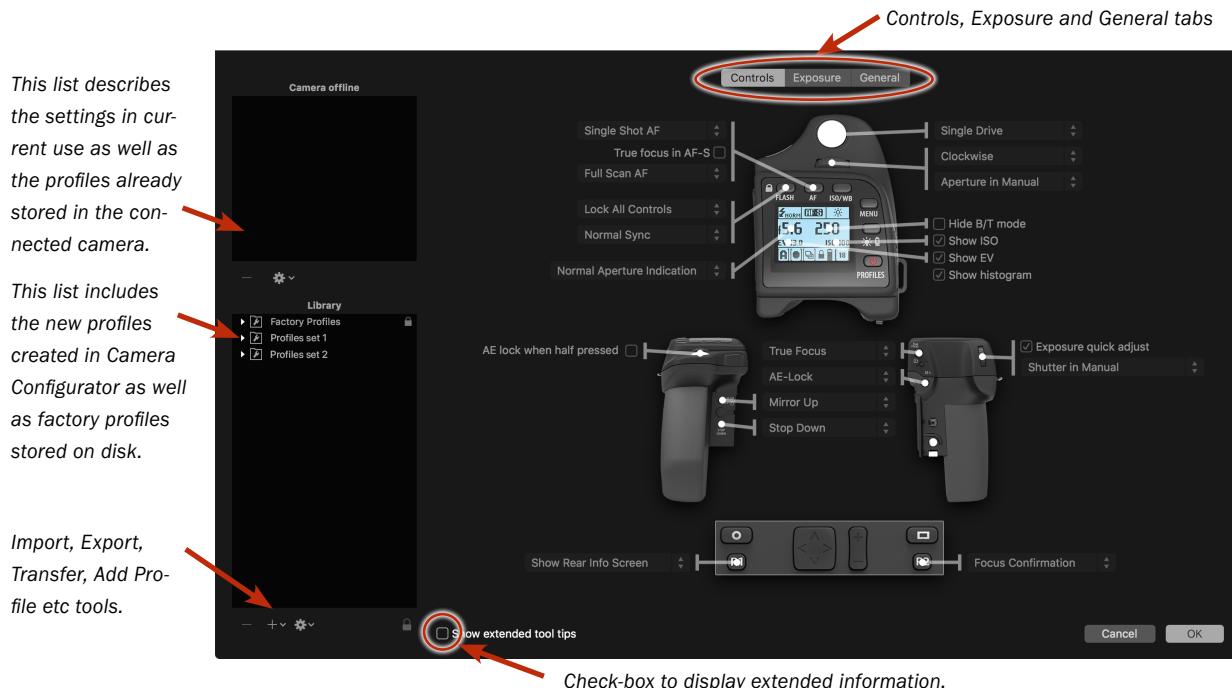
Photo: Bara Prasilova

Camera Configuration - H5D only

The Camera Configuration tool in Phocus offers a very thorough and secure way of creating comprehensive profiles for the H5D. There are three windows – Controls, Exposure and General – that present virtually all parameters to enable total control at the press of a button. This means that separate and specific custom profiles created in advance can cover a number of shooting scenarios leaving virtually nothing to chance. In addition these profiles can be easily imported and exported. For instance, you can create a special profile to suit a specific type of shoot and keep it on a memory stick or laptop. So, when renting an H5D for example, you only have to upload the saved profile to ensure that all parameters have been reset without you having to go through each detail – simple and secure.

The interface has three tabs at the top, Controls, Exposure and General, that access the windows. Descriptive information appears as you mouse over the various menus and extra tool tips are additionally available as an option. To take an example, the Controls window is illustrated here. On the left are two lists: Camera and Library. The Camera list includes the various available configuration profiles already stored in the camera – the profile currently in use as well as the default settings and those you have created or imported from other sources. Library contains the factory presets stored on disk.

The Camera Configuration interface makes it easy to go through the parameters logically and systematically to prevent you missing important settings.



creating a profile

1. Open Camera Configuration located under the Windows menu.
2. Connect the camera and in the Camera list click on a profile you want to change or a spare profile and name it.
3. Cycle through the three windows, Controls, Exposure and General, making the appropriate selections that you require. When complete, select the new profile and drag and drop or right click it to store in the Library.
4. Right click the Library version of the profile to access the Transfer Profile Set to Camera option then click on OK to complete the action. This causes the new profile to appear on the grip display for selection when you click on the Profiles button.

Right click a profile in Library to access the Rename, Reset to Standard, Delete and Export options if required. Import, Export, Transfer, Add Profile etc tools are also available.

Integration of self-calibrating Eizo displays

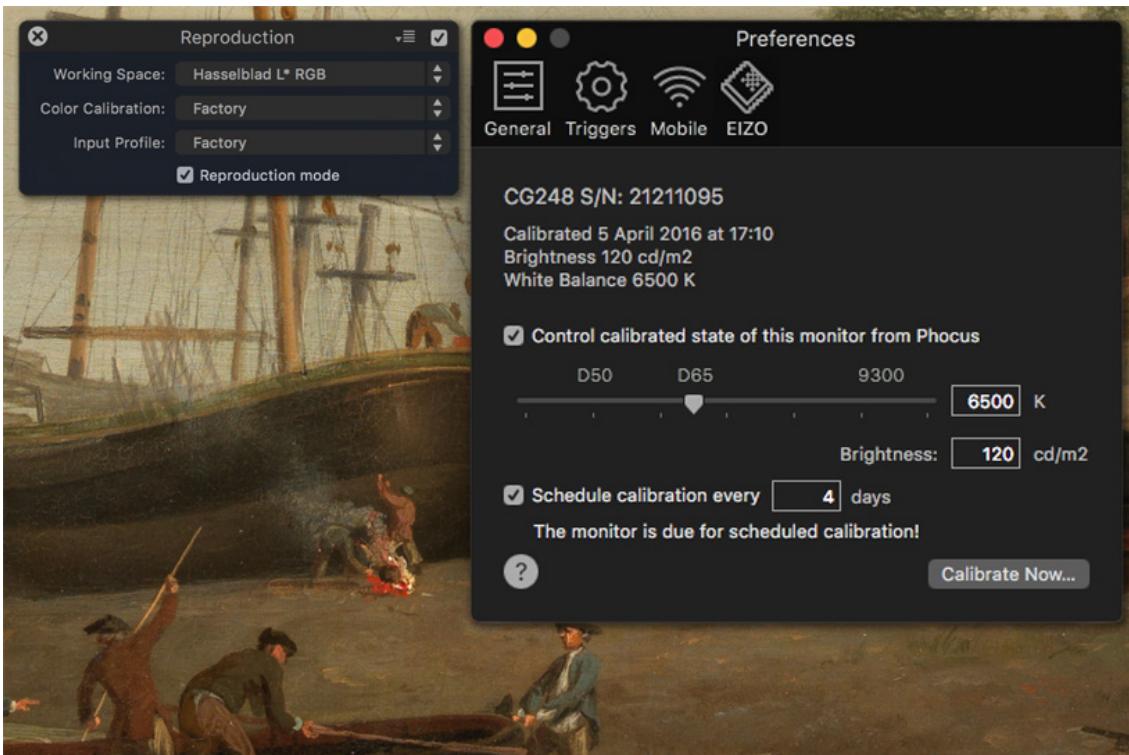
Calibration of Eizo displays like the CG318-4K, CG248-4K, CG277 and the CG247 can now be handled directly from Phocus. This ensures that the display is setup to provide the best possible results for the viewing of Hasselblad images.

Once an eligible monitor is connected Phocus will show a dialog asking whether you want to handle calibration. If you choose to do this you will be guided to an extra Eizo tab in the Preferences window where it's possible to setup calibration options and start the actual calibration. This preference tab will also let you toggle whether Phocus should handle calibration or not.

It should be noted that it's not currently possible for us to integrate with calibrations made by Eizo's own **ColorNavigator** software. Therefore once you've made a calibration using Phocus launching ColorNavigator will switch the display back to the last calibration made by itself. When you switch back to running Phocus you will be prompted about this change and will get the opportunity to restore the calibration made by Phocus or alternatively stop handling the calibration from Phocus. In fact just running the ColorNavigator Agent will interfere so we recommend that you switch off that option in the ColorNavigator preferences dialog.

The calibration target chosen by Phocus will of course be optimized to work with our Hasselblad RGB and Hasselblad L* RGB working spaces but it should be noted that the resulting calibration will also work well even if using a somewhat smaller working space like Adobe RGB in Photoshop. However if you routinely view images in much smaller working spaces like sRGB you should make a special calibration for this purpose using the Eizo Color Navigator software.

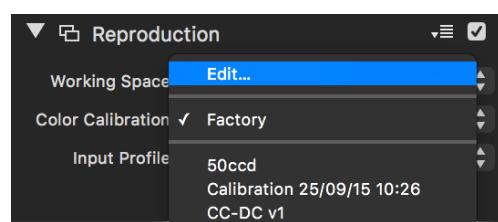
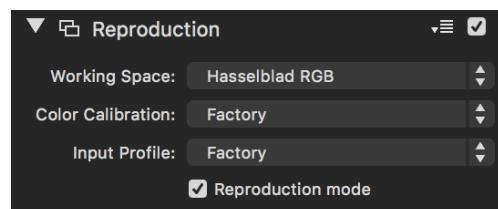
Checking the "Schedule calibration every [N] days" option and filling out the desired calibration interval ensures that you will be reminded about the need for display calibration.



Integrated Color Calibration

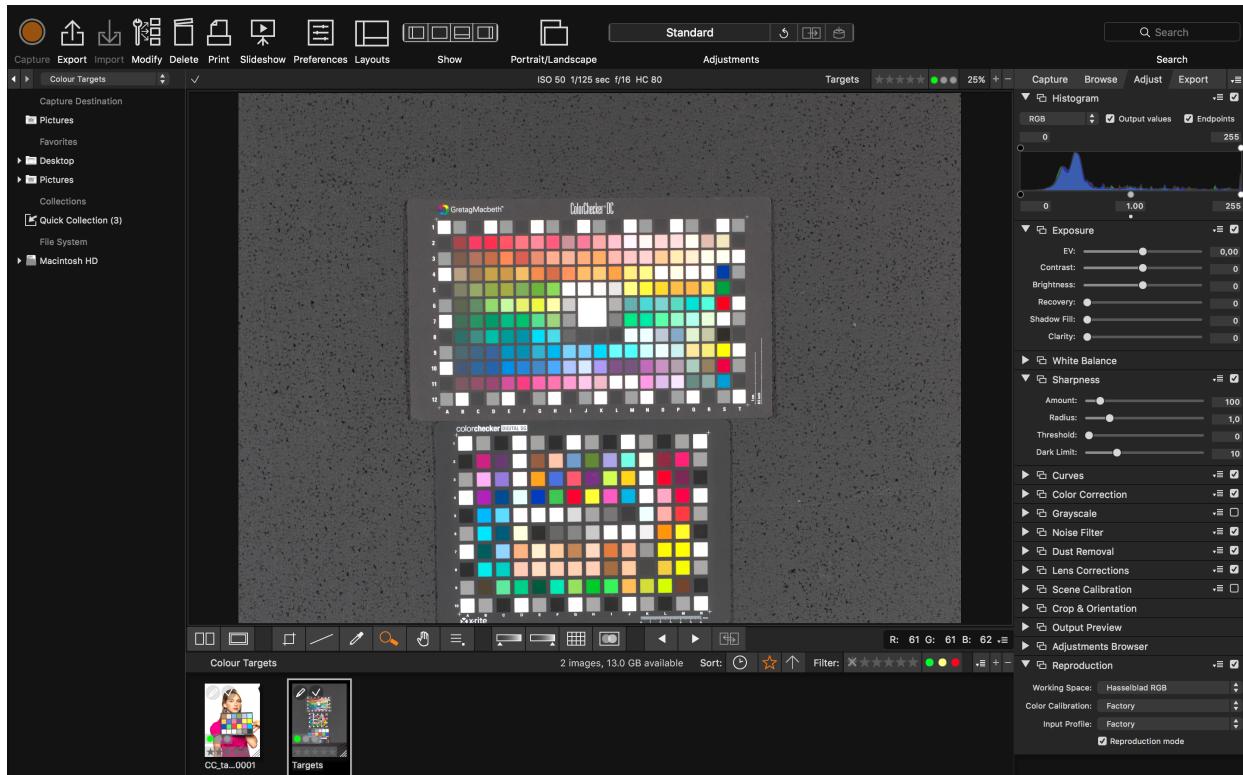
In the Reproduction tool a new Color Calibration popup menu has been added. By default this will say Factory, which corresponds to the same default color handling used by previous releases of Phocus. In this menu you can select the Edit option in order to bring up the Color Calibrations dialog. Note that this dialog can also be opened via the Window menu where it has the keyboard short-cut option-cmd-C.

In order to add a new calibration make sure that a suitable image containing a color reference chart is shown in the viewer before opening the Color Calibrations dialog.



If you have no existing custom calibrations the dialog will move directly on to the calibration interface. Otherwise use the + button on the left (keyboard short cut is +). In the calibration interface you will see the selected image together with an overlay reflecting the type of color target selected.

1) Select target type



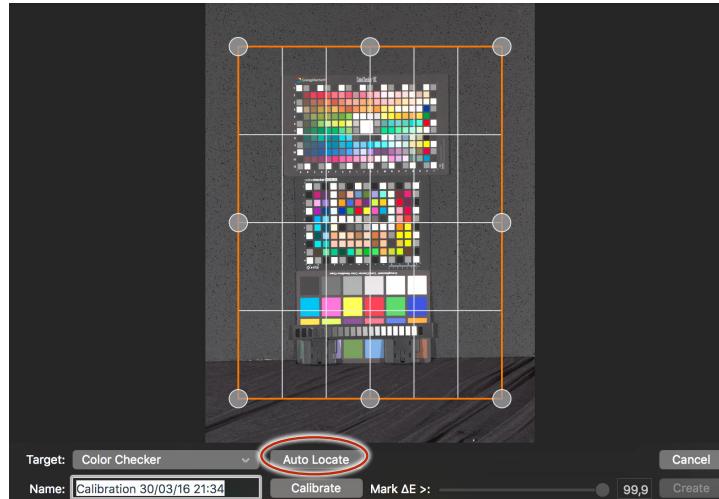
Out of the box we currently support ColorChecker, ColorChecker SG and ColorChecker DC targets. You can also use the + button to add your own target references.

2) Align target location

While you can make a manual adjustment of the overlay indicating target position, normally you will just have to press the Auto Locate button and your target will be automatically located.

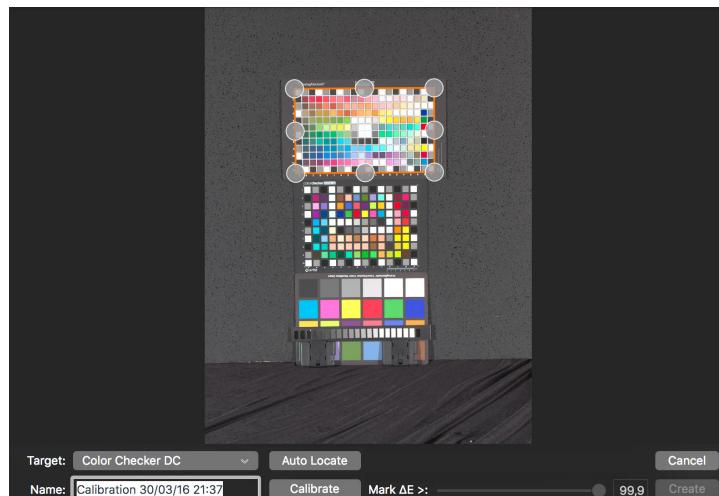
3) Calibrate

Press Calibrate to perform the actual calibration. If this is successful you will get basic ΔE statistics (CIEDE2000). Using the Mark $\Delta E >$ slider you will get feedback in the image showing patches that deviate by more than the selected ΔE value.



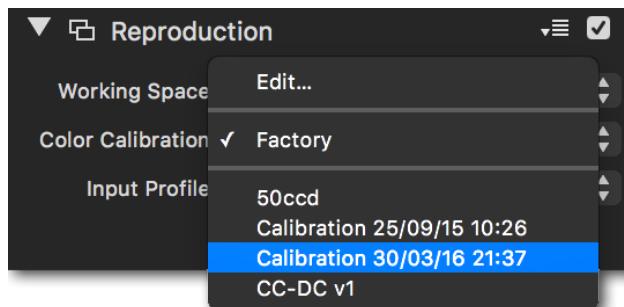
4) Create the calibration

Once you're happy with the calibration result the actual calibration is stored by clicking the Create button and you will return to the base interface of the Color Calibrations dialog showing you the list of existing calibrations. Here you will also be able to enter a text description of each calibration.



5) Using the calibration

To use the new custom color calibration, select it in the Color calibration pop up menu in the reproduction tool. The calibration itself will be embedded in the 3F file along with the other adjustment settings so there is no need to move the stored calibrations between host computers. If you view an image containing a color calibration that is not already stored locally it will be automatically copied to the computer.



Phocus Mobile 1

Phocus Mobile 1 is an iOS app that allows you to remotely control and view images from your camera. It can be used with H5D with Wi-Fi, H6D and X1D cameras. For X1D II 50C, CFV II 50C and 907X, **Phocus Mobile 2** must be used. See 113.

Preparations

If you haven't already, download Phocus Mobile from the App Store free of charge.

Check the settings in Phocus as described on page 69.

Connection

Phocus Mobile can connect either directly to a Wi-Fi capable camera or to a Mac or PC running Phocus.

Tethered mode

On the Phocus Mobile client, connect to the same Wi-Fi network as the computer.

Start the Phocus Mobile app. You will then see all available Phocus hosts on this network **1**. Tap your computer name to connect.

The list of hosts will include what can be found in the local network. It's possible to manually add hosts located anywhere on the internet. Tap the + button and fill out:

- Name: This will be shown in the list of hosts
- Address: Can be a direct ip address or a name that can be resolved via DNS
- Port: The port number configured on the host. Note that you need to make sure that this port is not blocked by a firewall.
- Type: Whether the host is a camera or a computer

After this has been saved, then manually added hosts will be shown in a separate section of the host list.

Untethered mode

This requires a Hasselblad camera with built-in Wi-Fi. E.g. H5D-50c, H6D-100c or X1D-50c. In this mode, the camera will create the Wi-Fi network that the Phocus Mobile client shall be connected to. Activate Wi-Fi on your camera. See the camera Users Guide for details.

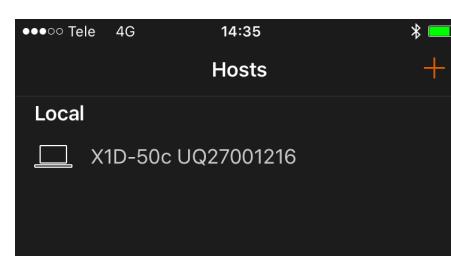
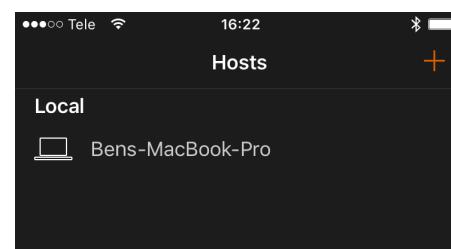
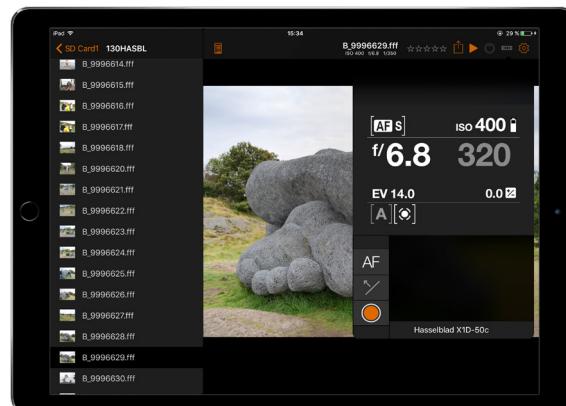
Connect the Phocus Mobile client to the network generated by the camera. The SSID is the serial number of the camera. No password is used.

When you start Phocus Mobile, you will see your camera as the host **2**. Tap on it to connect.

Phocus Mobile on iPhone



Phocus Mobile on iPad



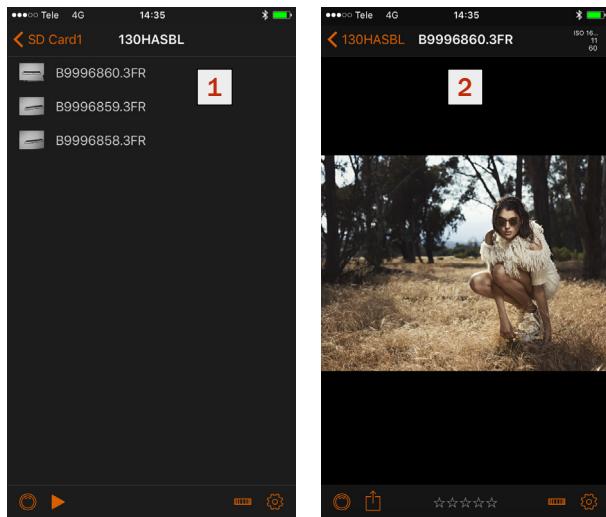
Browsing images

After Phocus Mobile has connected to the camera, you will see a list of images **1**. If you are in tethered mode, the images are located on your computer and in untethered mode, on your camera.

Note that you can browse images on your computer even when a camera is not connected.

Tap on any file to view the image **2**. Browse through the available images by swiping on the screen. Images can be viewed either in portrait or landscape orientation.

If "Folder Navigation" in the settings is set to On, you can navigate up and down in the folder structure. Settings are explained on page 109.



Rating images

By tapping the 5-star icon at the bottom of the screen, you can rate the current image.

Zooming

You can zoom in **3** to the images in the same way as for other images on your device. Either you double-tap on the screen to go to 100% or you use gestures like pinch to zoom in or out.



Sharing images

Please note that no images are stored on your device. If you want to share an image, tap the icon **A**. This will bring up the sharing options on your device. For details how to use this, please consult the User Guide for your device.

Note that you will only be sharing a low resolution copy of the image.



Settings

To show the Settings Screen, click the  icon A.

The Settings Screen contains the following options:



Follow Captures

If you make a capture from the camera or the Phocus Mobile client, it will be shown on the device screen.

Follow Browsing

If you browse images on the host (camera or computer), the same images will be shown on the the Phocus Mobile client. If not, you will always be viewing the contents of the currently active folder.

Folder Navigation

If this option is set to On, you can browse the folder structure on the host to view images in different folders.

Remember Passwords

If you have entered a password on your computer for Phocus Mobile clients, this will be remembered in the app.

Use Legacy Control Panel

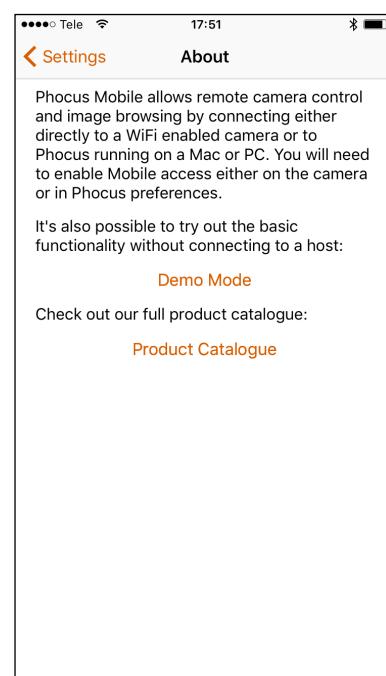
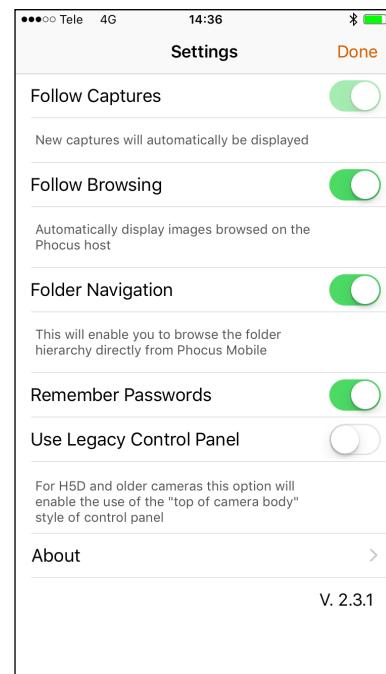
The Phocus Mobile client will use a H5D-style Camera Control Panel.

About

Contains a simple description and two options:

Demo Mode: Allows you to test the app with demo images without having a connected camera.

Product Catalogue: A link to the Hasselblad app that is an interactive Product Catalogue for iPad only.



Camera Control

When you have a connected camera, you can click the  icon A to bring up the Camera Control Panel.

The Camera Control Panel has the following parts and controls:

1. Area for Histogram preview
2. Area for image preview
3. Focus mode
4. ISO setting
5. Battery status indication
6. Aperture
7. Shutter speed
8. Exposure mode
9. Light metering mode
10. Exposure adjustment
11. Perform AF
12. Pre-release mirror
13. Expose
14. Connected camera type
15. Exit button



Change parameters

All settings can be changed by tapping the value. If the value is in grey color, this means that it must be changed from the camera or that it is not available with this camera model.

To change aperture, tap the aperture value and select a new value from the list 16. Tap the aperture value again to close selection. The other parameters are changed in the same way.

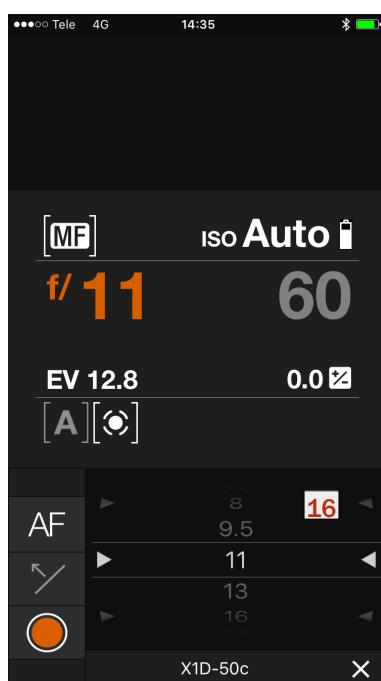
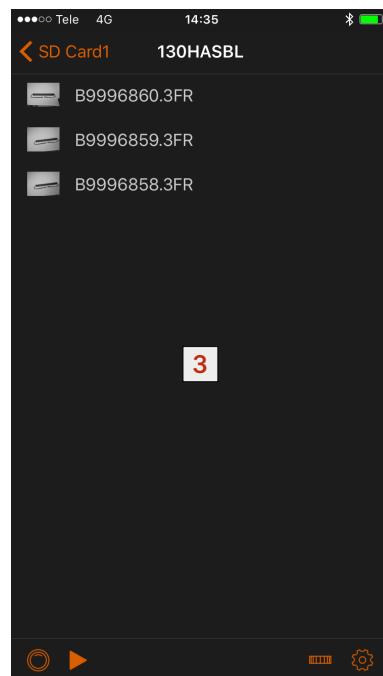
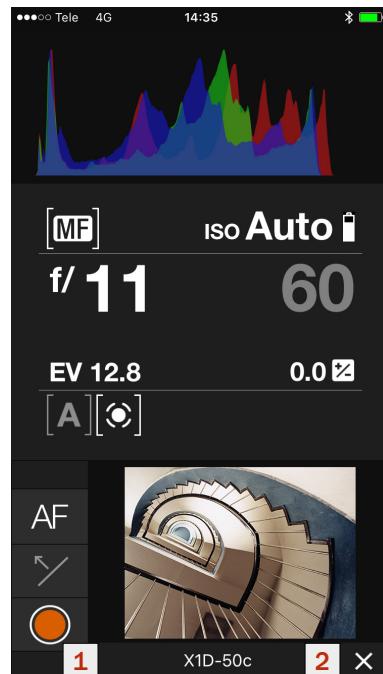


Image Capture

You can make a capture either from the camera, Phocus or the Phocus Mobile client. To make the capture from the Phocus Mobile Client, tap the Expose button **1**. A preview of the captured image will be shown together with a combined histogram. Note that the image will not be stored on the Phocus Mobile client.

To close the Camera Control Panel, tap the exit button **X 2** in the lower right corner. This will return to the screen showing the list of images in the currently selected folder **3**.



Live View

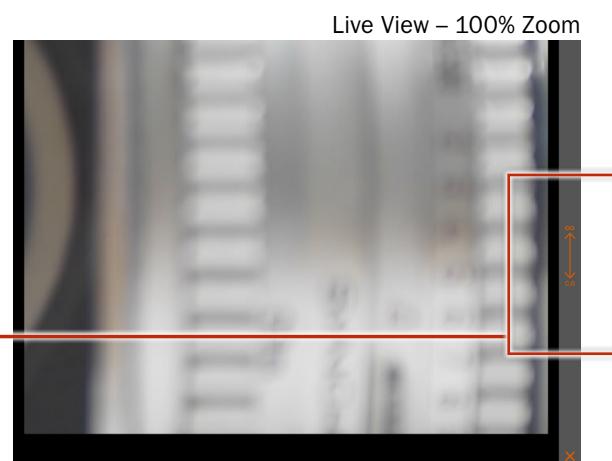
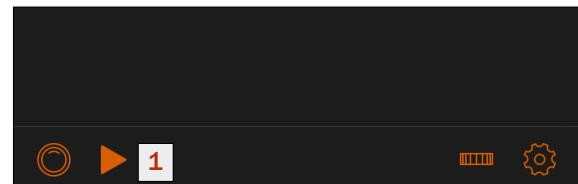
By tapping the Live View icon ► 1 at the bottom of the screen, the connected camera will enter Live View mode.

In Live View mode, you can check composition, lighting and focusing. Double-tap the image to zoom in to 100%

With all cameras, except the CFV-50c, focusing can be controlled by sliding up or down on the area to the right of the image. To focus toward infinity, start on the arrow and slide upwards. To focus toward the near limit, slide downwards. Remember to start the sliding movement on the arrow.

Note that you can control focusing both in 100% view and fit image view. However, 100% will provide much higher accuracy.

To return to the previous screen, tap the exit button 2 in the lower right corner.



Phocus Mobile 2 for iPad

Phocus Mobile 2 is the successor to the original **Phocus Mobile iOS** application adding a number of new features. Most importantly it adds support for both **USB** and **Wi-Fi** connectivity, will let you capture images directly to the **iOS** device and provides full quality image editing and export. It supports both **iPhone** (see more on page 135) and **iPad** but for the image editing functionality an **iPad Pro** or one of the most recent 2019 **iPad Air** models with more than 2GB RAM are required. The **X1D II 50C**, **CFV II 50C** and **907X** and future camera models can be used with **Phocus Mobile 2**. The original **Phocus Mobile 1** will still be required for the older cameras. For further details please refer to hasselblad.com/phocussmobile2.

The description on the following pages is made using an **iPad Pro**. **Phocus Mobile 2** is also abbreviated to PM2.

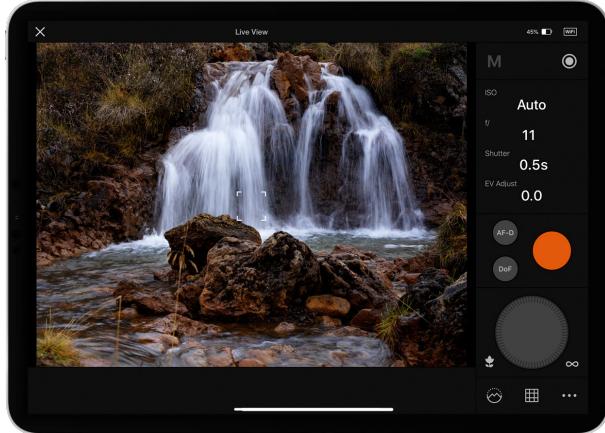
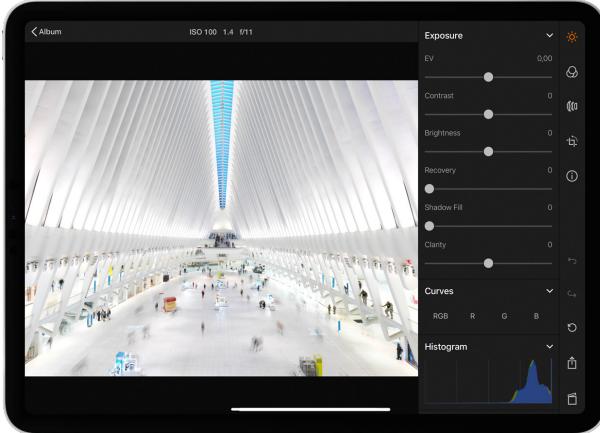
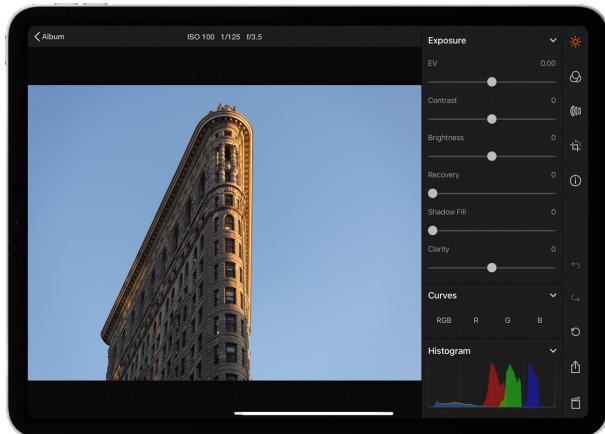
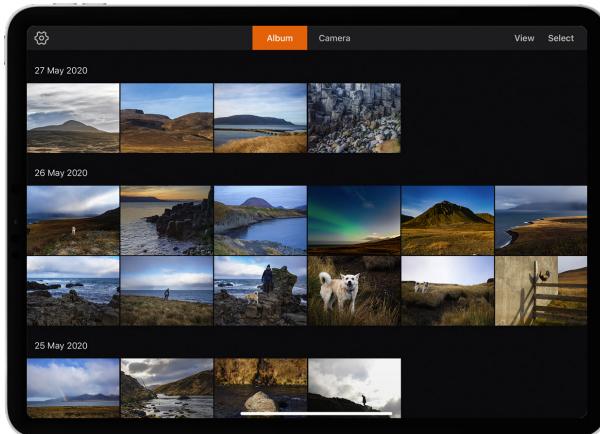
Note!

The **X1D II 50C**, **CFV II 50C** and **907X** cameras or newer are not compatible with the previous version of **Phocus Mobile 1**.



Note!

Remote control of image capture when using the **CFV II 50C** on a **V System camera** is available only with a **503CW** with winder, an **EL**-type camera (e.g. the **553ELX**) or when the electronic shutter is used.



Connect to an iPad Pro using USB

Tethered shooting via a **USB** cable is available with *iPad* Pro equipped with a **USB-C** port or when using a **Lightning to USB 3** adapter. A **USB-C to Lightning cable** will also work, but will only give **USB 2** speed.

Connect a **USB-C to C** cable from the camera to the *iPad* and start PM2.

Note!

Make sure the Tethering Mode is set to **iOS** when connecting to an *iPad* with a **USB** cable. See the settings section in the camera user manual.

When the camera is connected, a button **Remote 1** will appear.

Album view A

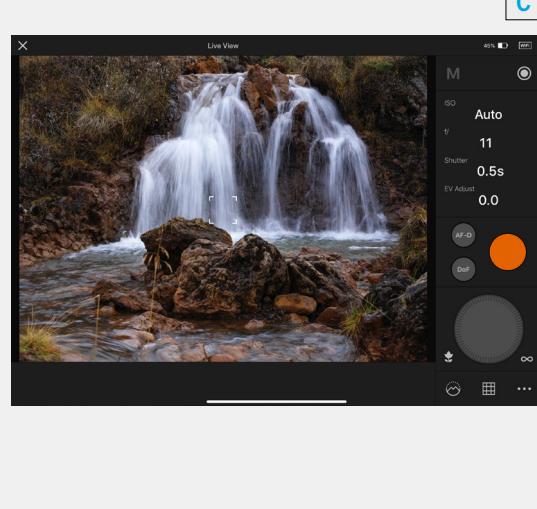
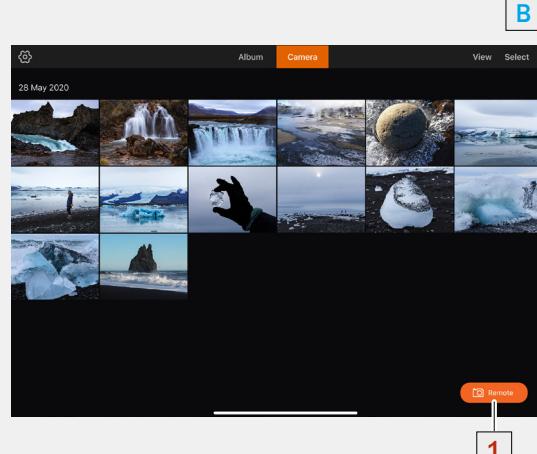
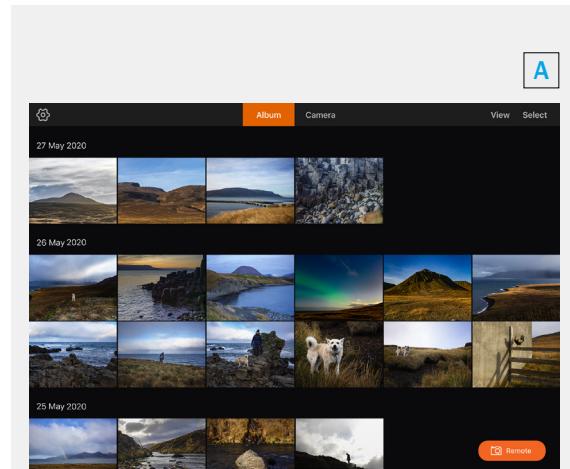
When **Album** is highlighted in the top bar, images stored locally on the iPad are shown. Tap one of the thumbnails to view a larger image.

Camera view B

Tap **Camera** in the top bar to show images on the active SD card in the camera.

Camera control C

Tap the **Remote** button **1** to show the camera control panel. See more on page 117.



Connect the Camera to an iPad Pro over Wi-Fi

The following assumes that PM2 is installed on a compatible **iPad** (iPad Pro or iPad Air 2019). It is available as a free download from the **Apple App Store**.

Two methods are available to connect the **iPad** to the camera.

Bluetooth assisted Wi-Fi connection

Make sure that **Bluetooth** is activated on the **iPad**.

Start PM2 on the **iPad**.

Start the camera and activate Wi-Fi **A**

In PM2, go to the Camera Tab **B**.

PM2 starts to search for cameras. When finished, a list of available cameras will be shown **C**.

Select your camera from the list.

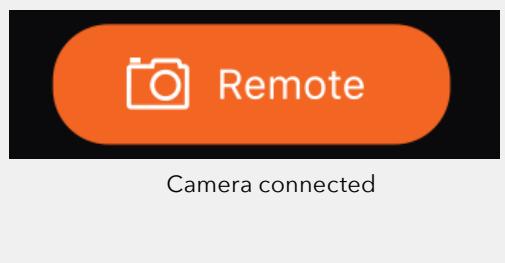
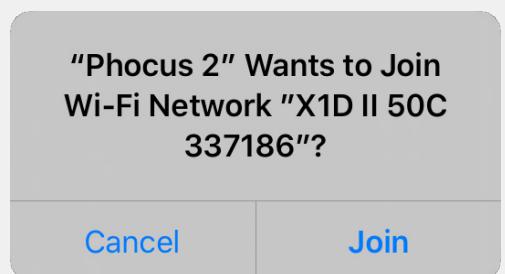
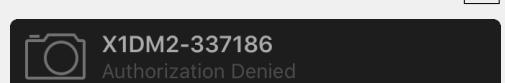
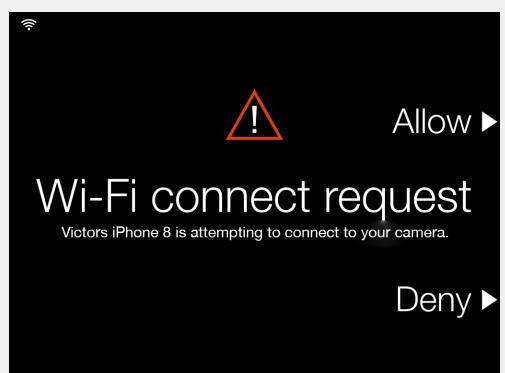
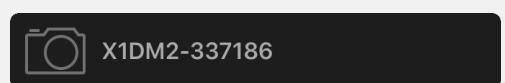
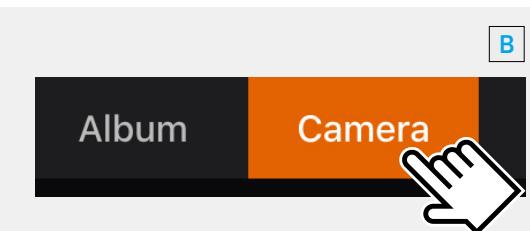
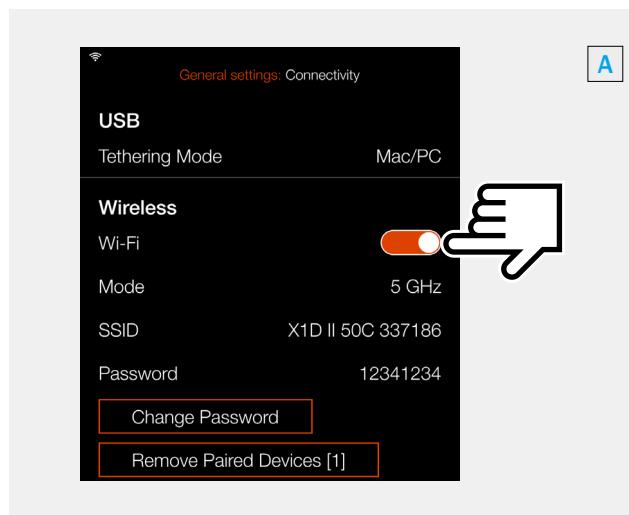
If this is the first time the camera is connected to this **iPad**, the camera will show the dialogue **D** asking you to confirm the connection. Press the **Rectangle Button** (□) to confirm the connection. If you want to deny the connection request, press the **Cross Button** (×). The **iPad** will then show the dialogue **E**.

If you confirm the connection request, the camera will automatically send the Wi-Fi password (shown in the Connectivity menu) to the **iPad**. To confirm this connection, you will have to tap Join in the dialogue **F** that appears on the **iPad**.

When the connection is established, the **Remote** button will appear in the lower right corner **G**.

Note!

This process is simplified when a camera has been previously connected to this iPad. Then only steps **A**, **B** and **F** are required.

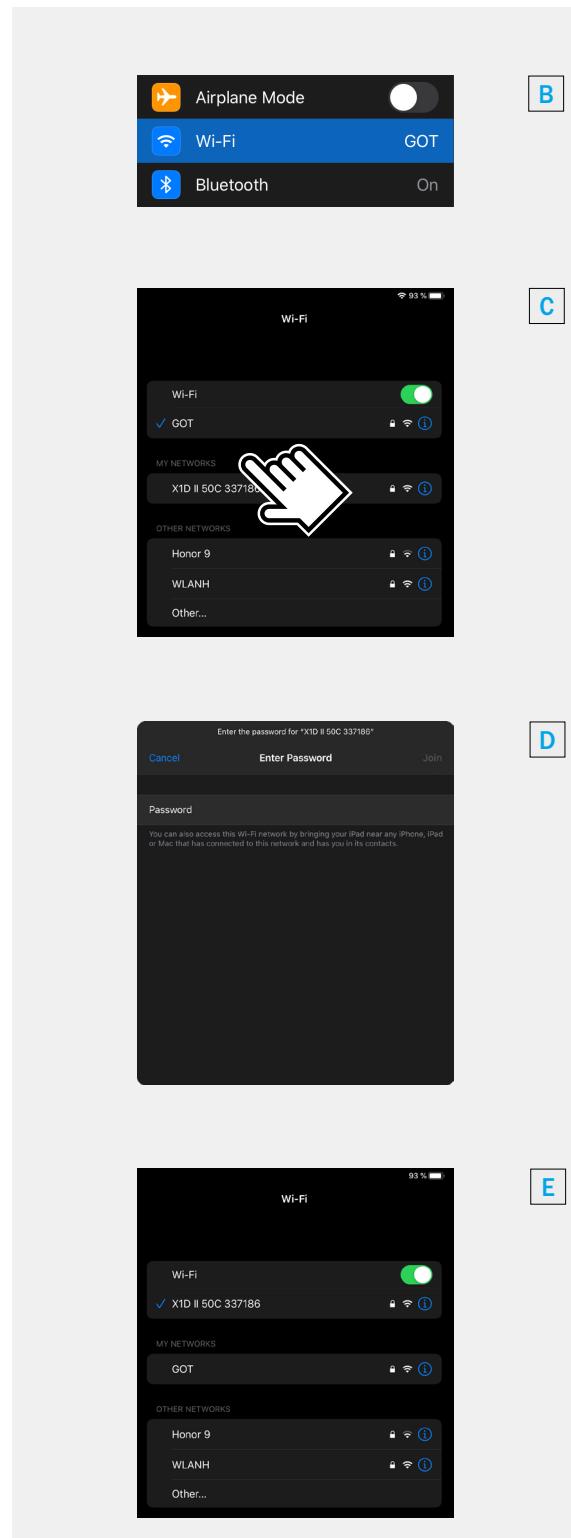
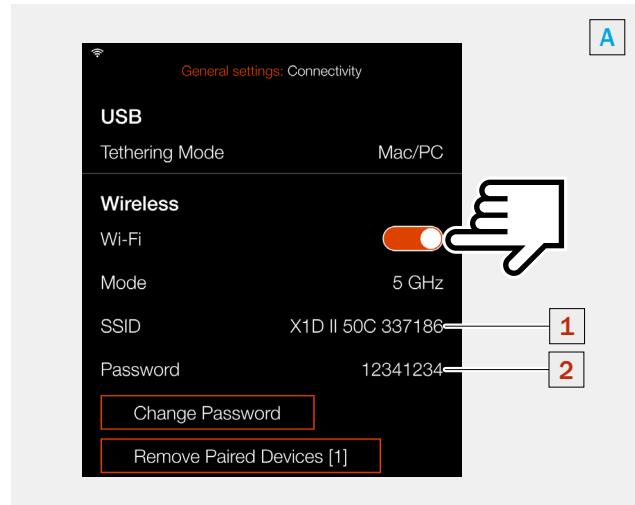


Manual Wi-Fi connection

1. Start the camera and activate Wi-Fi **A**. The camera will now create a Wi-Fi network with the same name as the **SSID 1**.
2. Enter the settings on the **iPad** by tapping the Settings Icon.
3. In the iPad settings dialogue, tap **Wi-Fi B**.
4. In the list **My Networks** or **Other Networks** you will find the camera network. Tap on it to connect **C**.
5. If the camera has not previously been connected to this **iPad**, a password dialogue will appear on the **iPad D**.
6. Enter the camera password **2**.
7. When the camera network is shown directly under **Wi-Fi E** a connection is established.
8. Start PM2 on the **iPad**.

Note!

The camera can only be connected to one device at time. If you want to connect the camera to second device, please make sure that PM2 is not running on the first device.



Camera Control – Remote capture

When the camera connected is established, click the button A to bring up the Camera Control Panel. Tap upper left cross 1 to remove the control panel.

The Camera Control Panel has the following controls and indications:



1. Close camera control window.
2. Camera battery status.
3. Connection type (Wi-Fi/USB).
4. Camera exposure mode.
5. Camera light metering mode.
6. ISO setting.
7. Aperture.
8. Shutter speed.
9. Exposure adjustment setting.
10. AF drive button. Page 119.
11. Depth-of-field preview button. Page 119
12. Shutter release button. Page 119.
13. Focusing control. Page 119.
14. Activate focus peaking overlay. Page 119 and 120.
15. Activate grid overlay. Page 119.
16. Show additional settings. Page 122.
17. Live view/Preview window. Page 119, 120 and 122.

Settings on the Control Panel

Tap on any of the settings to change.

As an example, ISO is changed as follows:

1. Tap the ISO value **A**.
2. This brings up a selection list **B**. Scroll this list **C** and select a new value. To accept the new value, tap the value again.

The other settings **aperture**, **shutter speed** and **exposure adjustment** are changed in the same way.

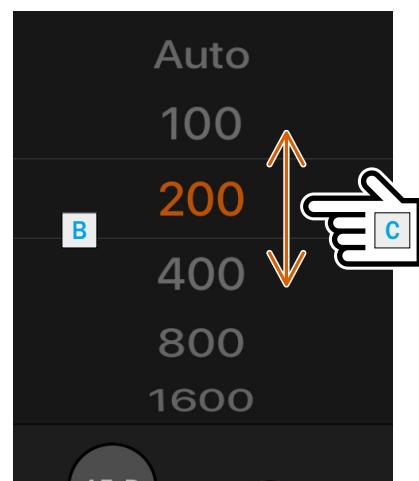
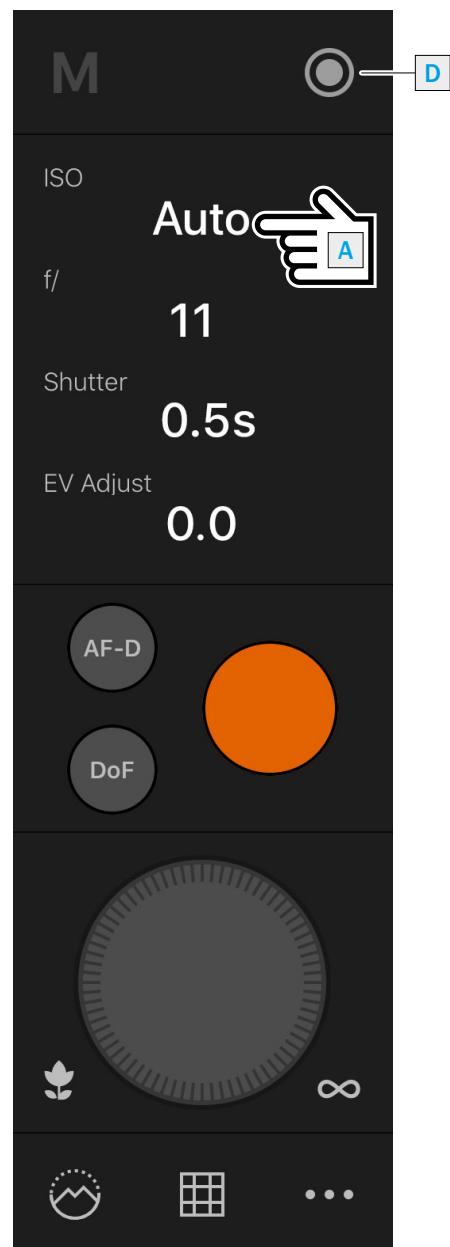
Note!

When changing light metering mode **D**, tap the light metering icon again to accept the new value.

Note!

A parameter shown in grey color cannot be changed from the control panel.

Continued on the next page.



Start Live View

Live View is started automatically when the remote control screen is activated.

Perform an AF operation

With the **X1D II 50c** and the **907x+CFV II 50C**, the camera will perform an AF operation to search for focus when you tap the **AF-D** button **A**.

Preview Depth-of-field

Tap the **DoF** button **B** to stop down the aperture for a preview of the actual depth-of-field. Tap again to open the aperture.

Release the camera

When the shutter release button **C** is orange, you can release the camera by tapping it. Note that the camera will release even if the lens is not focused.

Focusing

When live view is active, you can focus the lens by turning the focusing dial **D**. A clockwise rotation focuses toward infinity. You can double-tap the viewer to zoom in for extremely precise focusing.

You can also change focusing in small increments by tapping the infinity icon **E** or the close-range icon **F**.

Focus Peaking

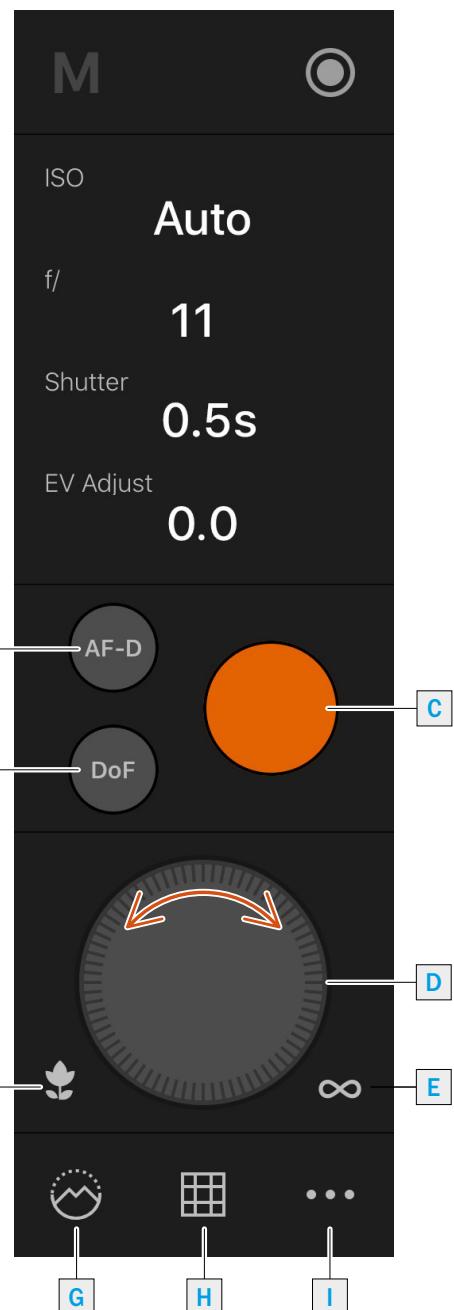
Tap the Focus Peaking icon **G** to add a focus peaking overlay. See page 120.

Grid overlay

Tap the grid overlay icon **H** to add a grid to the live view image. Press and hold for one second to show grid options. See page 119.

Additional settings

Tap the three dots **I** to show the Preview and capture options settings. See more on page 122.

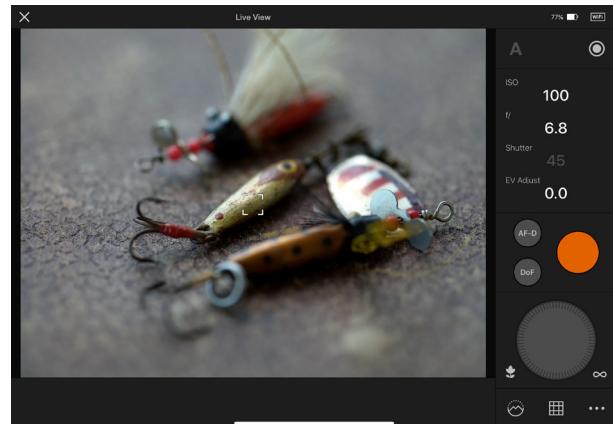


Live View

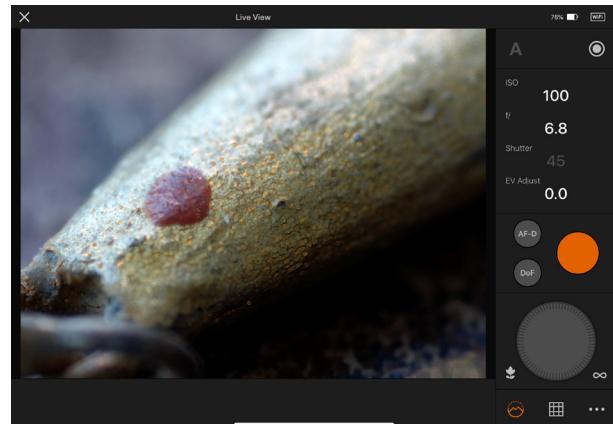
When the camera is connected by USB cable or Wi-Fi, you can activate Live View from the album view by tapping the Remote button A.



Tap anywhere in the image to perform an autofocus cycle.

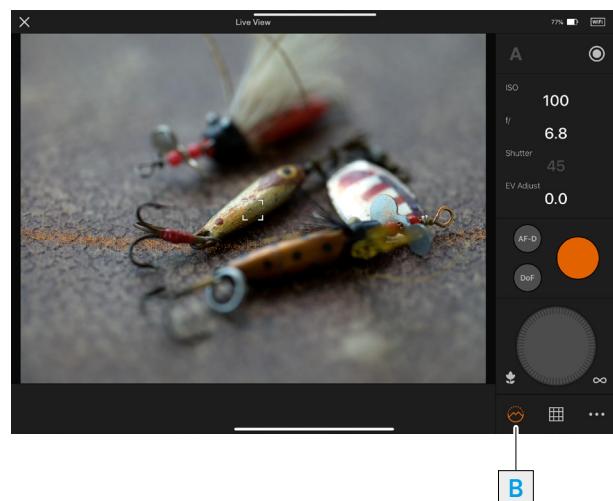


Double-tap the screen to zoom in to 100% for precise focusing. Double-tap again to zoom out.



Focus Peaking

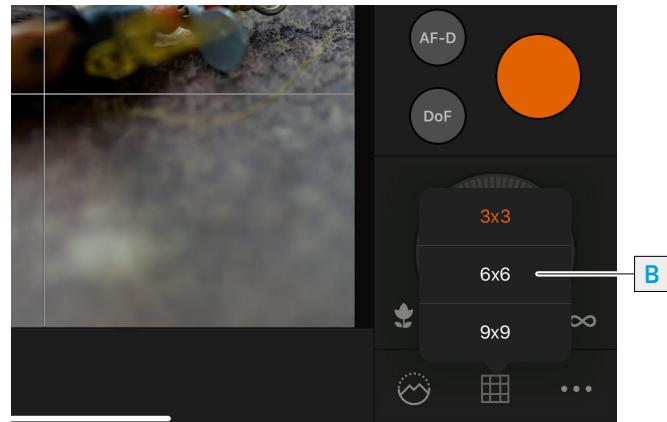
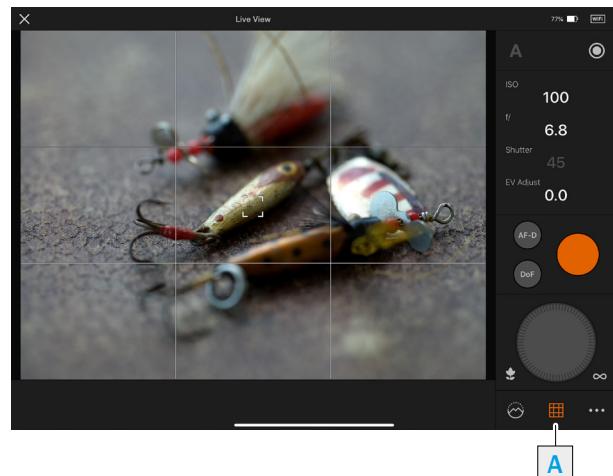
Tap the focus peaking icon B to add a focus peaking overlay. Sharp areas will be highlighted with an orange color.



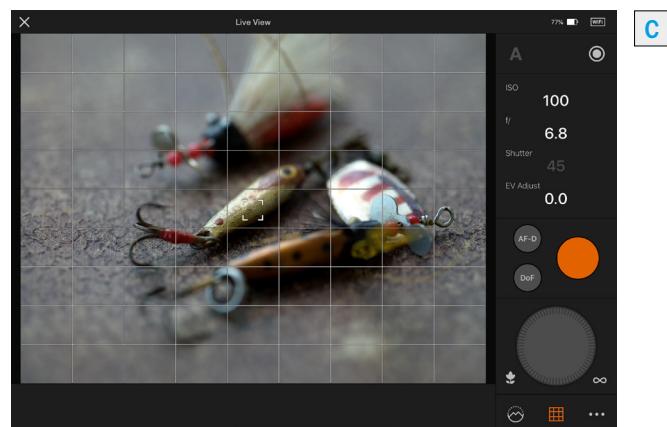
Grid overlay

Tap the grid icon **A** to turn on or off a grid overlay.

Press and hold to show grid options **B**.
Select between 1/3, 1/6 or 1/9 grids.

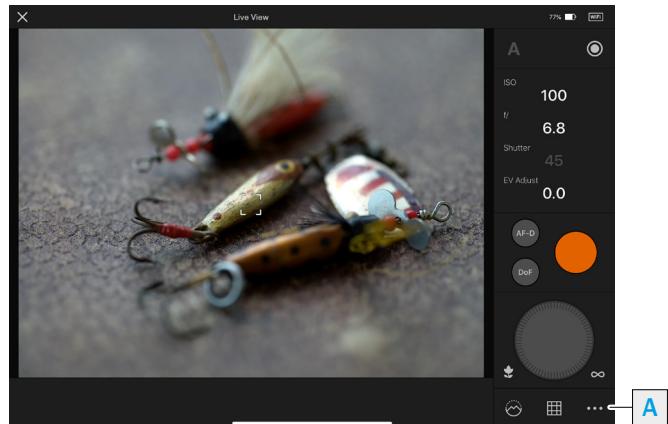


An example with 1/9 grid



Additional settings

Tap the three dots **A** to show the Preview and capture options settings **C**.



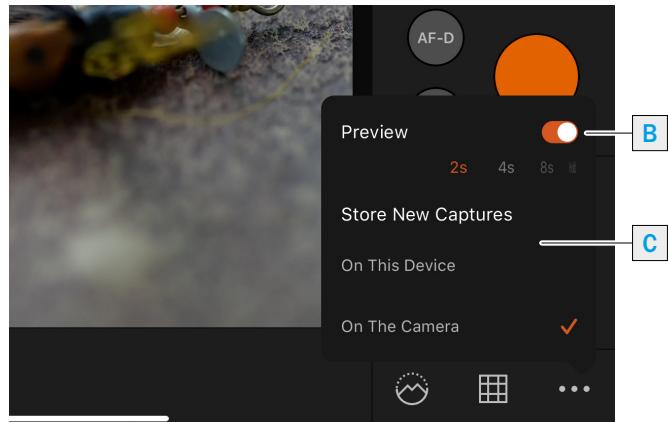
Preview

If you want to show a preview of the last capture, tap the on-off icon **B** and select duration of the preview.

Slide sideways to select between:

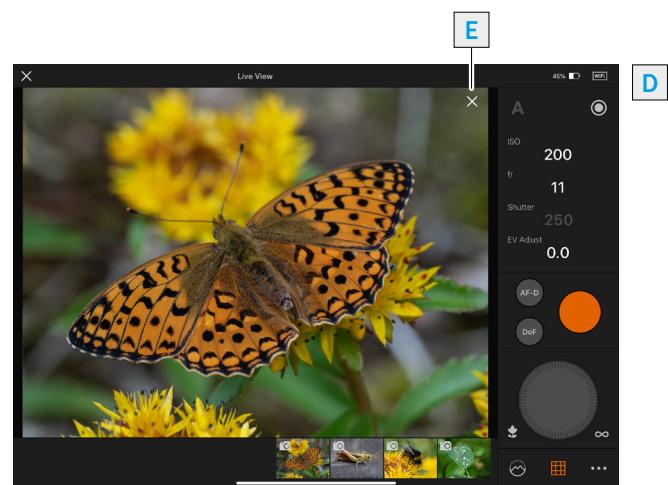
2s, 4s, 8s or Hold.

When the preview is shown **D**, you can tap the cross **E** to return to live view.



Store New Captures

Tap **On This Device** to store new captures on the iPad. Select **On The Camera** to store new captures on the camera SD card.

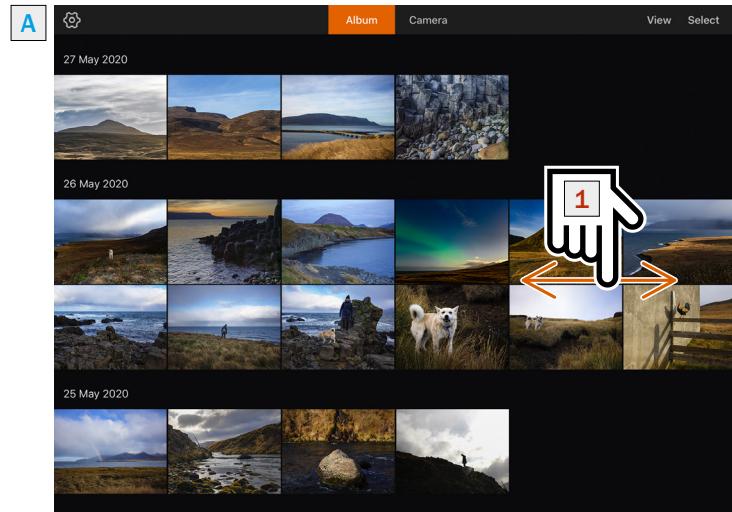


Browsing images

From the **Album** or **Camera** view A, tap on the image you want to view larger. This brings up the **Browse** screen B.

In the browse screen you can slide sideways 1 to view another image or tap the thumbnail 2.

Capture data (**ISO**, **Shutter speed** and **aperture**) is shown above the image 3.



View control

By tapping **View A** in the upper right corner it is possible to change which images are shown and how they are sorted.

Sort: Select ascending or descending sort order.

Format: Select which image type to view.

Mark: Filter images based on Star rating.

Color: Filter images based on Color rating.

View: Select to view basic capture data (Exif), Ratings or photo only.

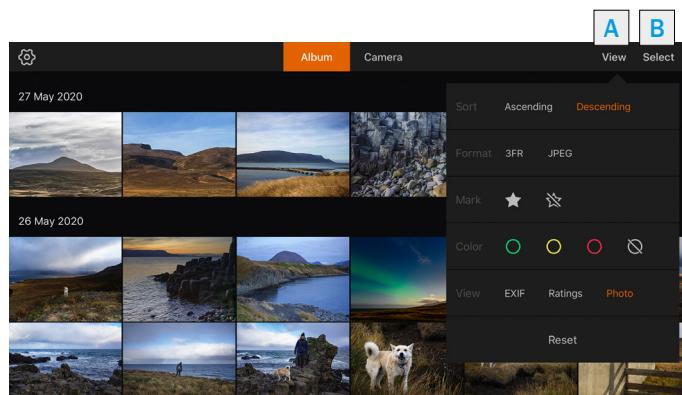


Image selection

By tapping **Select B** in the upper right corner, you can select one or more images by tapping on the thumbnails. To select all images from a specific date, tap **Select C** to the right of the date.

When one or more images are selected, the following actions can be performed:

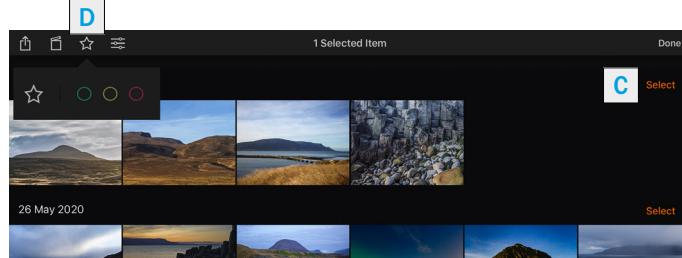
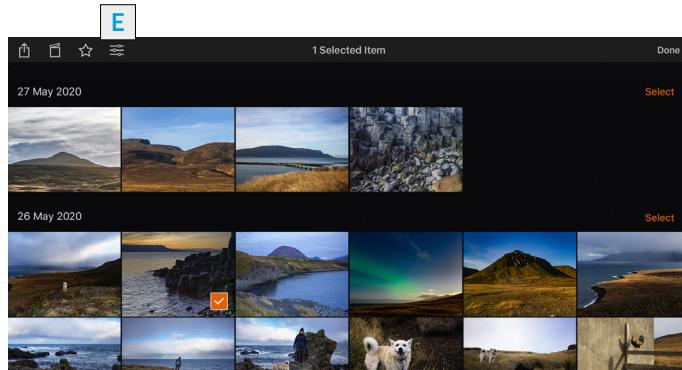


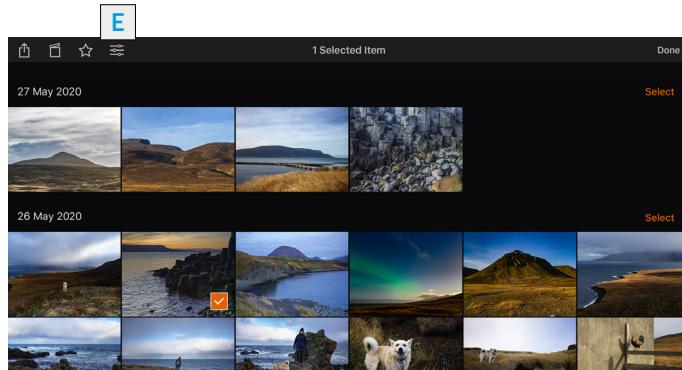
Image rating

Tap the Star **D** to bring up a panel where the image can be rated with one star or in green, yellow or red color.



Copy image adjustments

To copy the adjustments from an image, tap the adjustments icon **E** and select **Copy Adjustments**. If multiple images are selected, adjustments from the first image is copied.



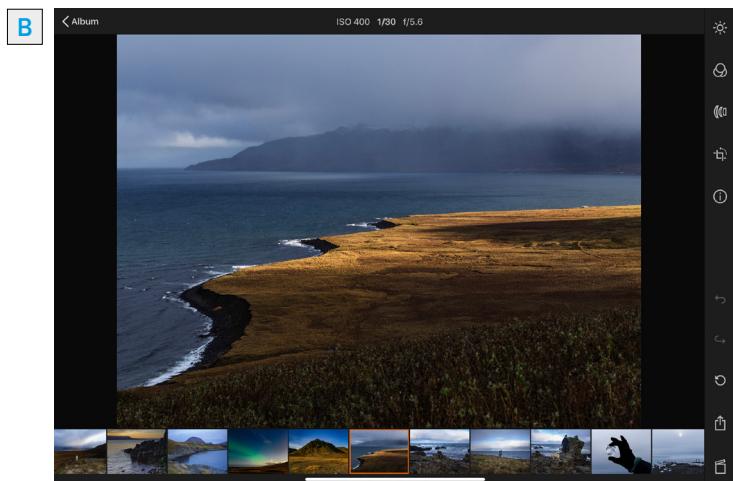
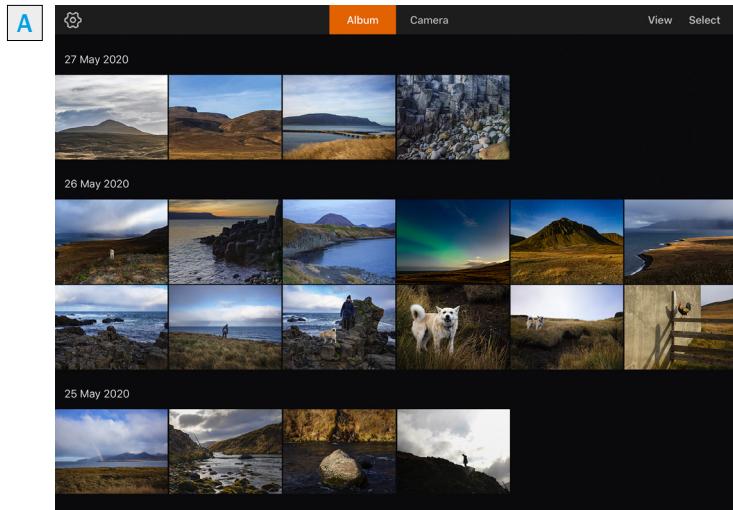
Apply image adjustments

Tap the image or images to be modified and select **Apply Adjustments**.

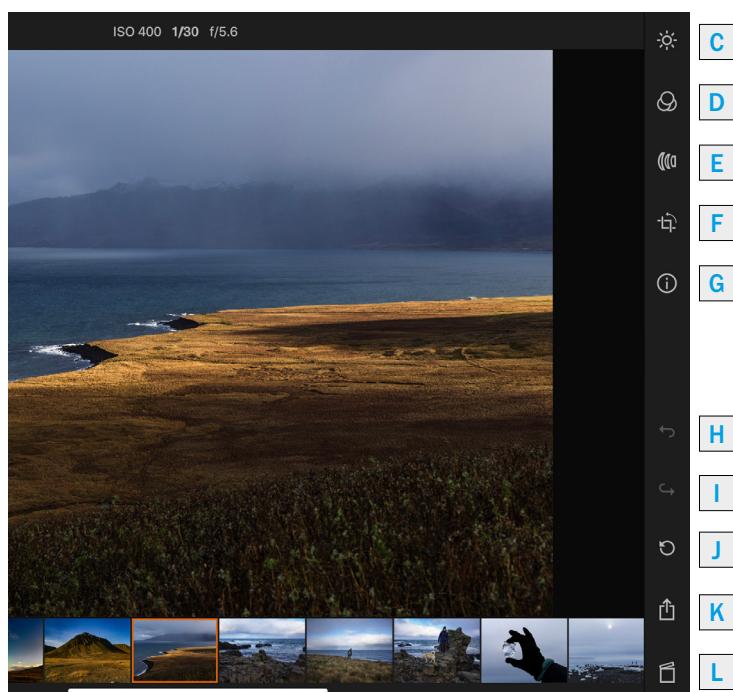
Editing images

From the **Album** or **Camera** view A, tap on the image you want to edit. This brings up the **Browse** screen B.

In the right part of the screen, there are 10 tool icons. Tap the required tool to enter edit mode. See following pages for an explanation for each tool.



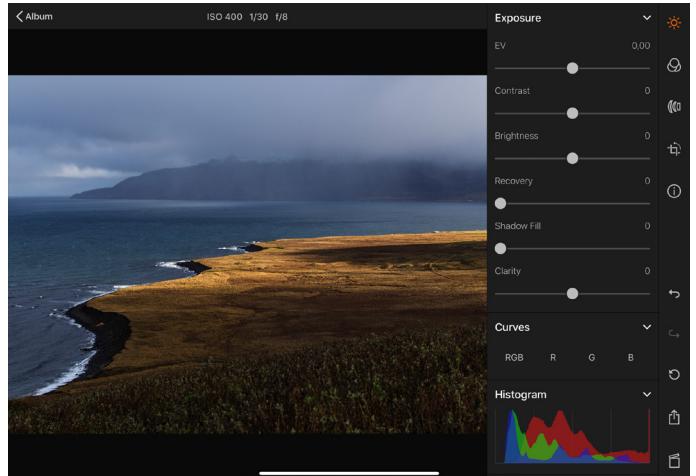
- C Exposure tool ☀ (126)
- D Color tool ⚡ (127)
- E Lens Correction, Noise filter and sharpness tool ⓘ (129)
- F Crop and orientation tool 📸 (130)
- G Capture information ⓘ (131)
- H Undo ↪ (131)
- I Redo ↵ (131)
- J Reset image ⏺ (131)
- K Export image 📁 (132)
- L Delete image 🗑 (132)



Exposure adjustments

Tap on the exposure icon  1 to bring up the **exposure editing screen** as shown to the right. The tools include:

EV	Changes overall exposure.
Contrast	Changes contrast.
Brightness	Makes the image darker or brighter but keeps shadows and highlight relatively unchanged.
Recovery	Darkens highlights
Shadow Fill	Lightens shadows
Clarity	Changes mid-tone contrast.

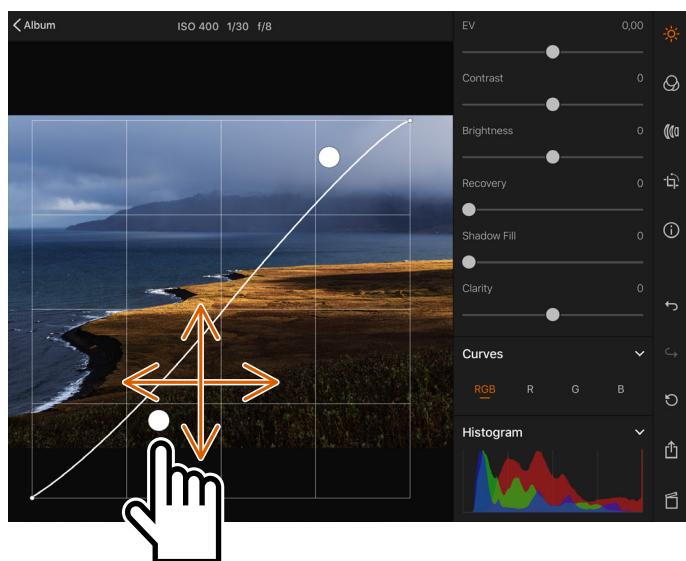


Slide the white dot to the left or right to increase or decrease the effect. Double-tap the slider to reset the value to zero.

Note!

If all the tools in the tool area are not visible, slide up to reveal the hidden tools.

The **Curve tool** can be used to adjust combined RGB or individual channels. Tap on **RGB**, **R**, **G** or **B** to edit the image. Add control points by tapping the curve and slide the points to change the image. Double-tap a control point to delete it.

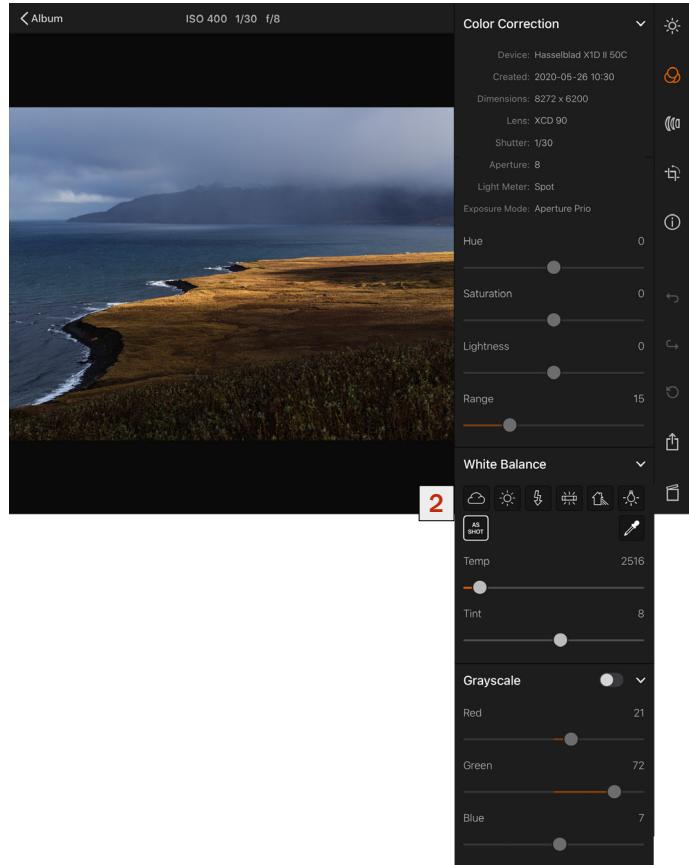


Color adjustments

Tap on the color icon 1 to bring up the **color editing screen** as shown to the right. The tools include:

Saturation	Overall color saturation.
Vibrancy	Similar to Saturation but protects already saturated areas.
Selective Color	Edit selected colors using the following tools:
Hue	Changes hue of the selected color.
Saturation	Changes saturation of the selected color.
Lightness	Changes lightness of the selected color.
Range	Selects the color range to be affected by the adjustments above.

See next page for an example.



White Balance	Select any of the Presets 2 or the picker tool to select an area of the active image.
Temp	Adjusts the color temperature according to the Kelvin scale.
Tint	Compensates for any green or magenta cast.
Grayscale	Changes image to grayscale mode. Use the Red, green and blue sliders to control the image.
Red	Amount of red channel to include.
Green	Amount of green channel to include.
Blue	Amount of blue channel to include.

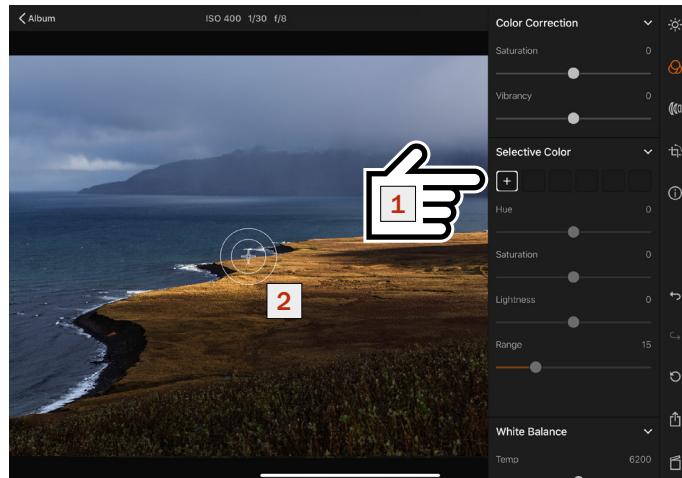
Selective Color adjustments

Tap on the plus sign **1** and a cursor **2** will appear.

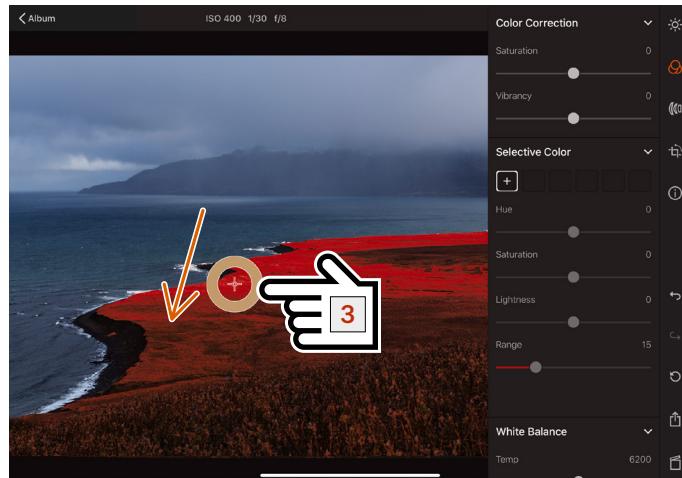
Slide the cursor to a color in the image that you want to affect **3**. Colors that are close to the selected color are highlighted in red and the outer ring of the cursor shows the selected color.

Use **Range** to increase or decrease the selection.

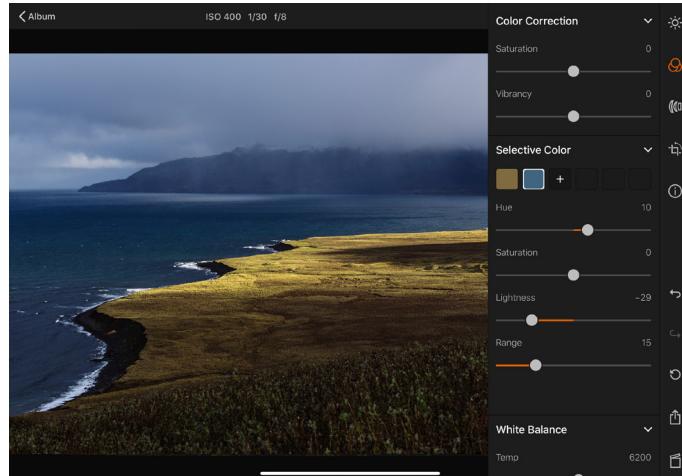
Use **Hue**, **Saturation** and **Lightness** to modify the selected color range.



To modify other colors in the image, tap the plus sign again and select another color. Repeat the process above.



This image shows an example where two color ranges have been modified.



Lens corrections/Details

Tap on the lens corrections/Details icon (1) to bring up the **Lens corrections/Details editing screen** as shown to the right. The tools include:

Lens Corrections

Chromatic aberration

Corrects lateral color fringing.

Distortion

Corrects any lens distortion.

Vignetting

Reduces vignetting. Use the slider control the amount.

Noise Filter

Color

Reduces color noise in fine detail areas.

Luminance

Reduces monochrome noise.

Sharpness

Amount

Controls the amount of sharpness added.

Radius

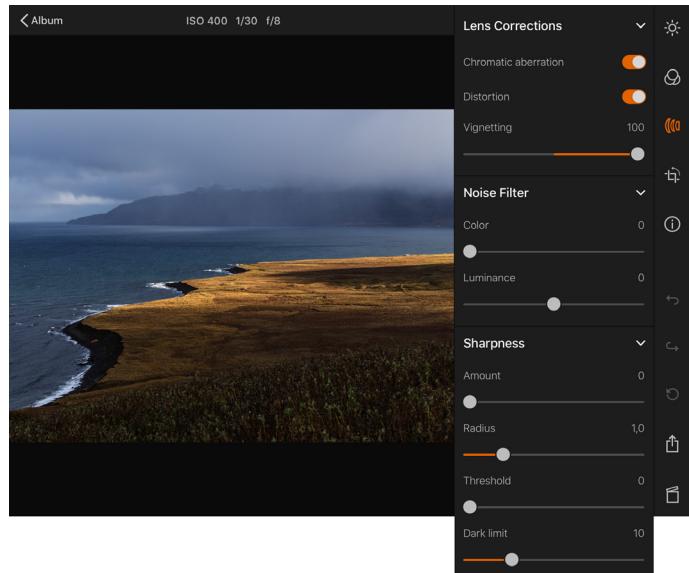
The larger the radius, the more extensive the sharpening effect will be.

Threshold

Controls the point above or below which pixels are affected.

Dark Limit

Sets the brightness level below which the filter has no effect.



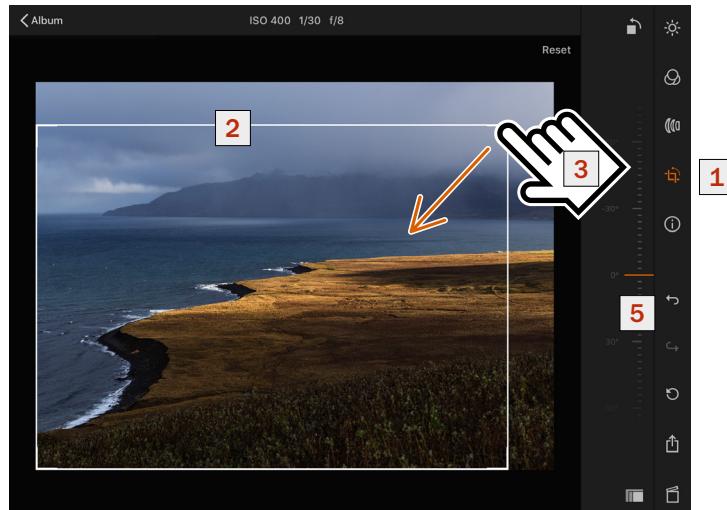
Crop and Orientation tool

Tap on the Crop icon 1 to bring up the **Crop and orientation editing screen** as shown to the right. The tools include:

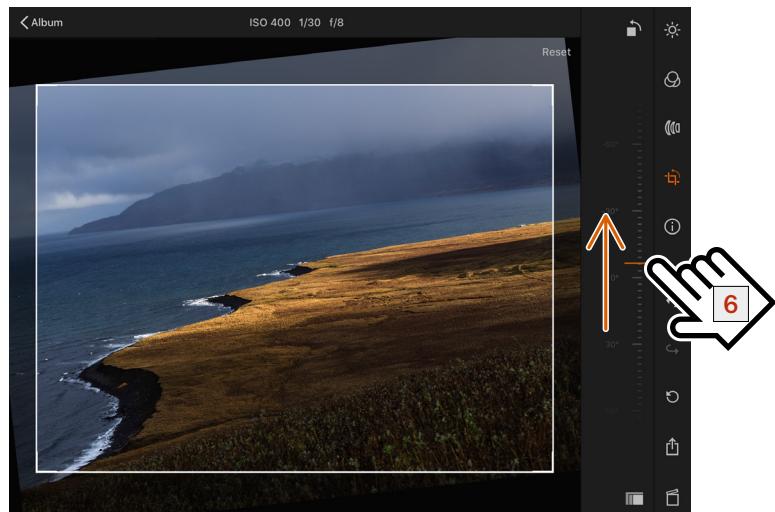
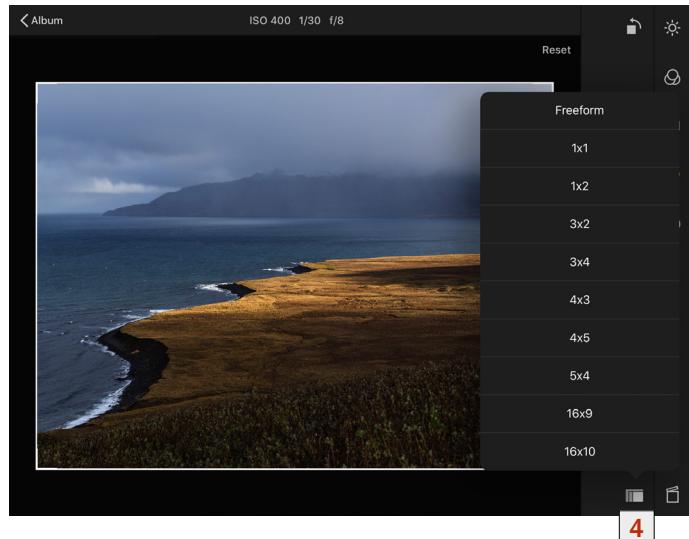
Crop Mask 2 Use to crop the image. Slide any of the corners to crop 3. Tap the crop preset icon 4 to select one of the pre-defined crop aspects.

Orientation slider 5

Slide up or down to rotate the image 6.



Tap the Crop and orientation tool again to accept the current settings and modify the image.



Capture information

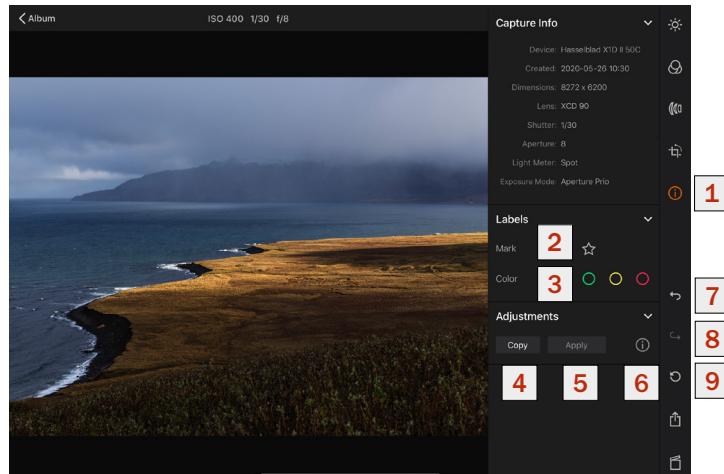
Tap on the Image info icon (1) to bring up the **Capture Info** screen as shown to the right.

This screen shows capture data for the image. It also features **Image rating** where the image can be labelled with a star (2) or green, yellow or red status (3). Tap the star or the required color.

Copy and Apply image adjustments

To copy the adjustments from the active image, tap **Copy** (4) under **Adjustments**. Then browse to the image to copy the adjustments to and select **Apply** (5).

Tap the **Information** icon (6) to show which adjustments of the active image that has been changed.



Undo 7

Tap ↺ to undo the last action.

Redo 8

Tap ↻ to redo the last action.

Reset image 9

Tap ⌂ to reset all edits to the image.

Export Images

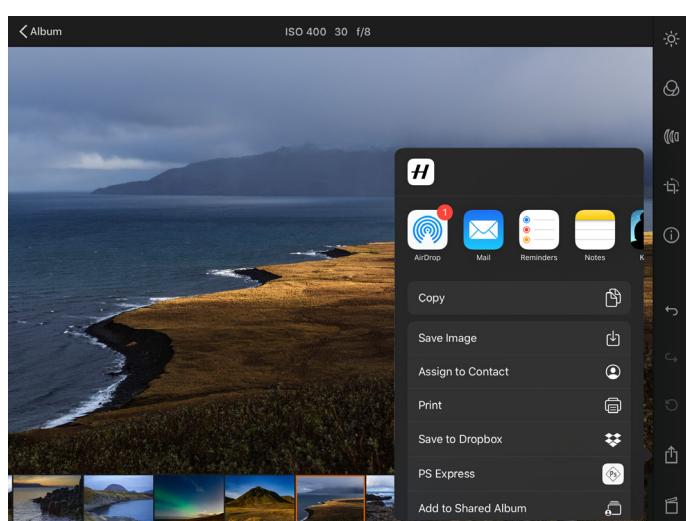
To export images, tap the Share icon  1.

From the pop-up menu 2, select the image format. Choose between:

- **JPEG** - full size (50 MPixel)
- **JPEG** - medium size (3.2 MPixel)
- **3FR raw**

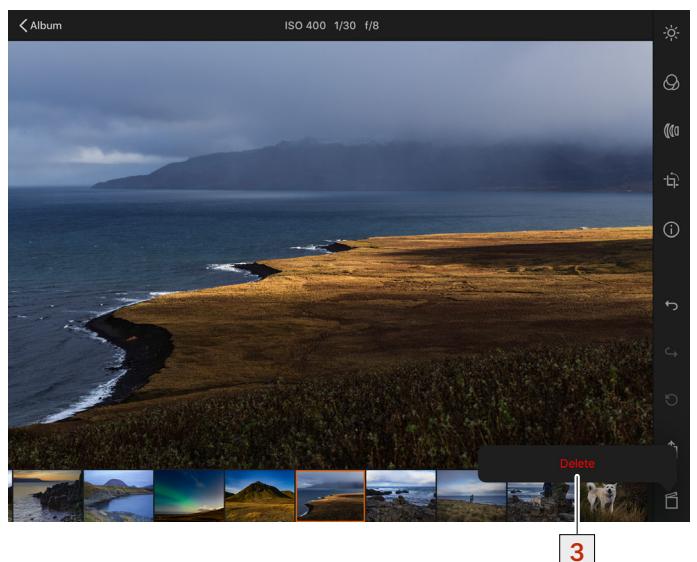
The **3FR** raw format retains full image quality and can be used for further image processing in Phocus.

When image format has been selected, the destination pop-up appears. Choose where the image should be saved. The actual choices depend on your set-up.



Delete Images

To delete an image tap on the Delete icon  2. To confirm, tap **Delete** 3. If you don't want to delete the image, tap anywhere outside **Delete** 3.



Settings

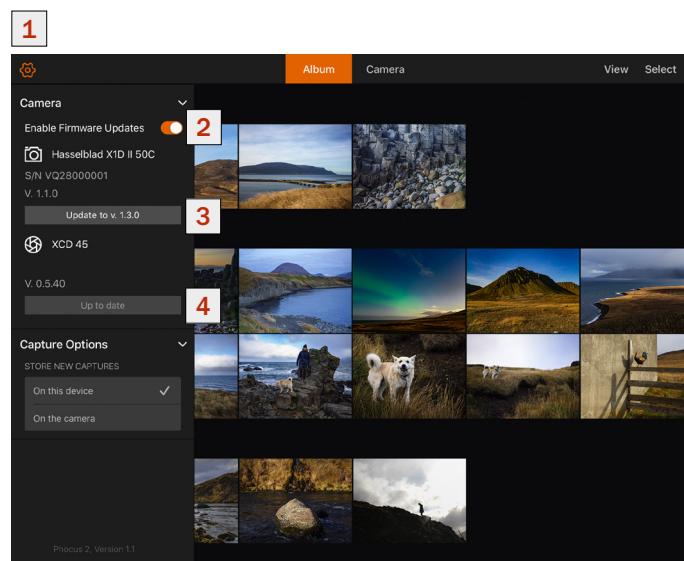
Tap the tool icon 1 to reveal the settings pane. This allows you to check and update firmware and control where new images will be stored.

Firmware update

This requires that the camera is connected to the iPad using a USB cable.

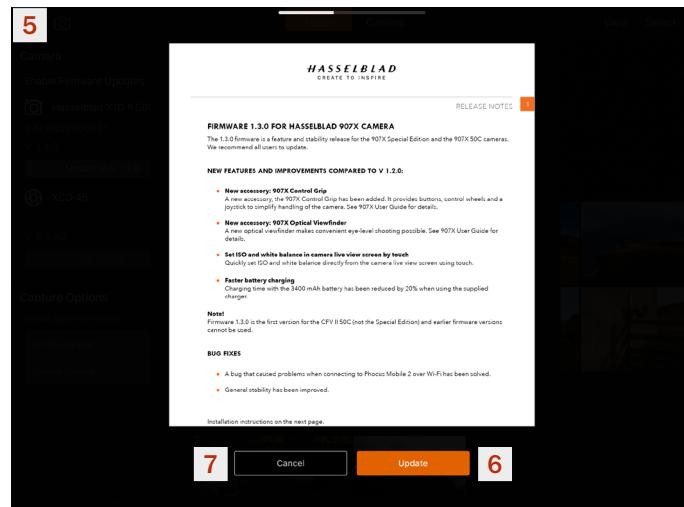
If the **Enable Firmware Updates** 2 is active, and there is an active Internet connection, PM2 will check if there are any new firmware versions available. If the camera or lens already have the latest firmware, the button will show **Up to date** 4.

If a later version is found, the button 3 will show e.g. **Update to V. 1.3.0**. Tap this button to start the firmware update procedure.

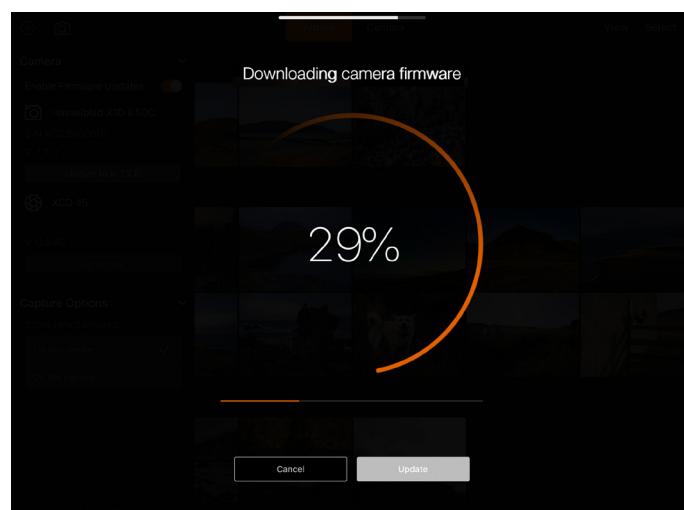


A screen with the Release notes where all new features are listed is shown 5.

Tap **Update** 6 to continue or **Cancel** 7 to abort the update.

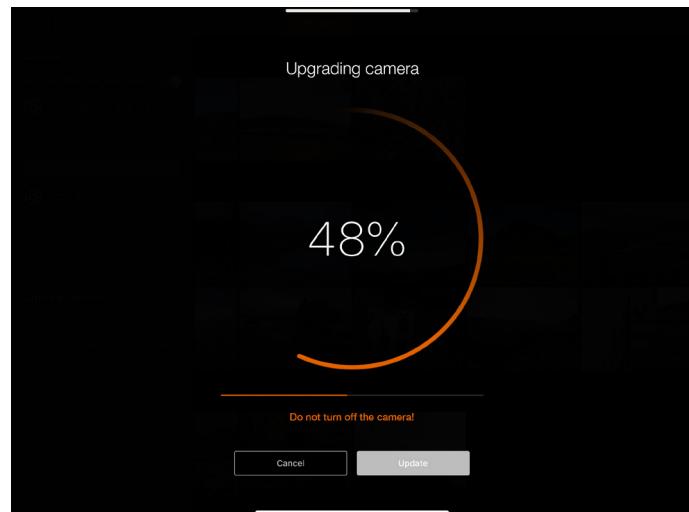


The new firmware file is downloaded from the Hasselblad server. Download time depends on the Internet connection speed.

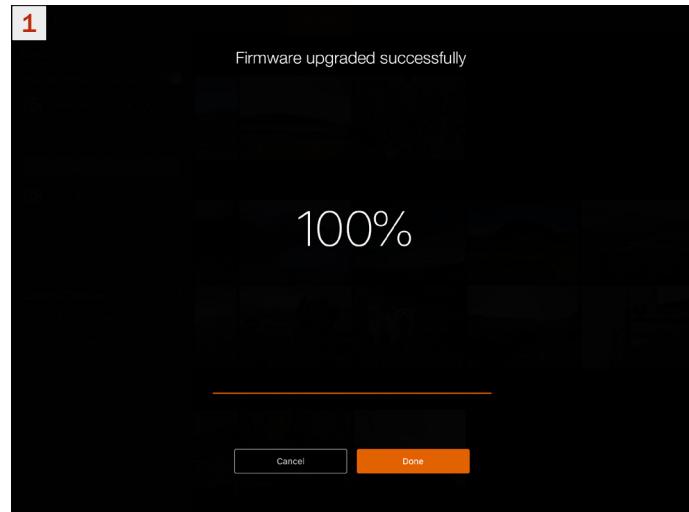


When the firmware file is downloaded, the actual update of the camera or lens starts.

Note that this process can take up to 20 minutes minutes to complete.



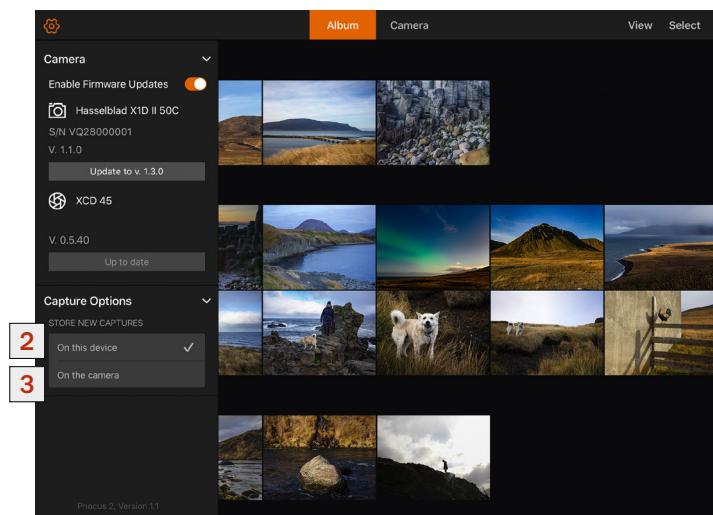
After a successful update, the screen **1** is shown. Tap **Done** to exit and start using the camera.



Capture Options

This controls where new images captured in tethered mode using USB or Wi-Fi will be stored.

- Tap **On this device** **2** to store new images on the iPad.
- Tap **On the camera** **3** to store new images on the camera SD card.



Phocus Mobile 2 for iPhone

Phocus Mobile 2 for the iPhone shares many of the features from the iPad version. The user can browse images on the iPhone or a camera connected using Wi-Fi or USB. Full remote control of the connected camera is also possible, including focusing and live view.

It supports any **iPhone** running iOS 12 or later.

For the image editing functionality an **iPad Pro** or one of the most recent 2019 **iPad Air** models with more than 2GB RAM is required. The **X1D II 50C**, **CFV II 50C** and **907X** and future camera models can be used with **Phocus Mobile 2**. The original **Phocus Mobile 1** will still be required for the older cameras. For further details please refer to hasselblad.com/phocussmobile2.

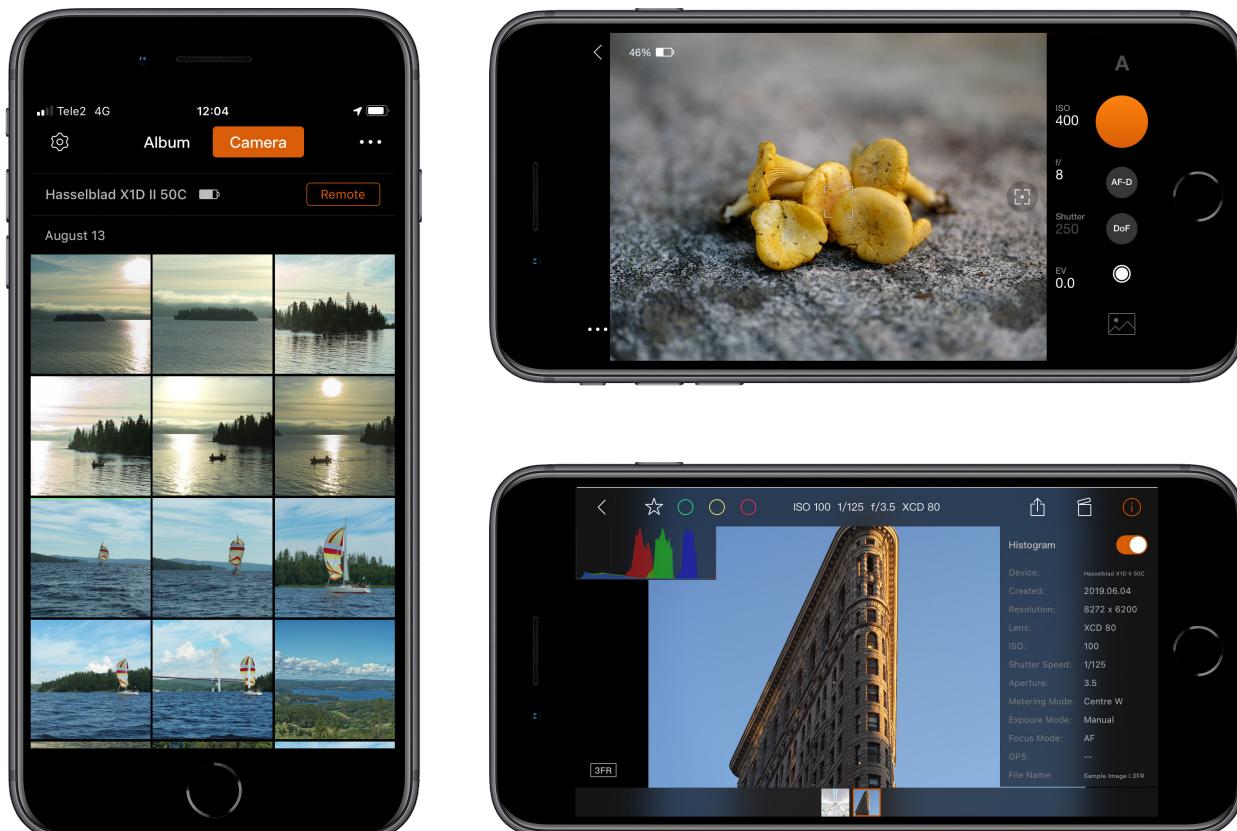
The description on the following pages is made using an iPhone 8. **Phocus Mobile 2** is also abbreviated to PM2.

PM2 for the iPhone can be downloaded for free from the Apple App Store.



Note!

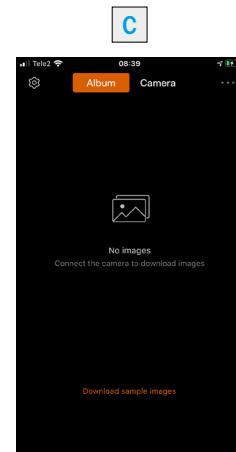
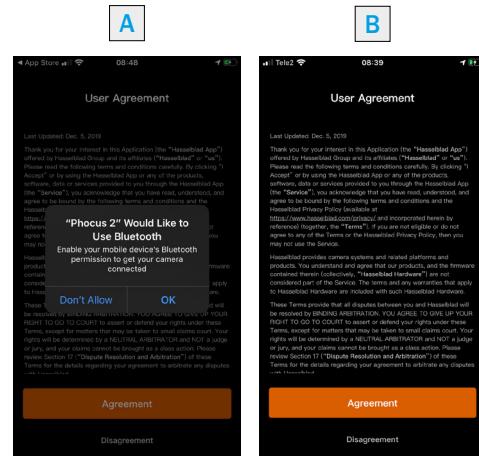
Remote control of image capture when using the **CFV II 50C** on a **V System camera** is available only with a **503CW** with winder, an **EL**-type camera (e.g. the **553ELX**) or when the electronic shutter is used.



First launch

When started for the first time, you will be asked to allow PM2 to use **Bluetooth A** which is used to simplify the **Wi-Fi** connection. Next, the user agreement **B** is shown and if you agree to this, tap **Agreement**.

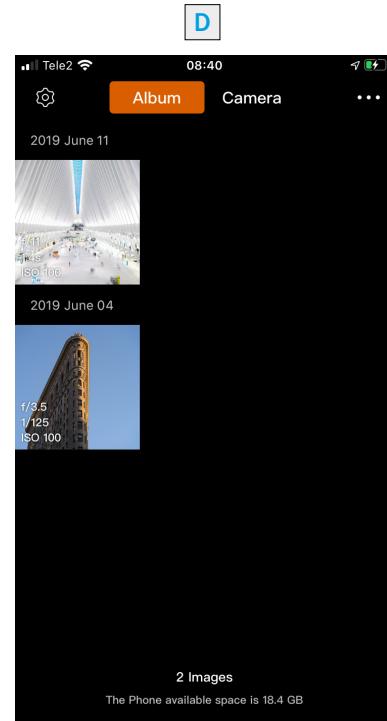
The screen **C** gives you the option to download two high-resolution sample images. Tap **Download sample images** to download. These are fairly large files (approx 108 MB/image) so download when a Wi-Fi connection is available.



Album view D

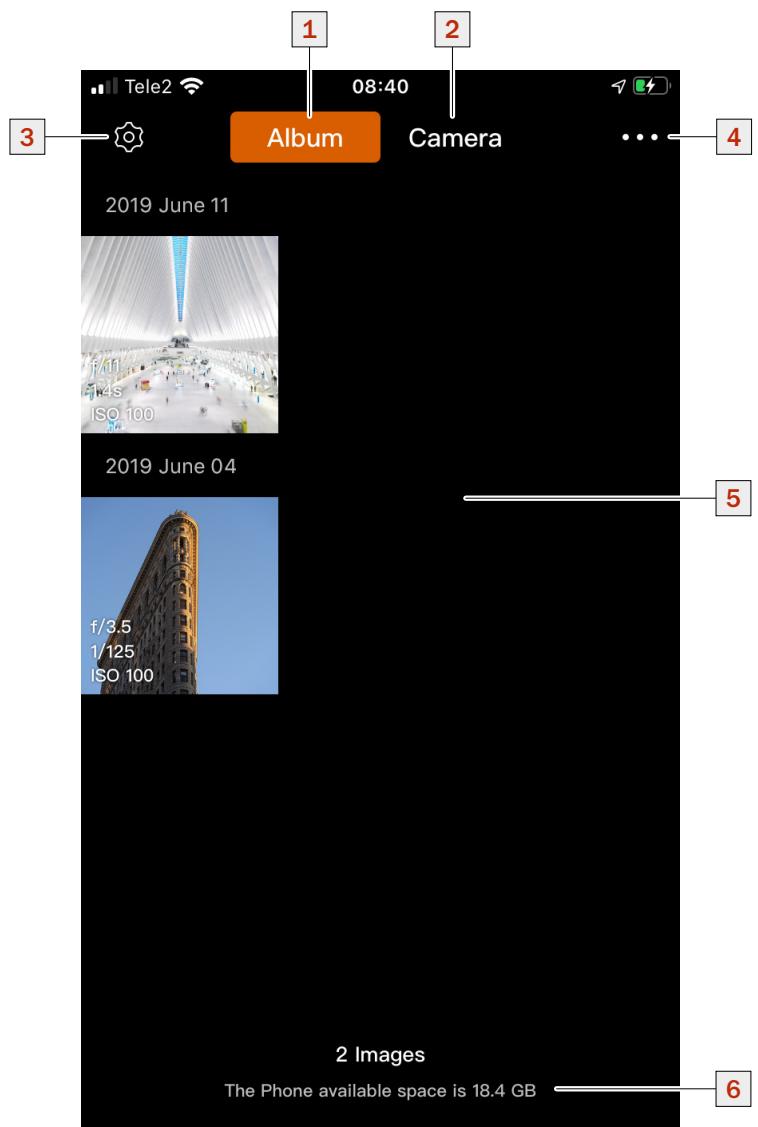
When **Album** is highlighted in the top bar, images stored locally on the iPhone are shown.

Screen controls are explained on the next page.



Album view

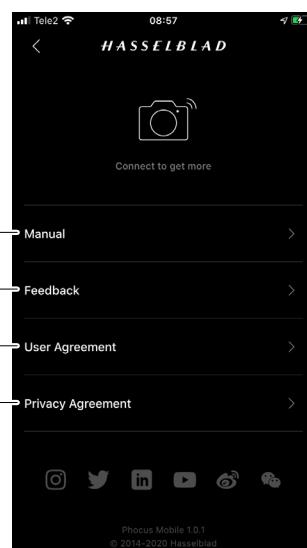
1. **Album:** Images stored locally on the iPhone.
2. **Camera:** Images stored on the active SD card in the connected camera.
3. Settings button. See page 138.
4. Display filter settings. See page 138.
5. Thumbnails area.
6. Status information.



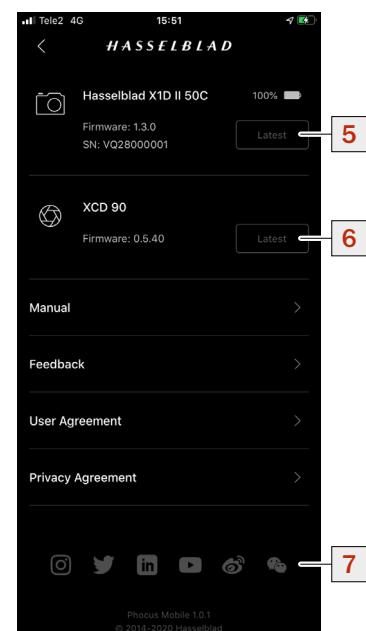
Settings page

1. **Manual:** Download the instruction manuals for the X1D II 50C, CFV II 50C and 907X 50C cameras.
2. **Feedback:** Send us a mail with your feed-back.
3. **User Agreement:** show the user agree-ment.
4. **Privacy Agreement:** show the Privacy Agreement.
5. Installed Camera firmware version. If you have an Internet connection, an automatic check is made if there is any later firmware available. If so, you will be guided to download and install the new firmware.
6. Installed lens firmware. Same as for #5.
7. Direct links to Hasselblad social media pages.

Camera not connected

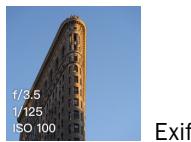


Camera connected

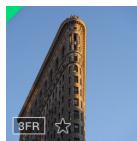


Display filter

8. Show image types. E.g. tap 3FR to hide 3FR raw files in the album view.
9. Sort order (ascending or descending).
10. Capture data overlay.



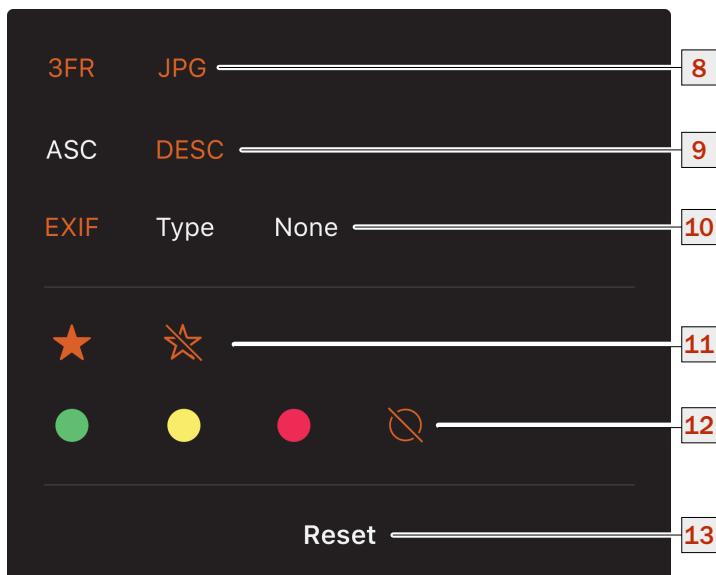
EXIF



Type



None



11. Star rating. Tap the star to only show star rated images. Tap  to include images without star rating.
12. Color rating. Tap to unselect a color to hide images with that color rating in the album view. Tap  to include images without color rating.
13. Reset the display filter to default.

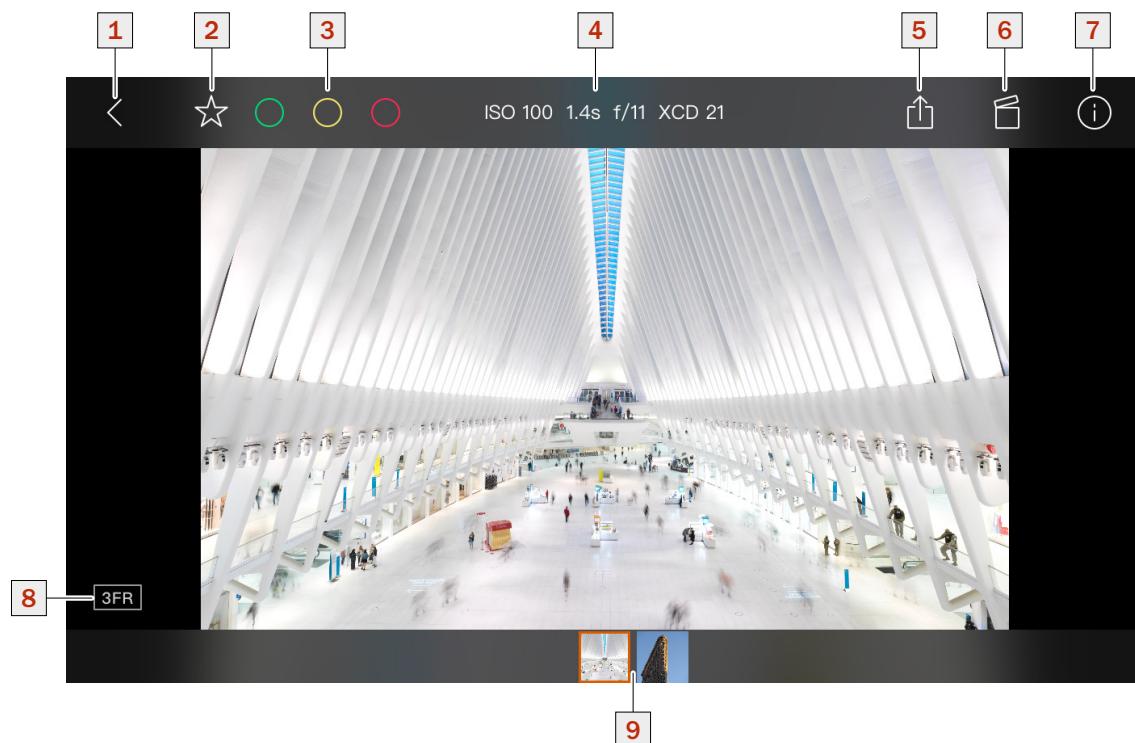
Browse images on the iPhone

From the main screen tap **Album**. Then tap the thumbnail you want to view larger. Landscape orientation is shown here, but can also hold the iPhone vertically.

In this view you can slide to the left or right to view other image.

Double-tapping cycles between fit view, 50% zoom and 100% zoom.

Browsing images stored on the camera is explained on the next page.



1. Return to album view.
2. Rate the image with a star.
3. Rate the image with a color.
4. Basic image capture data (also see #7).
5. Export the image to 3FR (Raw) or Jpg. You will be presented with a screen with alternatives where to export the image. The number of options will depend on your set-up. For example, you can export a jpg directly to Facebook.
Note that this is only possible for images stored on the iPhone. See page 150 how to download images from the camera.
6. Delete the image.
7. Show extended capture data and turn Histogram on or off (page 141 and 151).
8. Image type (3FR-Raw or JPG).
9. Thumbnails of all images in the album.

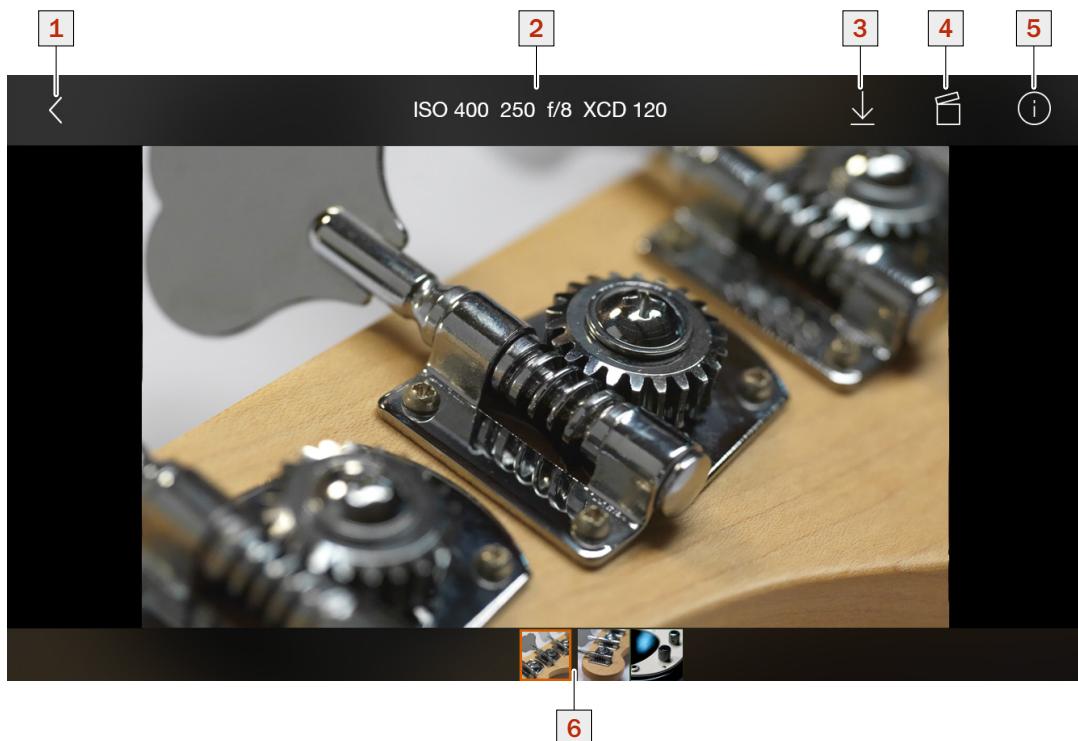
Browse images on the camera

From the main screen tap **Camera**. Then tap the thumbnail you want to view larger. Landscape orientation is shown here, but can also hold the iPhone vertically.

In this view you can slide to the left or right to view other image.

Double-tapping cycles between fit view, 50% zoom and 100% zoom.

How to browse images stored on the camera is explained on page 139 and 150.



1. Return to album view.
2. Basic image capture data (also see #5).
3. Download the image to the iPhone. Page 150.
4. Delete the image. Page 150.
5. Show extended capture data and turn Histogram on or off (page 141 and 151).
6. Thumbnails of all images on the active camera SD card.

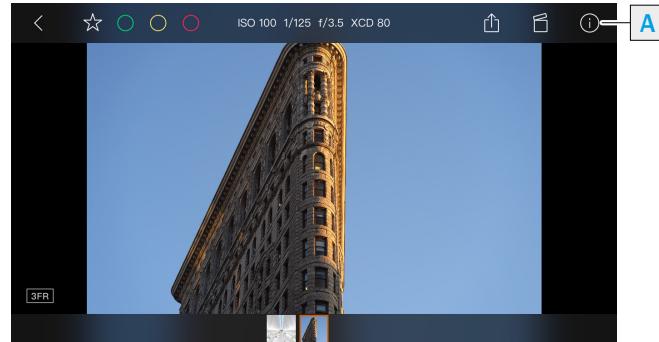
Extended capture data

From the single image view, tap  A to show the extended capture data B.

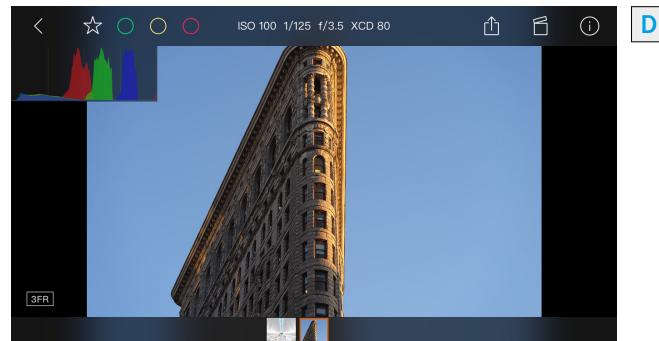
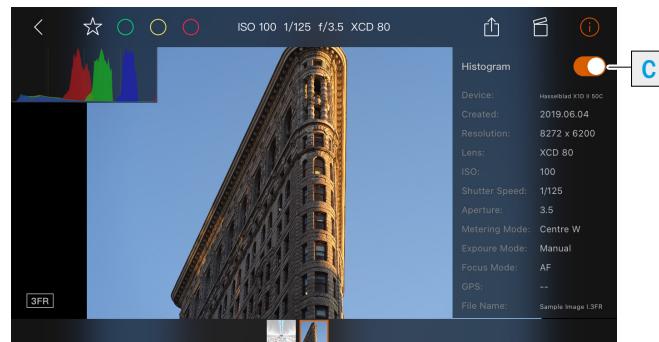
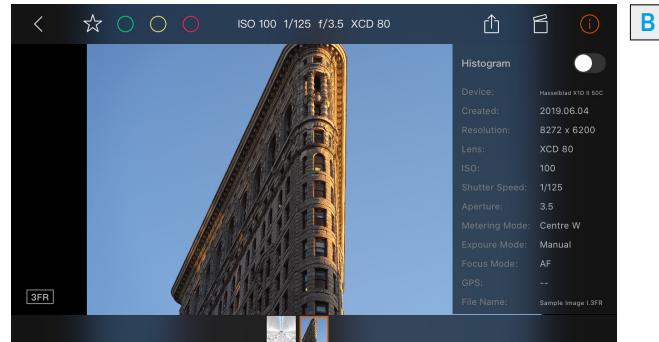
Histogram

Turn on the histogram by tapping the on-off icon C.

When the histogram is turned on, a small histogram will be shown for all images in single view.



Close the extended capture data view by tapping  again D.



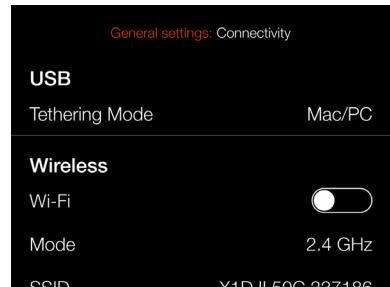
Connect the camera

You can connect the camera in two ways:

- Using a **Lightning to USB-C** cable.
- Over **Wi-Fi**.

USB

The method using a **USB** cable is straightforward and only includes attaching the **Lightning to USB-C** cable between camera and iPhone. Make sure the Tethering mode on the camera is set to **iOS** **B** in **General Settings > Connectivity** **A**.



A

Connect using Wi-Fi

In the camera menu **General Settings > Connectivity** **C**, activate Wi-Fi and select either 5 or 2.4 GHz.



B

The first time that the camera is connected over Wi-Fi, a few more steps are necessary.

- Start PM2 on your iPhone and make sure the camera is on.
- From the **Album view**, tap **Camera** **D**.



C

Continued on the next page.

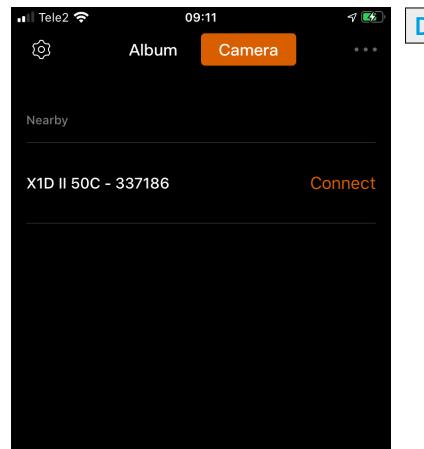
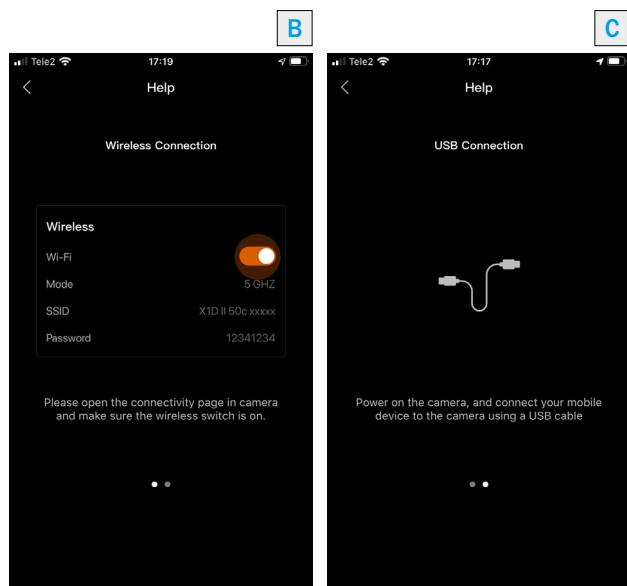
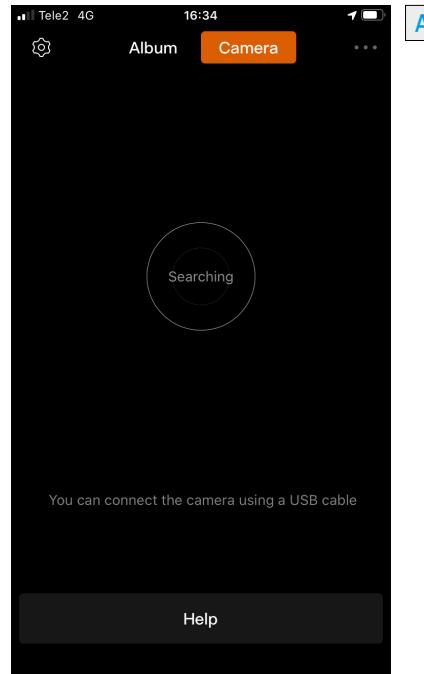


D

Connect using Wi-Fi – continued

- PM2 will start searching for nearby cameras, showing the screen **A**.
- If nothing happens, make sure the camera is close to the iPhone. Tap **Help** to show the two help screens **B** and **C**.
- When a camera is found, the screen **D** is shown. Tap **Connect** to connect the camera.

Continued on the next page.

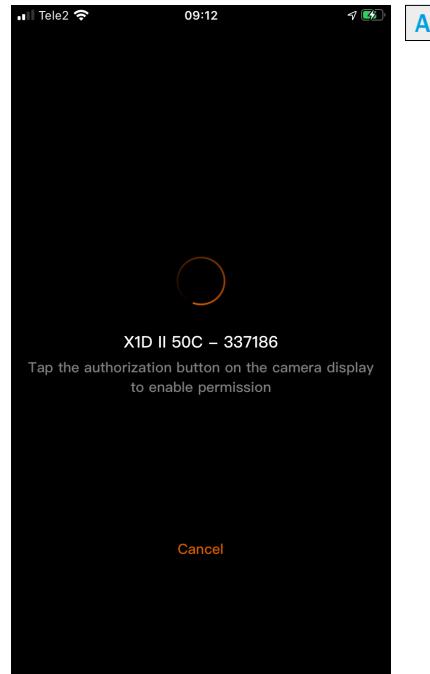


Connect using Wi-Fi – continued

- During the connection process, PM2 will ask you to accept the connection on the camera **A**.
- On the camera, press the rectangle button □ to accept the connection. Press the cross button × to deny **B**.
- iOS will ask you to confirm the connection **C**. Tap **Join** to finally connect the camera.
- When a successful connection is established the screen **D** is shown.

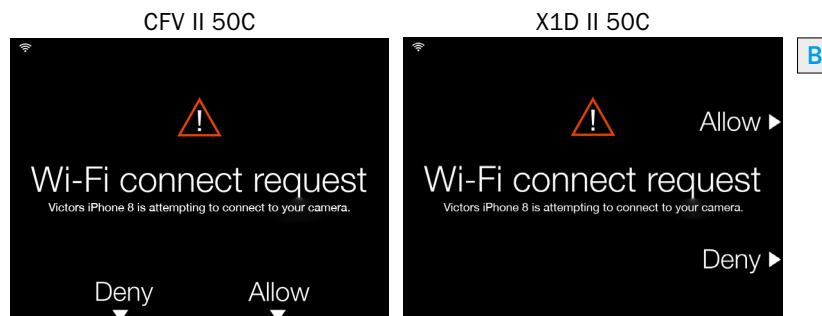
Note!

The next time you connect the camera to PM2, some of the steps above will be skipped automatically, simplifying the connection process.



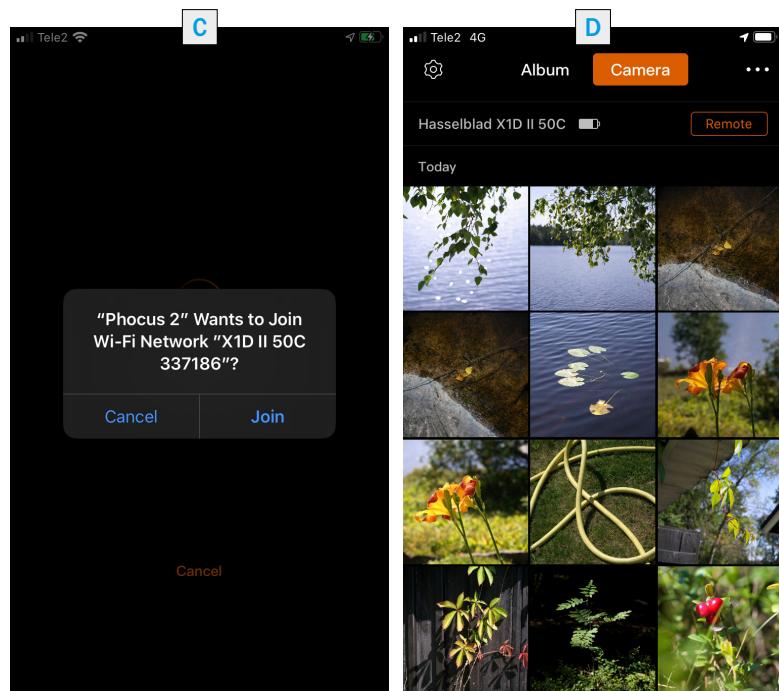
Note!

The camera can only be connected to one device at time. If you want to connect the camera to second device, please make sure that PM2 is not running on the first device.



Note!

It is also possible to manually connect Wi-Fi using the procedure described on page 116



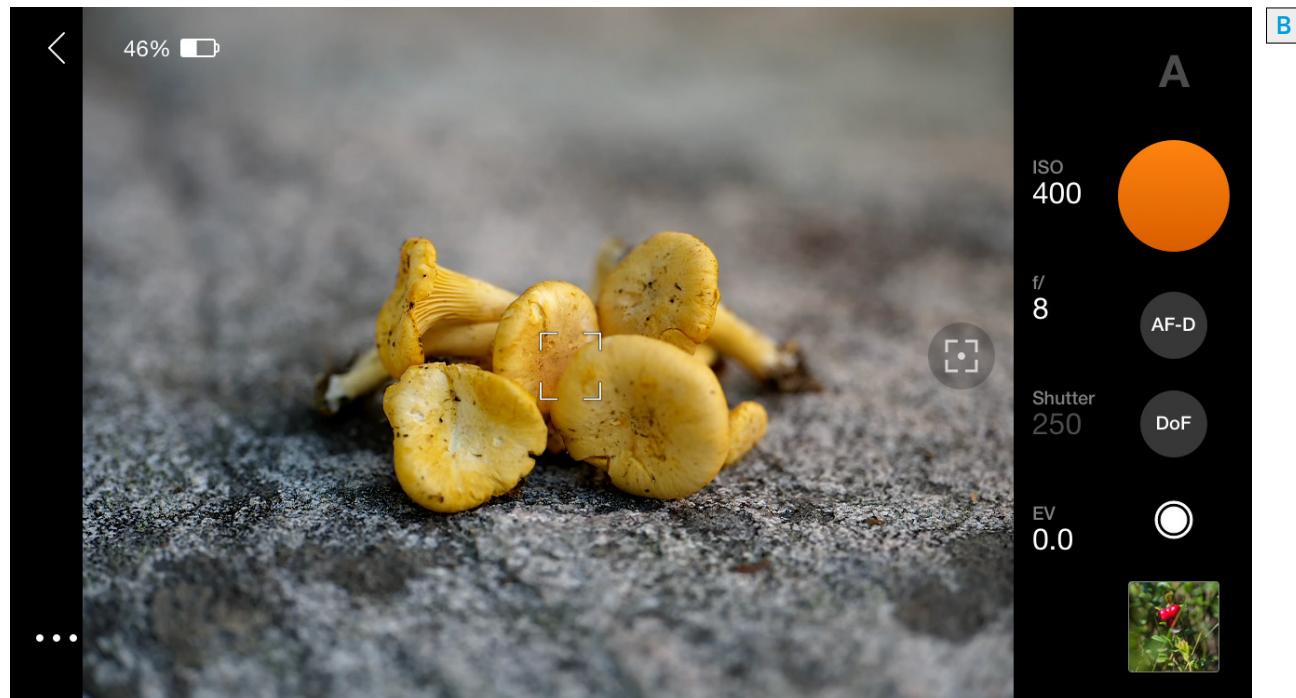
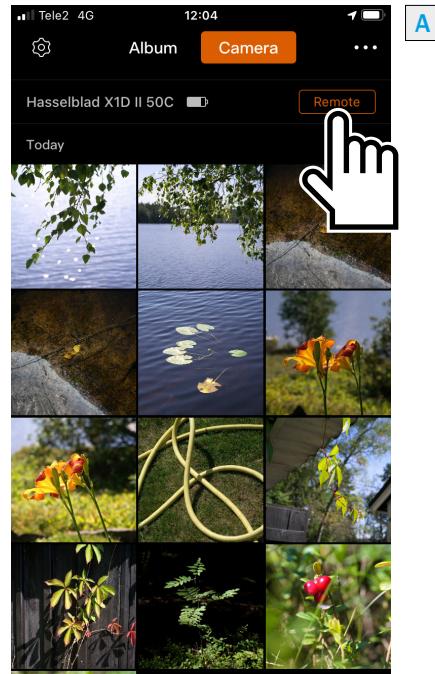
Camera remote control

A connected camera (X1D II 50C and 907X 50C) can be fully controlled remotely using PM2.

When using the CFV II 50C remote only control of capture is possible and only when using a **503CW** with winder, an **EL**-type camera (e.g. the **553ELX**) or when the electronic shutter is used.

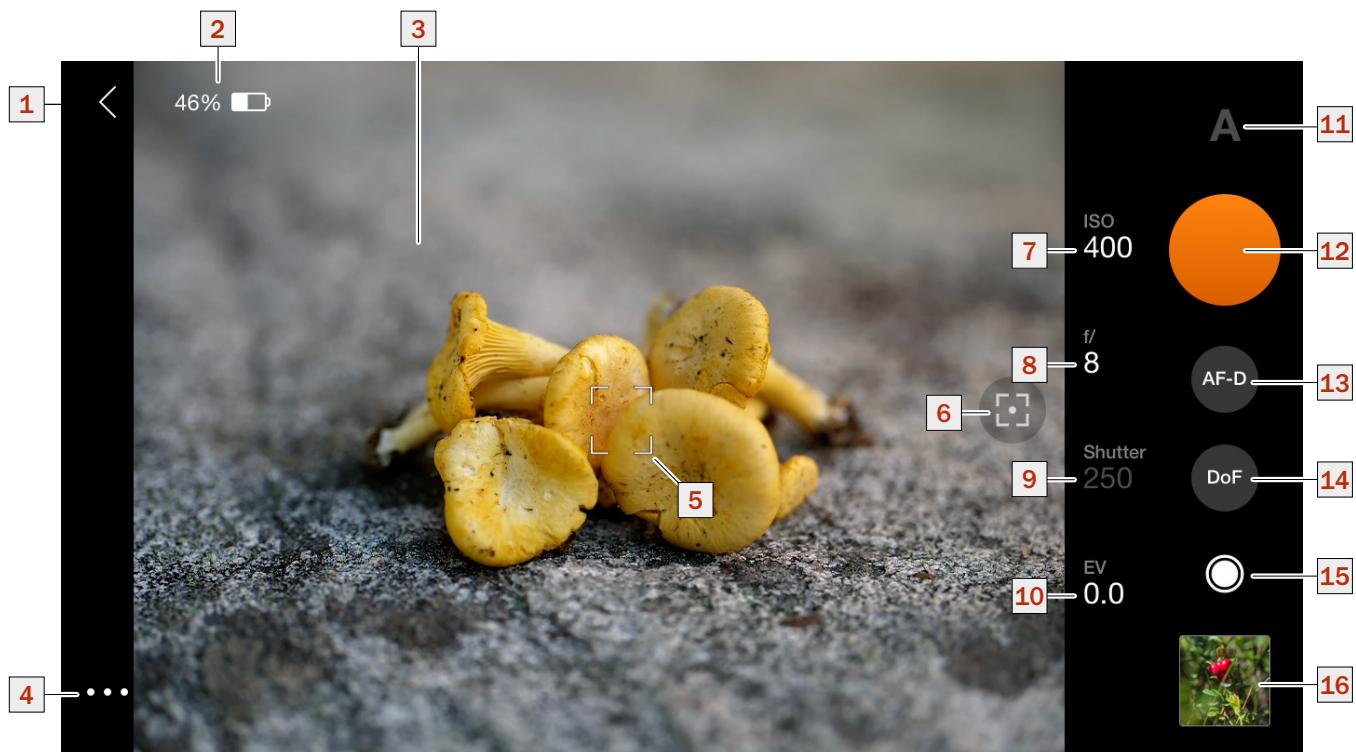
When a connection is established, tap Remote **A**.

This brings up the remote control screen **B** with live view from the camera and a number of camera controls. These are explained in detail on the next page.



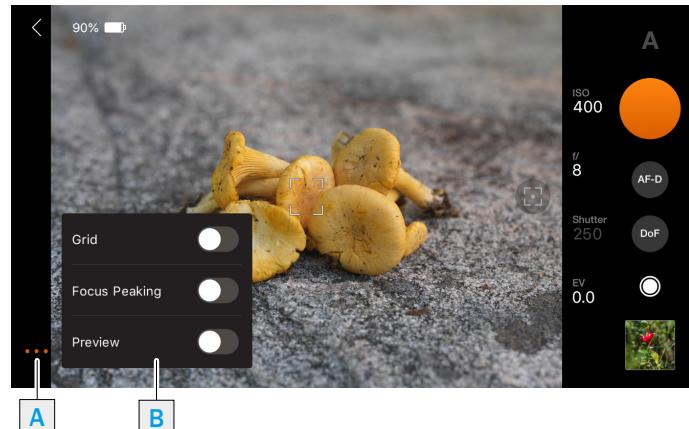
Camera remote control screen

1. Go back to Album view
2. Camera battery status
3. Main viewer window
4. Overlay and Preview settings. Page 147.
5. Focus area. Tap anywhere in the image to focus.
6. Manual focus tool. Page 149.
7. ISO setting. Tap to change value. Page 148.
8. Aperture setting. Tap to change value. Page 148.
9. Shutter speed setting. Tap to change value. Page 148.
10. Exposure adjustment setting. Tap to change value. Page 148.
11. Camera exposure mode.
12. Shutter release button. Tap to capture an image.
13. AF drive button. Tap to perform a focusing cycle.
14. Depth-of-field preview button. Tap to close aperture. Tap again to open.
15. Camera light metering mode setting. Tap to change value. Page 149.
16. Miniature of last capture. Page 150.



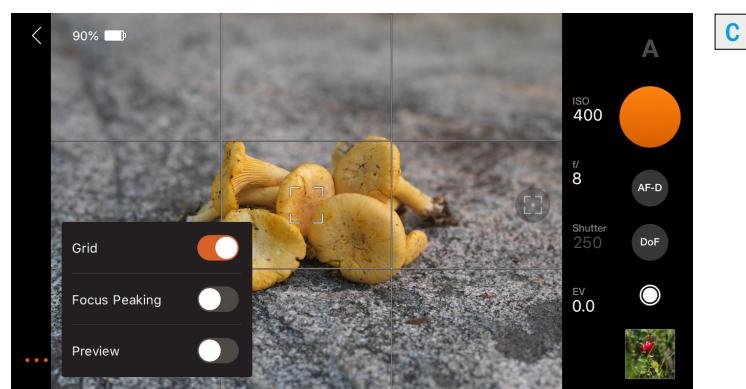
Overlay/Preview control

Tap the three dots A to show the overlay and preview controls B.



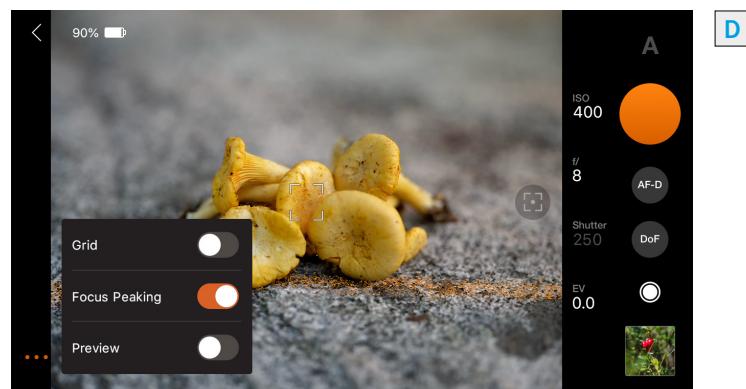
Grid overlay C

Shows a 1/3 grid overlay over the live view image.



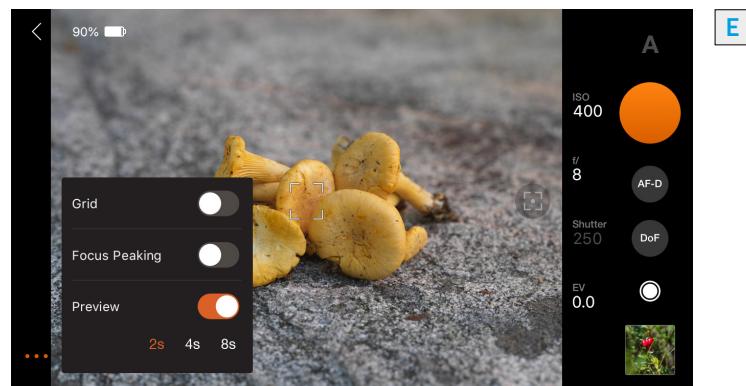
Focus peaking overlay D

Shows a false color overlay to indicate sharp areas of the image.



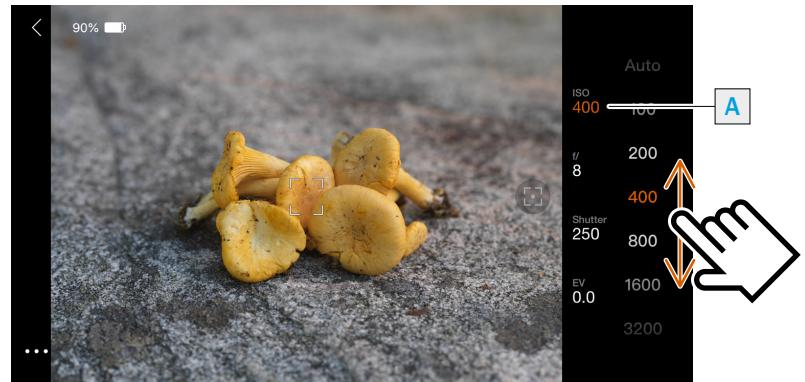
Preview settings E

Select if and for how long a preview of the captured image will be shown before returning to live view. Choose between 2s, 4s, 8s or Hold by sliding sideways.



ISO setting

Tap the ISO value **A** to bring up the settings list. Slide the list to select a new value. Tap the ISO value again to confirm.

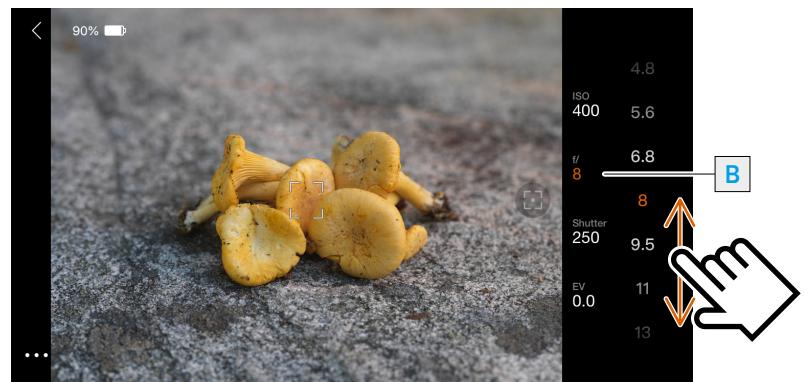


Aperture setting

Tap the aperture value **B** to bring up the settings list. Slide the list to select a new value. Tap the aperture value again to confirm.

Note!

If the aperture value indication is shown in grey color, it is set by the camera and cannot be changed from PM2.

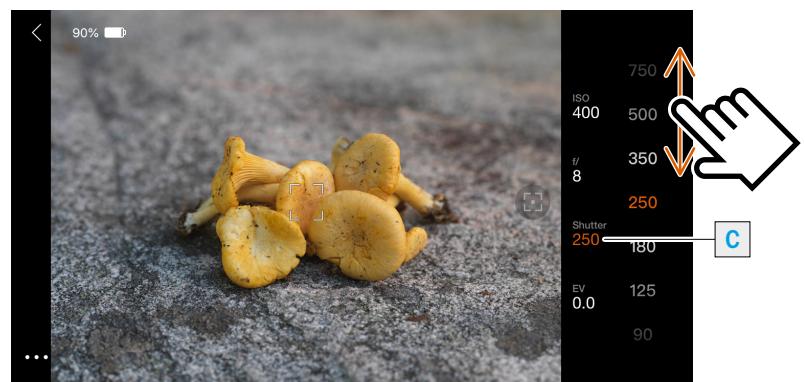


Shutter speed setting

Tap the shutter speed value **C** to bring up the settings list. Slide the list to select a new value. Tap the shutter speed value again to confirm.

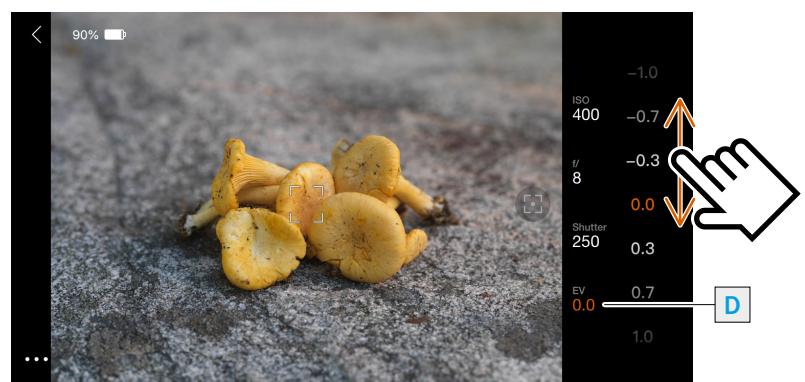
Note!

If the shutter speed indication is shown in grey color, it is set by the camera and cannot be changed from PM2.



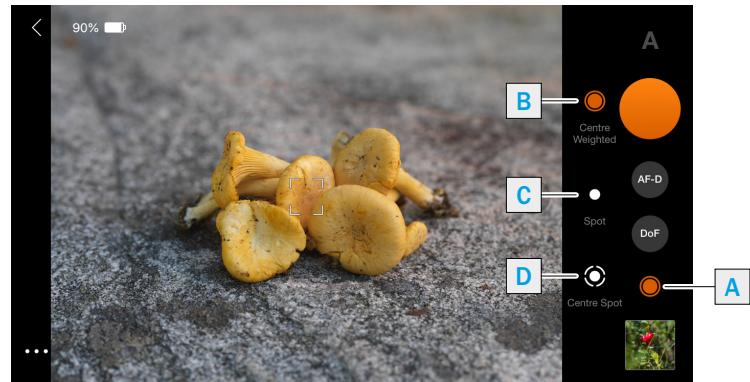
Exposure adjustment setting

Tap the EV value **D** to bring up the settings list. Slide the list to select a new value. Tap the EV value again to confirm.



Light metering mode setting

Tap the light metering mode icon **A** to bring up the settings list. Tap any of the icons **B**, **C** or **D**. Finally, tap the light metering mode icon again to confirm.



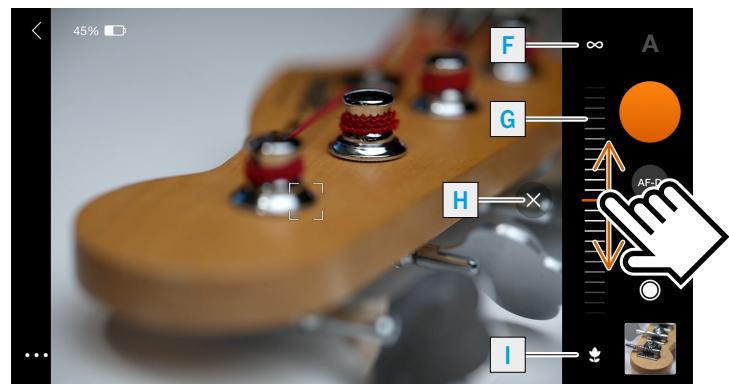
Manual focus control

From the live view screen, tap the manual focus icon **E**.



Focus by sliding the scale **G** vertically or by tapping the icons **F** or **I**. Focus toward infinity by sliding the scale up or tap the infinity icon **F**.

Tap the cross **H** to exit manual focusing.



DoF preview

From the live view screen, tap the **DoF** icon **J**. The aperture is stopped down for a preview of the actual depth-of-field. Tap **DoF** again to open the aperture.



Browse recent captures

From the live view screen, tap the miniature icon **A**. The single image view **C** is shown. This differs slightly from the screen "Browse images on the camera" on page 140 as it only shows images captured in the last live view session.

Download image

To download one image from the camera to the iPhone, tap the download icon **D**. A screen showing the download progress appears **D**.



Delete image

An image can be deleted by tapping the delete icon **B**. A confirmation dialogue **E** will appear.

If the same image exists on both the camera and the iPhone, the dialogue **F** is shown. If you only want to delete the image on the camera, tap **Delete camera images**. To only delete the image on the iPhone, tap **Delete local album images**. To delete the images on both iPhone and camera, tap **All**.



Note!

The images cannot be recovered once they are deleted.

Continued on the next page.

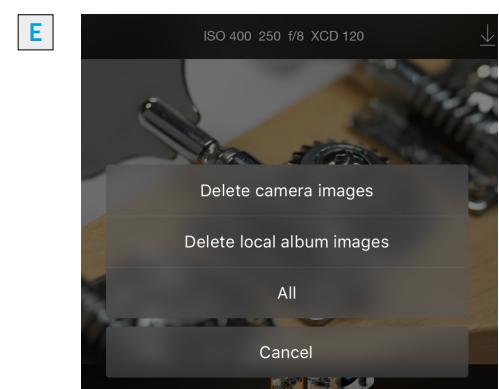
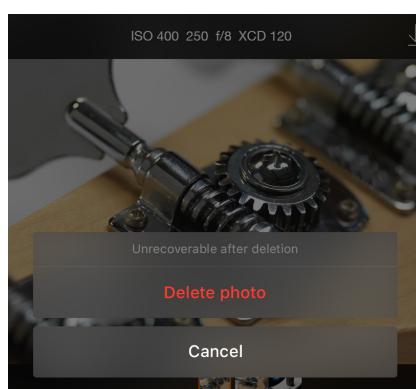
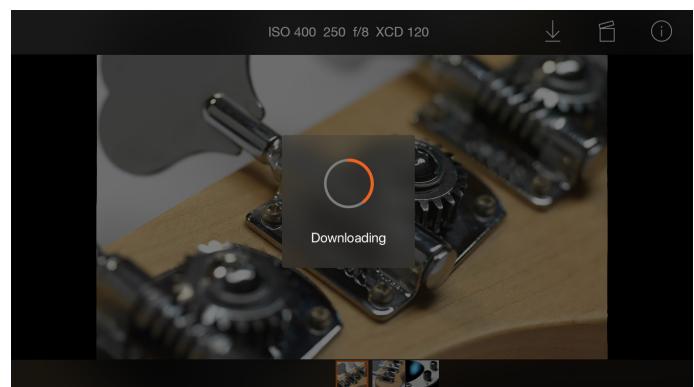
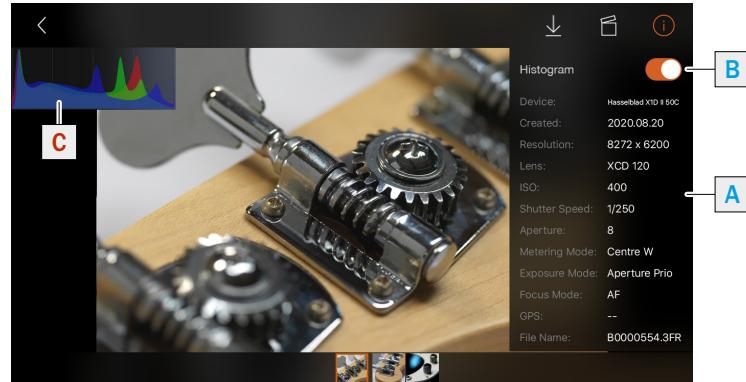


Image capture data

Tapping  shows extended image capture data **A**.

From this screen you can also turn an RGB histogram **C** on or off by tapping the On-Off icon **B**.



Keyboard Shortcuts

Print the relevant list for your platform and keep it handy for quick reference.

You can temporarily tape it to the side of your monitor until you are more familiar with the shortcuts.

phocus[®] MAC		phocus[®] WIN
Preferences	⌘ + ,	
Hide Phocus	⌘ + H	
Hide Others	⌃ + ⌘ + H	
Quit Phocus	⌘ + Q	
Capture	⌘ + N	
Close	⌘ + W	
Export	⌘ + S	
Export as Previous	⌃ + ⌘ + S	
Import	⌃ + ⌘ + I	
Modify	⌃ + ⌘ + M	
Print	⌘ + P	
Move to Trash	⌘ + ⌄	
Undo	⌘ + Z	
Redo	⌃ + ⌄ + Z	
Cut	⌘ + X	
Copy	⌘ + C	
Paste	⌘ + V	
Select All	⌘ + A	
Deselect All	⌃ + ⌄ + A	
Add/Remove from Quick Collection		
Remove Crop	⌘ + B	
Save Adjustments	⌃ + ⌘ + S	
Reload Adjustments	⌃ + ⌘ + R	
Use Last Saved Adjustments	⌃ + ⌄ + U	
Map	⌃ + ⌘ + M	
Slideshow	⌃ + ⌘ + L	
Grid	⌃ + ⌘ + G	
Grid Options	⌃ + ⌄ + G	
Overlay	⌃ + ⌘ + O	
Overlay Options	⌃ + ⌄ + O	
Shadow warning	⌃ + ⌄ + S	
Highlight warning	⌃ + ⌄ + H	
Warning Options	⌃ + ⌄ + W	
Next Image	→	
Previous Image	←	
Compare Image	⌃ + ⌄ + C	
Zoom In	⌘ + +	
Zoom Out	⌘ + -	
Fit to Window	⌘ + O	
Zoom to 100%	⌃ + ⌄ + 0	
Larger Thumbnails	⌃ + ⌄ + +	
Smaller Thumbnails	⌃ + ⌄ + -	
Fit Thumbnails	⌃ + ⌄ + 0	
Live Video	⌘ + L	
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		Compare view
		Visualize Adjustment Layer
		Zoom tool
		Drag overlay
		Single-shot capture
		Multi-shot capture
		Minimize Phocus
		Toggle 4-way Keystone tool

Frequently Asked Questions

Q. I have downloaded Phocus but it won't launch!

- A. Check that both your computer and operating system are compatible with Phocus. You can find this information in the Read Me file that follows each version of Phocus.

Q. Where can I get the latest version of Phocus?

- A. You can download the latest version via our web page—www.hasselblad.com—under the **Support > Manuals > software-current** section (Log-In required)

Q. How do I add my adjustments to a number of images?

- A. Firstly, select the images you want to modify, then click the **Modify** icon in the **Toolbar**. A dialog opens allowing you to select the desired settings that you have set in **Tools**. Click **Modify** to affirm.

Q. How do I get my exported images to open in my preferred image editing software?

- A. You can choose an image editor in the **Preferences** menu (**Toolbar > Preferences > Image Editor**). Selected images will then open automatically, when double-clicked in the **Queue**, in the chosen software.

Q. Why are there 3FR and 3F files? Why can't captures be saved directly as 3F files?

- A. 3FR files consist of native Hasselblad raw data that contains a huge amount of information, particularly when compared to 35mm digital files. This is essential to produce the level of quality expected from Hasselblad products. It follows that a good deal of computing power is required to extract the maximum in the shortest possible time. To avoid diverting the camera's activities to image processing, the combined advantages of Phocus and a workstation are used instead. 3FR files are then processed into a complete and workable raw format that can be saved, adjusted and exported, namely, 3F.

Q. What's the difference between 3FR and 3F files? Should I keep them all?

- A. A 3FR file is the native raw file created by Hasselblad cameras and remains in that format when stored on a CF card. When loaded into Phocus, however, various corrections take place based on the hardware configuration of the camera used. This processes the 3FR file into a 3F format file and creates a high quality preview (size according to settings in Preferences). As this is an improved and specifically-tuned file, the original 3FR file can be discarded. You may, of course, export 3F files to TIFF, PSD, JPEG etc., and just keep those but if you have the space, retaining the 3F files could be good insurance to be able to re-process sometime in the future.

Q. Why does it take a while to see the Viewer image in Phocus? It seems much faster with other programmes.

- A. In contrast to some other programmes, Phocus produces a full image in the **Viewer**, not a quick low-resolution version. What you see is what you will get (if your monitor is capable of showing it). Hasselblad files are naturally very large and demand a good deal of processing power so you will also see differences in speed on different platforms/configurations. See the **Read Me** files for more information about performance.

Q. I want to save time. What are the disadvantages of exporting Hasselblad captures directly from the browser?

- A. Exporting 3FR or 3F files directly generates files that exclude the complete set of advantageous adjustments such as white balance, lens corrections, moire, etc. However, this might be acceptable for a rushed set of 'contact sheets' for a waiting client. As long as the 3FR/3F files are retained, you can always go back and export a selection, this time with the full benefits that Phocus offers for optimum quality.

Q. Is there a way to access frequently used folders in an easy way in Phocus?

- A. You can use the **Favorites** section in the **File Browser**. Drag selected folders to just beneath the **Favorites** heading to make a collection.

Q. How do I get an overview of the keyboard shortcuts used in Phocus?

- A. There is a keyboard shortcut list in this user manual. Print it out and keep it handy for quick reference or you can tape it onto the side of your computer screen.

Q. Will 3F files generated by Phocus be backwards compatible with FlexColor?

- A. No, you will not be able to open 3F files generated by Phocus in FlexColor. 3F camera files generated by FlexColor will however be compatible with Phocus.

Q. My thumbnail image does not reflect changes made to the image in the Viewer.

- A. The thumbnail image will not reflect changes until you click the **Save Changes** button (**Toolbar > Adjustments > Save Changes button**). See **Adjustment** section in this user manual for further information.

Q. How do I get crops to show up on my thumbnail images?

- A. Click on the icon in the upper right corner of the thumbnail browser to open the menu. Check the **Show Crop** box, make the crop and choose **Toolbar > Adjustments > Save Changes**.

Q. I exported some 3FR files directly to TIFF but I forgot to turn off the tool settings I had for a previous batch of files. Have those TIFF's now been adjusted according to the current Phocus settings?

- A. No. Phocus uses the **Standard** setting for such direct export and so no individual tool settings have been applied.

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