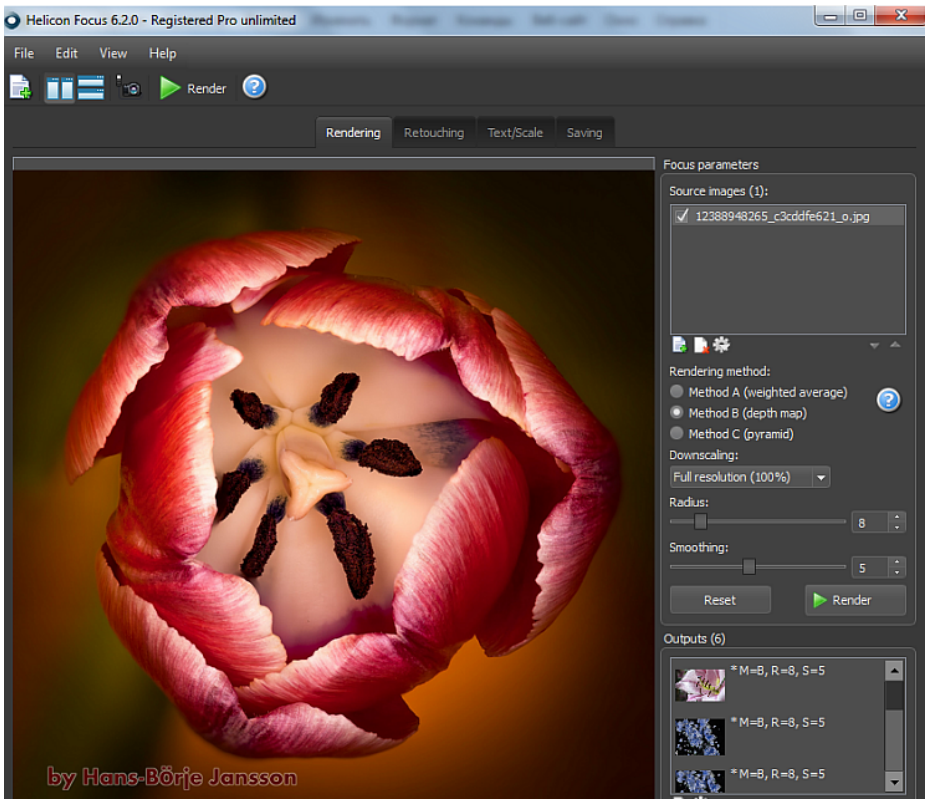
Helicon Focus Help



The latest updated version of Helicon Focus Help is available on our Web site.

Try out our Video tutorials to learn how to get the most of Helicon Focus.

On our Web site you will also find reviews and Articles giving lots of useful tips on stack shooting, focus stacking, tethered photography, using rails and other special equipment.

Focus stacking

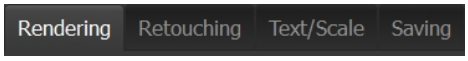
Helicon Focus is a software for focus stacking and micro panorama stitching. No matter if you are an amateur making first steps in photography or a laboratory scientist using state-of-the-art optics, you will be impressed by how easily and smartly Helicon Focus meets any challenge.

This software is a unique focus stacking tool allowing to achieve images with theoretically unlimited depth of field. It means that if you have a number of partially focused photos, or a stack, the program will render it into a fully focused image by combining the sharpest areas from each photo of the stack.

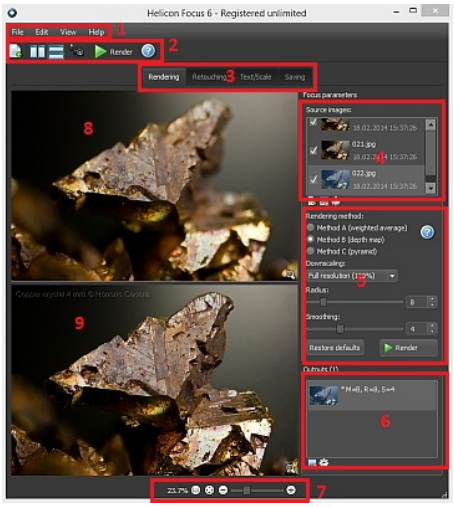
If you are new to focus stacking, first we suggest you to watch video tutorials available on our Web site.

Rendering

The main work screen has four tabs that one by one will lead you from opening of source images to saving of the output one.



The Rendering tab is the starting point and the main workspace in Helicon Focus. Here you open the source files, set the focus stacking parameters, launch rendering and preview the results.



1 - Menu bar
2 - Toolbar
3 - Workspace tabs
4 - Source images
5 - Render parameters
6 - Output images
7 - Zoom controls
8 - Current source image (top or left)
9 - Current output image (bottom or right)

Source Files

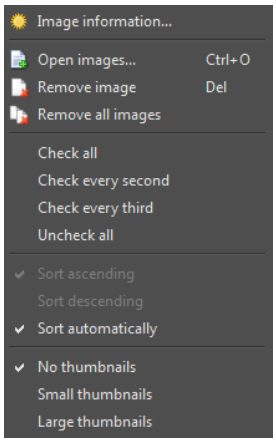
Opening Source Files

There are plenty of ways to open source files. Once using Helicon Focus becomes a part of your regular image processing routine, you will choose what is more convenient for you. For now here are all of the options:

- drag the images onto the main screen
- press the button on the program toolbar
- use the main menu option: File → Open images
- right-click on the Source images list and choose the Open images option
- press the button right below the Source files list
- use the Ctrl/⌘+O shortcut

Now the Source images list shows which files will be processed (stacked) once you press the Render button. The list of source images will be updated each time you choose another output image, showing the files that were used to render this result.

The Source images list has a context menu that can be called by right-clicking on any of the images on the list or by pressing the button. This menu gives you several options:



- **Image information** - shows histogram of the current image, its file and EXIF information
- **Open images** - allows to open other source images. Please be aware that it will start a new source image list and the current one will be cleared
- **Remove image** - removes the current image
- **Remove all images** - clears the current image list
- **Check all, Check every second, Check every third** - selects the files to be processed. Checking every second/third option might be quite useful if you have a very long stack with DOF overlapping a lot. If this is the case and you see that you don't need that much images for a proper result, cut the rendering time by choosing one of these options
- **Uncheck all** - unchecks all the files on the list
- **Sort ascending, Sort descending, Sort automatically** - sets sorting order for the source files list. **Sort automatically** option enables the program to analyze the stack and automatically reverse the order of images if needed, allowing to avoid banding artifacts along the image edges
- **No thumbnails, Small thumbnails, Large thumbnails** - allows to adjust the appearance of the list.

Removing Source Files

To remove one or more files from the Source images list, select one or multiple images holding down the Ctrl/⌘ key. Then right-click on one of the highlighted files to call the context menu and choose the Remove image option. You can also click the relevant button right below the Source images list or just press the usual Del.

Please note that removing images from the list doesn't delete the files from the disk.

Rendering Methods

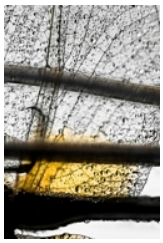
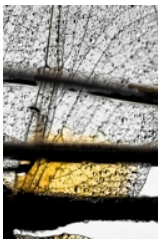
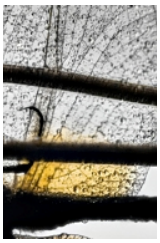
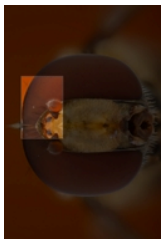
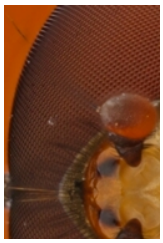
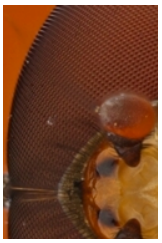
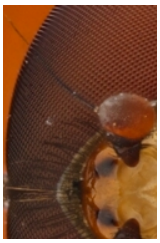
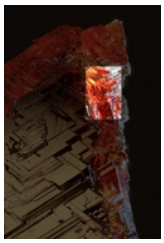
You can choose between three algorithms of focus stacking: methods A, B, and C.

Here's a brief explanation of each method and its most typical applications:

- **Method A** computes the weight for each pixel based on its contrast and then forms the weighted average of all pixels from all source images. This method works better for short stacks and preserves contrast and color.
- **Method B** selects the source image containing the sharpest pixel and uses this information to form the "depth map". This method imposes strict requirements on the order of images - it should always be consecutive. Perfectly renders textures on smooth surfaces.
- **Method C** uses pyramid approach to image processing dividing image signals into high and low frequencies. Gives good results in complex cases (intersecting objects, deep stacks), though increases contrast and glare.

For those who want to investigate the technical processes standing behind each method we've prepared a more profound overview of analysis algorithms.

Although it's your personal experience that will be your guide in choosing the right rendering method, we will give you some practical tips in the table below.

	Method A	Method B	Method C
Multiple crossing lines, complex shapes	+	−	++
			
			
Images with a glare	+	++	−
			
Long stack (> 100 images)	−	+	++
Non-consecutive (random) order of images	+	−	+
Preserving color and contrast as a priority	++	++	+

Although C method can cope with some stacks shot in non-consecutive order, we still strongly recommend to shoot images in correct order, i.e. either from fore- to background or vice versa. Right shooting order is one of the preconditions for good focus stacking results.

Selection of the most suitable method depends on the complexity of the stack, the number and the order of images and other factors. So there can't be any strict rule as for the optimal choice, and we do recommend you to try all of them.

Downscaling

Once you opened the source files you have an option to resize them for further processing. With Helicon Focus it is easy - just choose the percentage value and start rendering. Processing of downscaled images will save you quite a bit of time. The images are only resized for processing in Helicon Focus, no changes are actually made to the files on the disk.

Radius

The Radius parameter is one of the two main controls to be adjusted, it is only available in A and B methods.

When performing focus stacking the program analyses each pixel of the source image in order to define if it is in focus. Then the detected focused areas from the whole stack are combined into one output image. Radius is the control that regulates the size of the analysed area around each pixel.

In order to get some more practical understanding of this parameter, let's consider two most typical cases.

The first one is the image with fine intersecting details (close-ups of insects, fur, bristles etc.). Here the smaller the value of the Radius is the sharper are the intersecting details. On the other hand, you should keep in mind that there might also be artifacts on smooth, solid-color surfaces, so you need to find a compromise.

Here are two stacking results rendered at a different radius, both by B method.

Method B, Radius = 1 Method B, Radius = 22


Another quite typical example will show advantages of higher Radius values - minimizing halo or other artifacts along the object edges. As you can see from the photos below, increasing the radius allows to almost eliminate the halo effect. Excessive increase of the Radius value will affect details, so again - find a smart compromise.

Method B, Radius = 2 Method B, Radius = 22

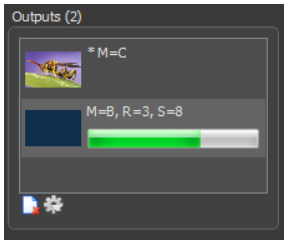

Experiment with your stacks, compare results and very soon you will find the right balance.

Smoothing

Smoothing is the second of the two main focus stacking parameters for A and B methods. When analyzing the stack, the most sharply focused areas of the source images are found to be combined into one output image. For A method smoothing defines how these sharp areas will be combined. Low smoothing produces a sharper image, but the transition areas may have some artifacts. High smoothing will result in a slightly blurry image, though without any visible transition areas. For B method this value defines how depth map will be smoothed out.

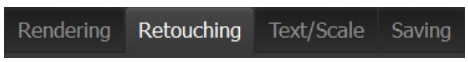
Note: if when readjusting the controls you want to get back to default settings, just right-click on the slider of the parameter you want to reset. This works for all controls in Helicon Focus.

Outputs List



Once you press the Render button the stack processing starts. All resulting images and processing progress bars will appear in the Outputs window in the bottom right hand corner. Here you will find all the results produced during this working session. Select the output, and the source images that were used to render this result will be displayed in the Source images list above. The Outputs window also contains brief info on the stacking parameters. Next to the thumbnail of each output image you will see the following symbols: M standing for method, R - for radius and S - for smoothing.

Retouching



In some cases you will need to do some retouching of the output image. On the Retouching tab we have three main brushes - **Copy from source, Clone** and **Erase**. You can choose the brush in the right part of the tab.

Copy from source

If you already tried to create a nice stack yourself, you know that it can be quite challenging due to a range of external factors affecting the shooting process. So sometimes you will have blurring, banding, halo or other artifacts. Much of them can be fixed with the Copy from source brush . The idea of this tool is that it will allow to replace artifacts on the output image by the same area from the relevant source image.

Both images will appear to you perfectly synchronized, even when zooming in or out. The output image will be displayed on the right.

On the left - one of the source images, on the right - the output image right after rendering (the antennae were moving during shooting, so the software displayed antennae from all the source images on the resulting one).

In order to copy the area from the source to the output image, choose the Copy from source brush , pick the appropriate image in the Source image list, i.e. select the image where the "problem" area looks better than on the other ones. Then adjust the brush parameters and paint.

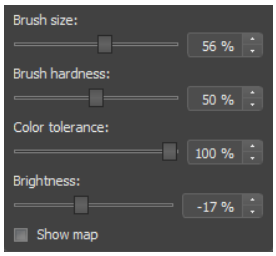
On the left - one of the source images to copy from, on the right - the output image with Copy from source brush applied.

You can choose the source image you need manually, by going over the list in the Source images window. But there's also another option, which is especially relevant for long stacks. Position the brush on any part of the output image and you will see the name of the file it was taken from. Press F9 key and this source image will be immediately loaded to the left window. Use Page Up and Page Down keys to navigate through the source image list.

Helicon Focus has another great feature that allows to get even better rendering results. As you already know, each rendering method has its advantages and works better for different parts of the image. Sometimes in order to get perfect result you need to combine parts of the output images rendered by different methods and rendering parameters. To do this, press the **Use another output as a source** button below the Source images list to choose one of the output images that will serve as a source one. This possibility is only available in Pro version.

Brush Parameters

There are four main brush parameters:

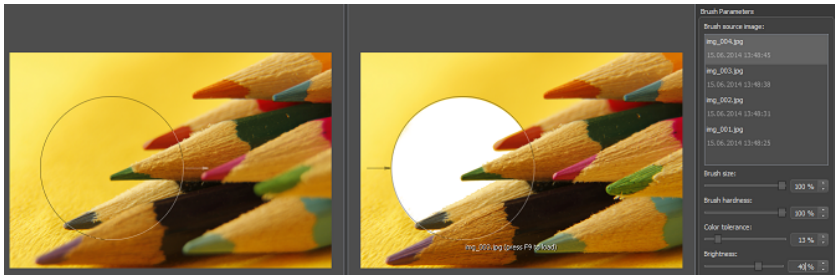


Brush size - sets the diameter of the copied area. Minimize it for more fine and precise strokes.

Brush hardness - sets the hardness/softness of the brush edges. With high values the brush stroke will have sharper edges, with lower ones the copied element will blend better into the target image.

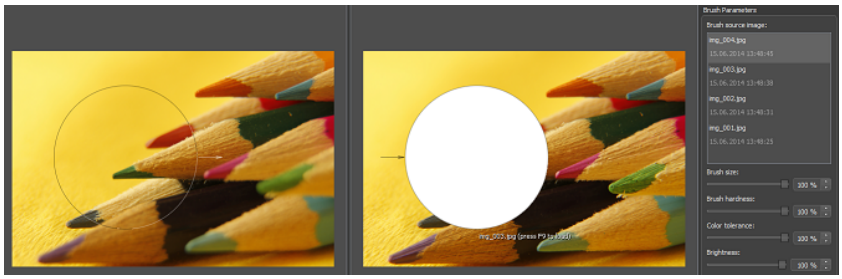
Color tolerance - makes the brush "smart". When set to 100% it will allow to copy all (100%) pixels in the painted area, whereas setting to lower values will make the brush select pixels to be copied by their color - only those pixels will be copied that have similar color to the central one in the painted area. For instance, this option becomes truly essential when it comes to dealing with fine details or complex outlines that you need to leave as it is while copying the background.

This simple example will show you how it works:



Color tolerance set to low value - the brush is applied only to yellow background, leaving pencils in the foreground intact.

NB: Brightness was set to a high value just to make it more demonstrative.



Color tolerance set to maximum - brush is applied to all pixels within the copied area.

Brightness - makes copied pixels either brighter or darker to match the brightness of the output image.

Check the **Show map** option to highlight the part of the current source image that was used for creation of the output one.

For more convenience of precise and fine retouching of 100% scale high-resolution image, use the **Grid** feature. The Ctrl/⌘+G shortcut will show/hide the grid that will serve as a reference helping you navigate within the zoomed image.

Cloning

The second brush type allows to copy fragments within the output image. Choose the brush and one of the options: Clone area or Paint with pattern.

With Clone area the source and the target cloning areas are moving in parallel, whereas the Paint with pattern sets the source spot and allows to clone it to any target area.

The example below will show you the difference between the Clone brush types.

The first is the Clone area brush with default brush parameters. As you can see, the parallel movement of the source and the target aresa enables to actually clone any element within the output image.

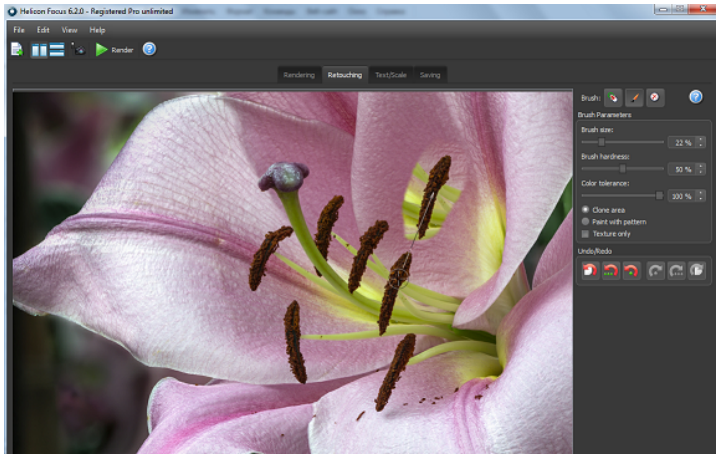


Photo: Asian Lily ©Walt Polley

Next brush type is Paint with pattern. This one allows to choose the pattern on the output image and to paint the target area.

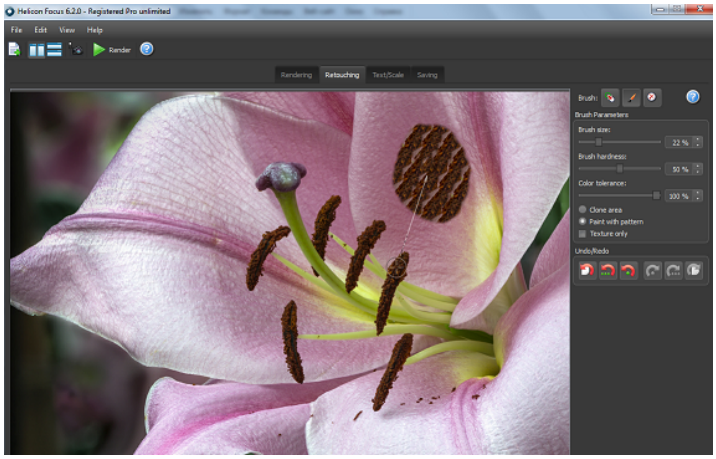


Photo: Asian Lily ©Walt Polley

The Texture only option allows not to copy the part of the image completely, but to clone just its texture leaving the background color intact.

You can also visit our Video tutorials page to see all these brushes in action.

Eraser

In order to cancel the unwanted changes, use Undo buttons to undo a point, a stroke or a brush. But sometimes it is more convenient to use the Eraser . Adjust the brush settings just as you did with other retouching brushes and go over the parts of the image that you want to be back to initial state.

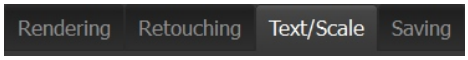
Retouching in several sessions

If you want to close the program and continue retouching the image later, you can save the project file and get back to it another time. This saving option will keep all the changes that were done to the source images and the output one, including all the adjustments and retouching history, so that you can even undo the changes during the next retouching session.

To use this option go to the main menu\File\Save project file... Choose the folder, and all the necessary info will be saved to the *.hproj file.

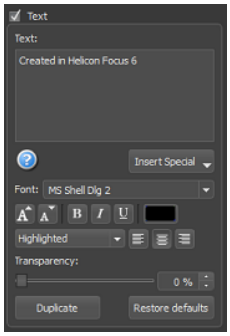
To continue working with this project go to the main menu\File\Load project file...

Text/Scale



On the Text/Scale tab you can add a scale bar and one or several lines of text to your image.

Adding Text



Check the Text box to add or to remove text from the image. Once it is "on" you can type the text that you want to be written on the image in the Text window.

The Insert special menu allows to insert special symbols (© and µ) and image metadata, such as date, time, aperture, ISO, etc.

The font can be selected from the Font list.

buttons change the font size; buttons change the text style; the color picker allows to select the font color.

The drop down box below allows to choose the text effects: highlighted, shadowed, embossed paper or no effect.

Use buttons to align the text.

The Transparency sets the opacity of the text.

To duplicate current text box, click on the Duplicate button.

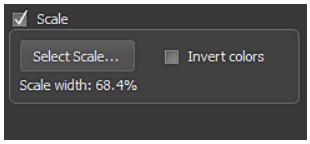
Restore to default button will not only restore the default text parametres, but will also remove all the text boxes you've created.

To edit existing text, first click on it (selection will be marked with a green rectangle) and then edit its contents or properties.

Adding Scale Bar

Sometimes it's difficult to understand the dimensions of the object on the image without any reference. The Scale bar option was designed to solve this problem.

To add a scale bar to your image, check the Scale check box.



To select the appearance of the scale bar, click on the Select Scale... button and choose one of the offered images.

You can also add your own scale bar type by clicking on in the Select Scale window and locating the image to be opened. The scale bars are typically black and white. To invert colors, check the Invert colors check box.

The Scale width shows scale size against the image width. This value can be used to calibrate the scale using objects of known size.

Typically, the scale calibration process will look like this:

1. Shoot a stack of an object of known size. It can be a stack consisting of at least two images. For example, a regular school ruler can be taken as a reference object.

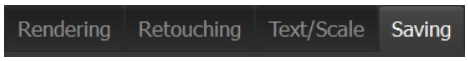
2. Render this short stack, go to Text/Scale tab, check the Scale check box, choose the scale bar type and stretch it to match the known dimension. This will define the correspondence of real life dimensions to the Scale bar width in %.

3. Resize the scale bar proportionally, depending on what scale bar length you need for the further reference. Here's an example: let's say that we have dice with edge length of 3.0 cm, which corresponds to the Scale bar width of 70%. For more convenience we prefer a scale equal to 1 cm, which corresponds to 20% (1 cm x 70% / 3.0 cm=20%).

Now you can add this scale to other images to provide some reference.

Of course, this workflow is only applicable for images made in identical shooting conditions (the same lens, focus, camera position).

Saving



On the "Saving" tab you can save or export the resulting image.

Save...	Allows to save the resulting image in JPEG or TIFF format. The default name of the file is formed automatically.
Print	Opens Helicon Print utility (Windows only). It allows to create a queue of images and then print them out with one click. Read more about it here.
Open in Helicon Filter	Helicon Filter is an image processing software from Helicon Soft Ltd. (Windows only). Here you can do basic things such as cropping, resizing, correcting brightness and contrast, adjusting white balance, sharpening etc. in just few clicks. But Helicon Filter offers more than just basic operations: it also includes many advanced features. Read about all the features here.
Export 3D Model	Creates a 3D model and opens it in Helicon 3D Viewer; here you can adjust the model and save it in a variety of formats. Read more about Helicon 3D Viewer here.
Create Animation	Creates an HTML page with JavaScript animation of the stacking process. Check the video tutorials on our Web site to see how it works.
Save Depth Map	Saves depth map as a grayscale image. This image can be used for relief measurements or for 3D modelling.
Export Layers	Saves aligned layers as semitransparent PNG files. The tranparency is set in such a way that a stack of these layers in Photoshop gives resulting image.
Copy Result to Clipboard	Allows to copy the resulting image to clipboard.
Publish to Web	Automatically converts, resizes for the web and uploads your image to Helicon Soft secure server with just one click. You will also get a unique URL that you can immediately send to anybody to share your image.

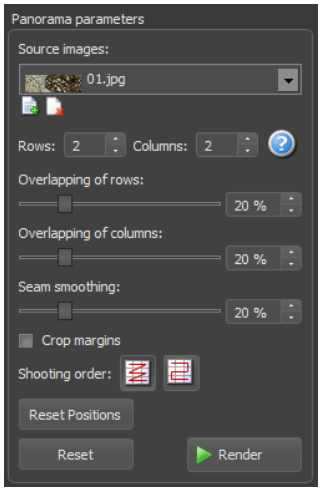
Micro panorama

Please note that the micro panorama function is only available in **Pro** version.

The micro panorama function is designed to stitch images made through a microscope. It may fail to stitch images that were made by camera rotation on the tripod.

The program aligns images based on the Panorama autoadjustment settings (main menu\Edit\Preferences\Autoadjustments). The program only shifts images to align them, no magnification or rotation is applied.

Micro Panorama Parameters



The **Rows** control sets the number of rows in your panorama.

The **Columns** control sets the number of columns in your panorama.

The **Overlapping of rows** sets the overlapping value of adjacent rows. Move the slider until you see the pattern on the images merge.

The **Overlapping of columns** defines how adjacent columns overlap. The images can be also moved manually, with a mouse, and it's a great feature sometimes allowing more precise alignment of images.

The **Seem smoothing** sets the width of seams with gradient transparency.

Check the **Crop margins** box to crop the resulting panorama in a way to remove the blank spaces formed after shifting of its elements.

With **Shooting order** parameter you set the order in which the images of panorama were shot. There are two ways to shoot panorama: each row from left to right, or odd rows (1,3,5,...) from left to right and even rows (2,4,6,...) in the reverse direction. And in any case rows should be shot in consecutive order, i.e. the 1st, the 2nd, the 3rd etc.

The **Reset positions** button allows to restore the original position of images after you dragged them with mouse.

The **Reset** will restore the default values of panorama settings.

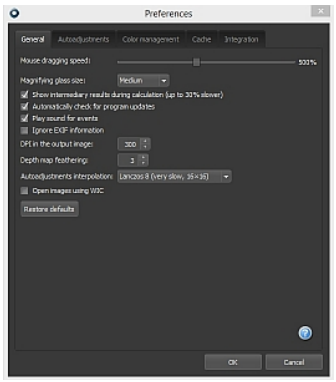
Shooting Micro Panorama

- Set your digital camera to **manual exposure mode** (shutter speed, aperture, ISO). Otherwise images may have different brightness.
- Position the subject to shoot the upper left part of it.
- Take a shot. Use the remote control (if available) to minimize camera shaking.
- Move the subject to the left so that adjacent shots overlap by 20-30%.
- Take a shot.
- Move the specimen laterally, then up to start the next row.
- Take shots until you cover the whole subject.

Program preferences

To open the Preferences dialogue, go to the main menu\Edit\Preferences.

General



Mouse dragging speed - sets correlation between movement of the mouse and shifting of the image. It makes navigation in the main window faster, especially when working with zoomed images.

Magnifying glass size - defines the size of the virtual magnifying glass that appears if you left-click on the image.

Show intermediate results during calculation - enables screen updating during processing. Please note that it will add another 30% to total processing time!

Automatically check for program updates - if enabled, the program will check for updates by connecting to Helicon Soft server each time when started.

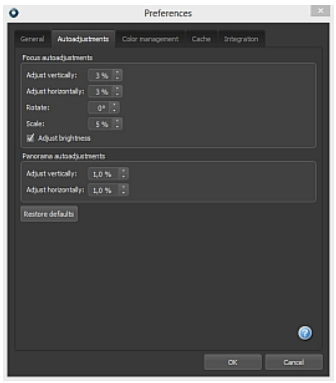
Play sound for events - turns the sounds of processing completion on/off.

DPI in the output image - defines how much DPI you want to have in the output image.

Depth map feathering - the degree of smoothing of the depth map used in method B.

Autoadjustments interpolation - allows to choose the interpolation principle. Slow methods preserve details better, though it is hardly noticeable.

Autoadjustments



Focus Stacking Autoadjustments

Even if you shoot a stack from a tripod and the subject is completely still, the images in the stack will not be perfectly aligned. It means that even with good shooting conditions, the subject will slightly change its size on the image every time the focus is shifted. So during focus stacking the program has to somewhat scale and sometimes rotate and shift images in order to align. This group of controls allows to fine-tune the alignment properties if needed.

Adjust vertically - sets maximum vertical shift between two consecutive images of the stack in % of their width or length, whichever is greater.

Adjust horizontally - defines maximum horizontal shift between two consecutive images in % of their width or length, whichever is greater.

Rotate - defines maximum angle between two consecutive images in degrees. Usually not needed for microscope and tripod shots.

Scale - defines maximum difference in subject size between two consecutive images in % of their width or length, whichever is greater.

Adjust brightness - defines whether brightness of consecutive images should be equalized.

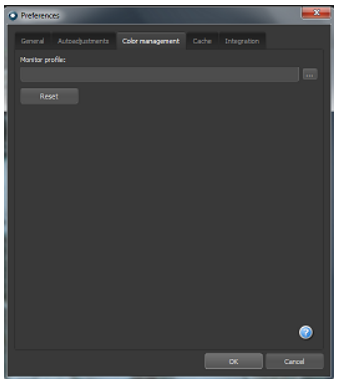
Panorama Autoadjustments

Group of settings related to processing of the panorama stack.

Adjust vertically - defines maximum vertical shift between two consecutive images in % of their width.

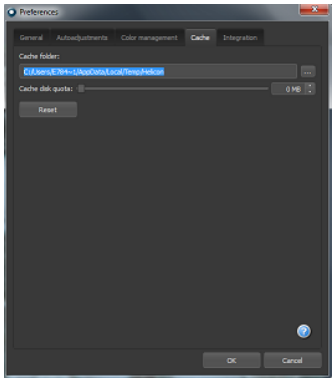
Adjust horizontally - defines maximum horizontal shift between two consecutive images in % of their width.

Color management



Monitor profile is used to represent images on the monitor. Your monitor has its own color profile that was saved to the system folder during monitor installation. Helicon Focus will pull up the appropriate default monitor color profile, but you can set an alternate one if you wish.

Cache

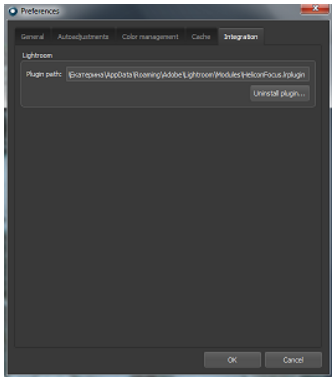


Cache folder indicates the path to the folder used for storage of temporary files (TIFFs from loaded RAW files, downscaled images if the Downscaling option was enabled, the retouched image). The cache is cleared when the program quits; if it fails to clear cache on exit, it will try to do it during the next startup.

Cache disk quota - sets disk space quota for the cache folder.

Integration tab

The path to Helicon Focus plug-in for Lightroom is given on the Integration tab of the Preferences menu.

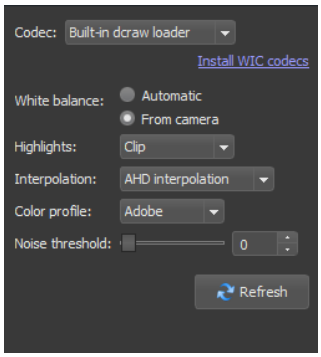


You may need it if you have several versions of Lightroom installed on your computer or you have problems with running HF module. If so, please make sure that the plug-in was installed to the right Lightroom folder.

Advanced functionality

Raw development settings

Helicon Focus allows processing a variety of file formats, including development of RAW files. Once you open the RAW source image, additional settings menu will appear under the Source image list. It enables more precise adjustment of rendering parameters.



There are six main controls here:

Codec: DCRAW is used by default, but here you also have an option to choose the codec yourself. To do so, go for Install WIC codecs (Windows only).

White balance: choose if you prefer Helicon Focus to set the white balance automatically or to use the white balance settings as set when shooting.

Highlights: choose the highlight recovery mode - Clip (clips highlights to increase contrast), Unclip (leaves highlights unclipped, may give a pink hue), Blend (blends clipped and unclipped values), Rebuild (reconstructs overexposed areas from the adjacent properly exposed ones).

Interpolation: choose the demosaicing algorithm - Linear (basic, but fast), VNG (Variable Number of Gradients), PPG (Patterned Pixel Grouping), AHD (Adaptive Homogeneity-Directed), DCB.

Color profile: choose the color space defining the range of colors, tones, brightness of the image - Raw, sRGB (the smallest range of colors and tones, but the most commonly used), Adobe (wider color range, though not supported by some browsers and requiring special viewing software to reproduce the colors correctly), ProPhoto (the widest range of colors, 16-bit processing recommended).

Noise threshold: the higher the noise threshold value is, the more noise is removed, though the more details might be lost. Normally optimal values lie in between 100 and 1000.

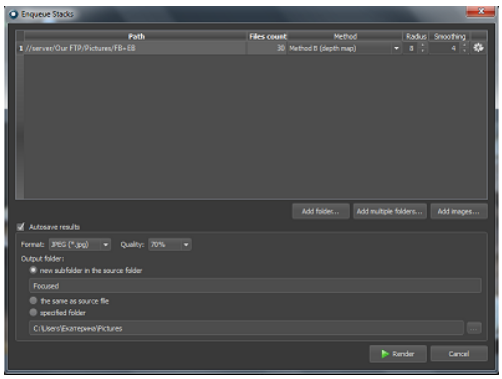
Split and enqueue stacks

This is a great feature allowing to optimize and speed up the multiple stack rendering process. Any Helicon Focus version allows to add several stacks one by one, loading each of them to the source list and setting rendering parameters for each stack. Enqueue stacks dialogue mode makes it easier allowing to load a bunch of stacks at a time, to adjust parameters for each or for all of them for further rendering.

And not only that, there's another tool that is very helpful for stack processing - stack splitting. If you have several stacks in one folder, it is usually time-consuming to sort the whole pile of images into separate stacks. And sometimes it may even be quite problematic to make it, especially if you were shooting the same subject several times with slight difference in settings. Helicon Focus will split images into stacks for you. It's quite easy - read the detailed instructions below.

Enqueue stacks:

1. Open Enqueue stacks window: Helicon Focus main menu\File\Enqueue stacks...



2. Add images, folder or several folders.

3. Set rendering parameters - method, radius, smoothing.

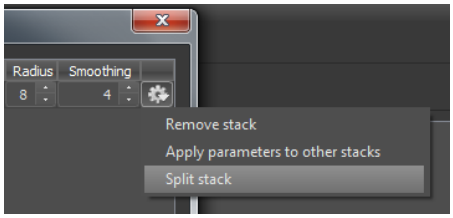
4. Adjust Autosave settings - choose the output image format, quality and target folder.

5. Press Render button to start processing.

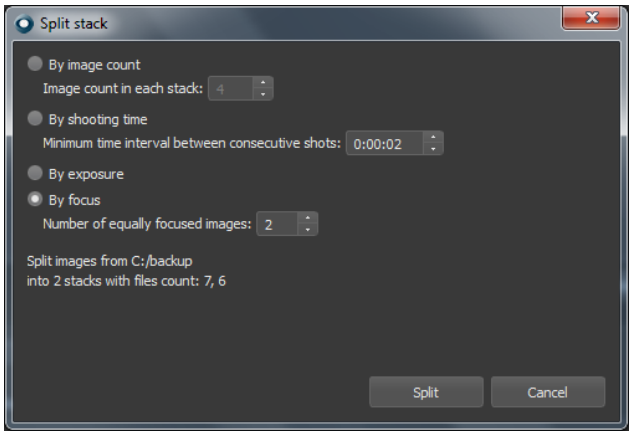
The button next to each stack will open a small pop-up menu, allowing to Remove the stack (just from the list, not from the disk), to Apply current rendering parameters to all other stacks and to Split stacks.

Spilt stacks:

1. Open Enqueue stacks window: main menu/File/Enqueue stacks...
2. Add the folder to be split.
3. Choose Split stack in the menu.



4. Adjust the parameters - choose if you want stacks to be split by number of images, by minimum time interval between shots or by exposure. Read more detail below.



The last line will give you the summary of how many stacks you'll get with these splitting parameters.

5. Press the Split button.
6. Proceed as with other enqueued stacks.

Split by image count - will be useful if you have several stacks of equal number of images.

Split by time - will be helpful if you do not know the exact number of images in stacks, but know the minimum time interval between shooting sessions.

Split by exposure - this splitting method is used for a specific shooting mode. If you were shooting stacks using Helicon Remote which allows exposure bracketing, go for Split by exposure and it will make all the sorting for you.

Split by focus - if you make series of shots with the same focus, this splitting option will become very useful. Indicate the number of series of shots with the same focus, and Helicon Focus will split stacks in a way that each of them will contain only equally focused images. For instance, it might be very helpful for panorama processing, when you set the focus and make series of shots, then adjust the focus and repeat the shooting.

No matter which method you choose, the images will be split into stacks only virtually for further processing in Helicon Focus, no actual folders with stacks will be created on the disk.

Dust map

If there are dust particles on the camera sensor or in the optical system of the microscope, it will result in black dots on every image you shoot. Even if usually it does not bother you too much, when it comes to focus stacking of such images, these spots will turn into dark traces on the output image due to slight alignment shifting. Helicon Focus developed a great solution for such stacks - the Dust map function. Basically, all you need is to provide the program with a sort of a "map" of all dust particles that will be applied to the whole stack in order to eliminate these dust imprints. This function works also for hot pixels.

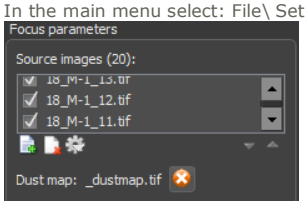
Below you will find all the detailed instructions as for how to use this function, and this 100% crop of the sample image provided by Phil McCollum is a good demonstration of how the output image looks like with and without a dust map:

Dust map function is OFF. Move the cursor over the image to see how the dust map function works.

To use the Dust map function follow these steps:

1. Prepare a dust map: when shooting your images, make one unfocused (!) shot of a white surface, so that dust on the sensor can be easily identified.
2. Launch Helicon Focus, add stack of images.

3. In the main menu select: File\ Set dust map... Once added, the correspondent info will appear below the Source images list.



4. Start rendering.

Please note that dust map should have the same dimensions as all the other images in the stack.

Here is an example of the dust map (provided by Phil McCollum):

In order to remove the dust map, go to the main menu\File\Remove dust map, or press the button next to the dust map file name.

For better understanding of the process please watch the video tutorials on our Web site.

Command line mode

Helicon Focus can be called from other programs with parameters in command line

Here is the list and formats of command line parameters:

Command line parameter	Description
-silent	Start Helicon Focus without interface only with progress bar
-save:full_name.ext	Save result to the full_name.ext. If omitted, result is saved in Focused subfolder
-j:jpeg_quality	Save JPEG quality (0-12)
-dmap	Save depth map image
-noresult	Do not save resulting image
-3d	Save 3D model in Helicon 3D Viewer file format
-mp:x	Set Method (0=method A, 1=method B, 2=method C)
-rp:xxx	Set Radius
-sp:xxx	Set Smoothing
-va:xxx	Define Vertical shift adjustment
-ha:xxx	Define Horizontal shift adjustment
-ra:xxx	Define Rotation adjustment
-ma:xxx	Define Magnification adjustment
-ba:xxx	Define Brightness adjustment
-im:x	Define Interpolation method (1=Bilinear,...)
-dmf:xx	Define Depth map feathering

Examples	Description
HeliconFocus.exe -silent "c:\my images\set20"	Process all images in "c:\my images\set20" folder with default parameters
"C:\Program Files\Helicon Focus\HeliconFocus.exe" -silent	Process all images in the current folder and save result to "Focused" subfolder
HeliconFocus.exe -silent "c:\my images\set20" -rp:6 -sp:7 -mp:1	Process images with Radius set to 6 and Smoothing set to 7
HeliconFocus.exe -silent "c:\my images\set20" -save:c:\result.tiff	Process images in "c:\my images\set20" folder and save as tiff file to c:\

Licensing

Helicon Focus is a shareware program. You can evaluate a fully functional version for 30 days. Once the trial period is over, however, the program will add **promotional text to the resulting images** and **limit its resolution to 4Mpixels** unless you register the program.

To register the program, buy a license and get a registration key. You can order a license for one of the three versions described below: Helicon Focus Lite, Helicon Focus Pro, and Helicon Focus Premium.

A registered copy may be installed on up to **four computers**, as long as only one copy is used at the same time. A single license allows unlimited hardware upgrades and/ or transfers to other computers.

Helicon Focus Lite

- Automatically adjusts and resizes images (important for stereo microscopes and macrophotography)
- Uses all available processors (1.7 times faster with 2 processors, 2.3 times faster with 4 processors)
- Preserves details by using advanced interpolators for image processing (Lanczos, Sinc256)
- Always processes image with 16-bit precision
- Can handle stacks of unlimited length
- Supports dust map to automatically remove black points from resulting images
- Automatically adjusts brightness of the adjacent images
- Loads RAW, 8-bit and 16-bit TIFF, JPEG files
- Saves 8-bit and 16-bit TIFF, JPEG files
- Allows to add text and scale bar
- Provides a command line interface so that the program can be called from within other applications
- Processes stacks in background, at the same time allowing to open more stacks and adjust rendering parameters

Helicon Focus Pro

Includes all the features of the Lite version, plus:

- Helicon Remote for automated focus bracketing for Win/Mac
- Retouching brush for copying from aligned source images to a resulting image (cannot be performed with an external photo editor)
- Ability to split and enqueue multiple stacks for further processing
- Export of 3D model to Helicon 3D Viewer
- 2D micropanorama
- Export of animated stacks (see example)

Helicon Focus Premium

Includes all the features of the Pro version, plus:

- license for Helicon Remote for Android, for automated focus bracketing

System requirements

The recommended system configuration is:

- 4 core processor or higher
- 4 Gb RAM or higher
- Resolution 1920 x 1080 or more

Minimum system requirements are:

- 2 GHz processor
- 1 Gb RAM
- Resolution 1280 x 1024

Install/Uninstall

Installation for MS Windows

The latest version of Helicon Focus is always available on the Downloads page of our Web site, if your license allows updating.

To install Helicon Focus:

1. **Go to** http://www.heliconsoft.com/software-downloads/.
2. **Hit** the Download button 

4. **Run** the .exe file.
5. **Follow** the installation instructions.
6. **Launch** Helicon Focus from the Start menu or the desktop shortcut.

You can uninstall the program from the Control Panel.

Plug-in for Adobe Lightroom will be installed automatically with the first launch of Helicon Focus.

Installation for Mac

The latest version of Helicon Focus is always available on the Downloads page of our Web site, if your license allows updating.

To install Helicon Focus:

1. **Go to** http://www.heliconsoft.com/software-downloads/.
2. **Hit** the Download button 

4. **Open/mount** the .dmg file from the Downloads folder.
5. **Drag** the Helicon Focus and Helicon 3D Viewer icons onto the Applications folder icon.
6. **Launch** Helicon Focus from the Applications folder.

In order to install **plug-in for Lightroom**, go to main menu\Edit\Preferences\Integration tab and hit the Install plug-in button.

You can uninstall the program from the Applications folder.

Integration

Adobe Lightroom

Helicon Focus plug-in for Lightroom enables smooth and simple interaction between these two programs. It is installed automatically on Windows, and from from Preferences menu on Mac.

Follow this general structure algorithm to see how it works:

1. **Launch Photoshop Lightroom** and import the stack that you want to be rendered.
2. **Select images**.
3. **Export to Helicon Focus.** Call the context menu with a right-click on any of the chosen images and go for Export - Helicon Focus. Helicon Focus will be launched automatically. The stack will be displayed in the Source images window in the top right hand corner.
4. **Render with Helicon Focus.** Adjust the processing settings and start rendering. The resulting image icon will appear in the Output images menu in the bottom right hand corner. If you find that the resulting image needs some retouching or you want to add text/scale, go to the relevant tab.
5. **Save output image.** Once you feel like stacking is done and you are happy with the result, go to the Saving tab, hit the Save button and choose the folder, the file type and name.
6. **Close Helicon Focus.** The resulting image will be imported back to Lightroom automatically.

It is important to note that once you start exporting source images to Helicon Focus, you will see that an export progress bar will appear in Lightroom. The process will be shown as suspended until you close Helicon Focus, since Lightroom considers rendering in Helicon Focus as a part of export process.

Please consider that in order for the rendered image to be displayed in Lightroom, you should have either All photographs folder active or the one you saved the output image to. So if you cannot see the resulting image, make sure you're standing on the right folder.

Please watch the video tutorials on our Web site for more details.

Helicon Remote

Read more about Helicon Remote here.

Helicon 3D Viewer

Read more about Helicon 3D Viewer here.

Helicon Print

Read more about Helicon Print here.

Shorcuts

Below you will find the list of all shortcuts for Helicon Focus. Sometimes using them makes it much more handy to work with images. In order to get used to them we advise you to print out the whole list and to keep it at hand.

Shortcut	Description
General shortcuts	
Ctrl/⌘ **+O**	Open images
Del	Remove images from the Source images list
Page Up, Page Down	Navigate through the Source images list
Ctrl/⌘ **+P**	Print image
Ctrl/⌘ **+S**	Save image
Ctrl/⌘ **+R**	Render the stack
F1	Helicon Focus Help
Right mouse button on slider	Reset to default
Image navigation shortcuts	
Mouse wheel	Zoom in/out
Left mouse button	Show magnifying glass
Space + Left mouse button	Pan the image (hand tool)
Right mouse button	Pan the image (hand tool)
Left arrow, right arrow	Move the image one step right or left
Ctrl/⌘ **+Left arrow, right arrow**	Move the image one page right or left
Click on scroll wheel	Fit to window/zoom to 100%
Retouching shortcuts	
Ctrl/⌘ **+scroll wheel/[] keys**	Adjust brush size
Ctrl/⌘ **+Alt+scroll wheel**	Adjust brush hardness
Shift+scroll wheel	Adjust color tolerance
Alt+scroll wheel	Adjust brightness
Ctrl/⌘ **+Z**	Undo retouching
Ctrl/⌘ **+Y**	Redo retouching
Right mouse button	Set new source area for the Clone brush
Right mouse button	Keep it pressed to hide the retouching changes
Ctrl/⌘ **+G**	Show/hide grid
F9	Load current source image

Samples

Click to see the original files and download the samples.