



AcceleratedVision

PANORAMA

Create impressive panoramic images
using unique technology

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EMOTION
ANALOG DIVE
PANORAMA

Guide to the special functions of the programmes

PANORAMA

Panoramic images are created by combining several individual images into a single image. By 'merging' several individual images taken from different angles, panoramas are created that capture and show significantly more than a single image could, captivate with their unusual depth effect and also convey a special impression of vastness.

PANORAMA calculates your individual images in a very complex process and generates them into impressive professional panoramic images.

The programme offers many special features and extraordinary functions that you will only find in this software:

- You can choose between **6 panorama modes**, e.g. to create a 'normal' panorama in **spherical mode** or other projections such as **fisheye** or **planar**.
- Another '**vertical**' mode is specialised for 'high' panoramas, i.e. image series photographed upwards, e.g. of trees
- **Automatic presets**, which can also be changed individually, quickly produce optimal results.
- In the **Quick Edit module**, you can adjust the photographic settings to achieve your desired image look.

This programme makes it easy for you to take impressive panoramic photos:

- It doesn't matter whether you take photos in landscape or portrait format.
- Combinations of landscape and portrait formats are no problem.
- A tripod is not required: **PANORAMA** can easily process series of images taken 'freehand' with a camera or smartphone.
- **PANORAMA** can 'process' up to 60 images.

In the Professional version, you can use all of the features listed, while in the 'normal' version, some functions are omitted or restricted.

In this guide, the chapters on the 'Flash workflow', which describes the shortest route from loading an image or image sequence to the finished result image, and the chapter on the 'advanced' workflow have been deliberately placed at the end, because you can make the "right" decisions and settings for your individual workflow particularly quickly to achieve the best possible result image if you are familiar with the various options and interrelationships.

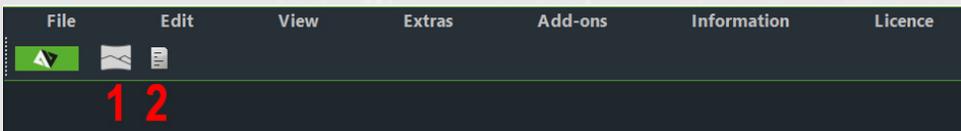
Unless otherwise stated, all image series shown in the guide have been provided by the programme's developer, Michael Piepgras.

Note: Cross-programme functions, modules such as the RAW module, all other modules that can be displayed via the toolbar or quick access, and expert mode can be found in the corresponding guides.

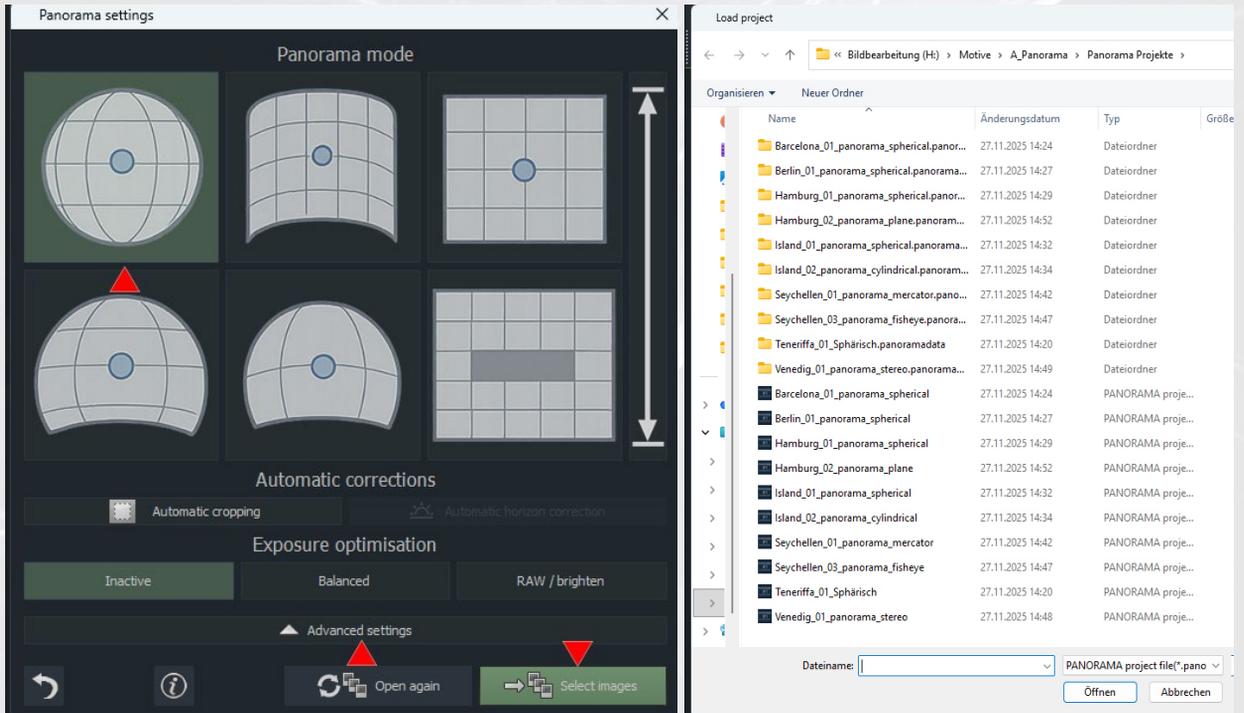
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1. Home screen with special features



After starting the programme, the **PANORAMA** start screen offers several special features compared to other programmes:

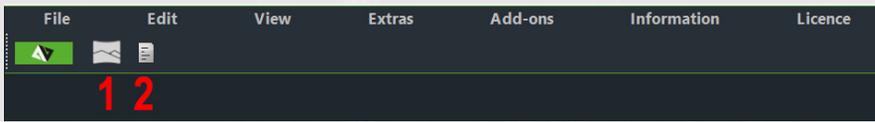


Selecting a panorama mode: Clicking on the button with the panorama symbol (1) does not immediately import the image files that **PANORAMA** is to merge into a single image.

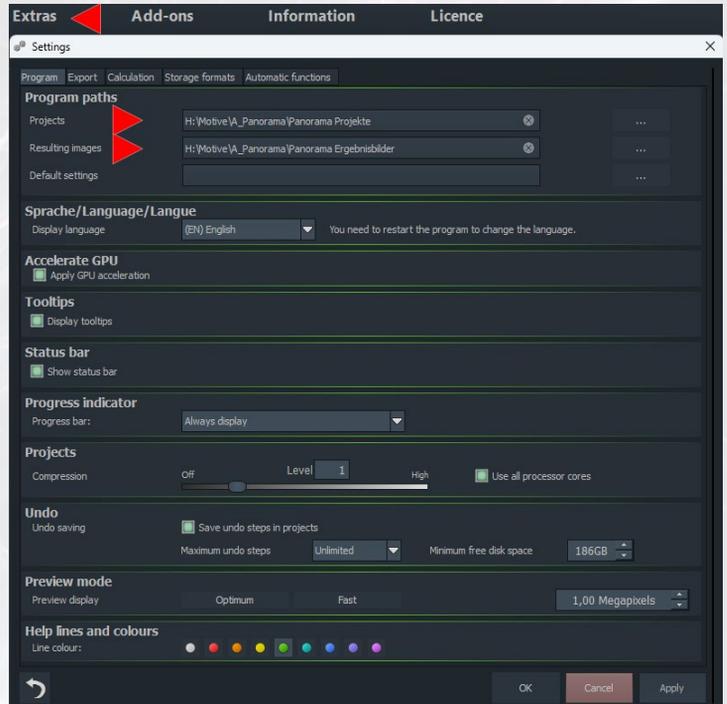


The **Panorama Settings** window opens with various modes to choose from (graphic on the left). The default setting is the 'classic' **spherical** panorama mode, which produces the typical images with a wide angle of view and large fields of view, as shown in the graphic.

With the second click on the **Select images** button, you import a series of images from the folder of your choice (graphic on the right).



Open project: Click on the **Open project** button (2) to open a saved project in a created 'project folder'.



Automatic selection of the project folder:

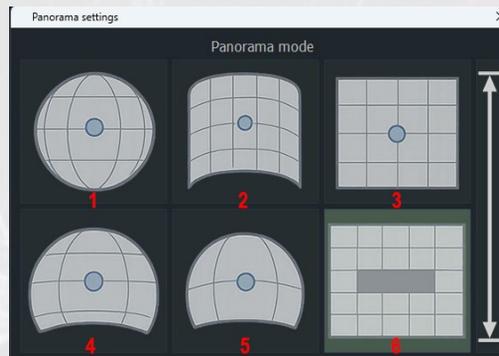
If you have specified this folder as the path for **projects** under **Tools/Settings/Programme** (graphic on the right) by clicking on the three dots (far right), this folder will open automatically each time you click on this button or in the workspace when you select **File/Project/Open Project**.

Note: Saving a panoramic image with your individual settings, e.g. when cropping and selecting a preset, is useful because when you open this project later, all settings are saved and can be adjusted or changed as needed.

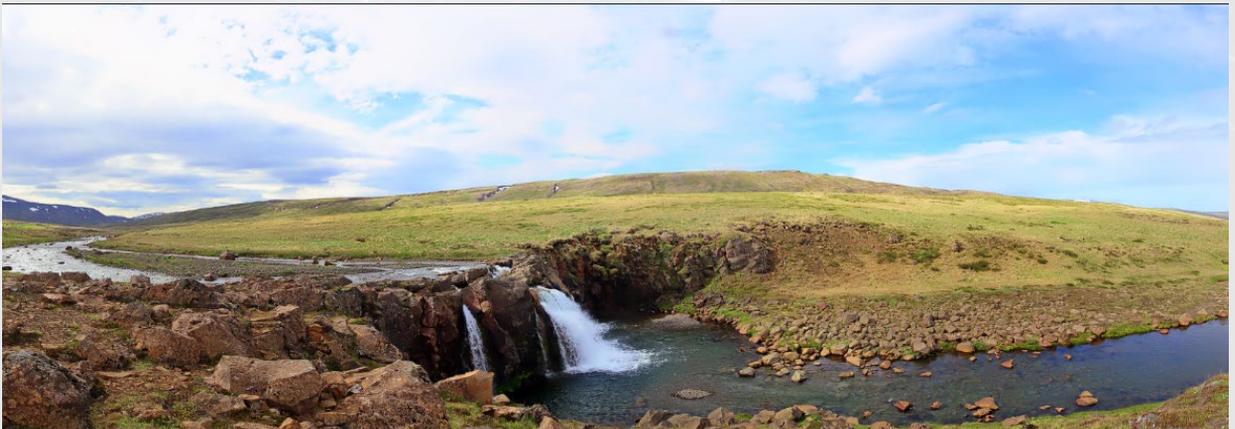
Open image series in a created folder:

In **PANORAMA** there is no programme path to a folder containing the original image series. However, this omission has little practical disadvantage, because once you have selected a folder for the first time, the last folder selected is automatically opened the next time you click on **Select images**. So, if you have created a 'parent folder' for panoramic images with several subfolders for different countries or cities, you can easily navigate between these folders by clicking on **Select images**.

2. Panorama Modes



The **six panorama modes** or **projection types** allow you to choose between different panorama variants or projections with different curvatures of an image series, as shown in the following examples. The small graphics of the original images show the first and last image of the loaded image series.



1. Spherical (ball)

This **spherical** or **ball panorama** is the default setting and is ideal for “classic” panoramic shots with a wide field of view. A wide field of view can mean panoramas with a very wide angle of view or panoramas up to 360°.

This mode is the default setting because virtually **every panorama taken is a spherical panorama**. The photographer stands in the center and takes pictures in the desired direction.

In this mode, **PANORAMA** takes all images, 8 in the example, and attempts to arrange them in a sphere as they **might** have been located within it.

Preset selected in the (cropped) example: **Natural colour**.

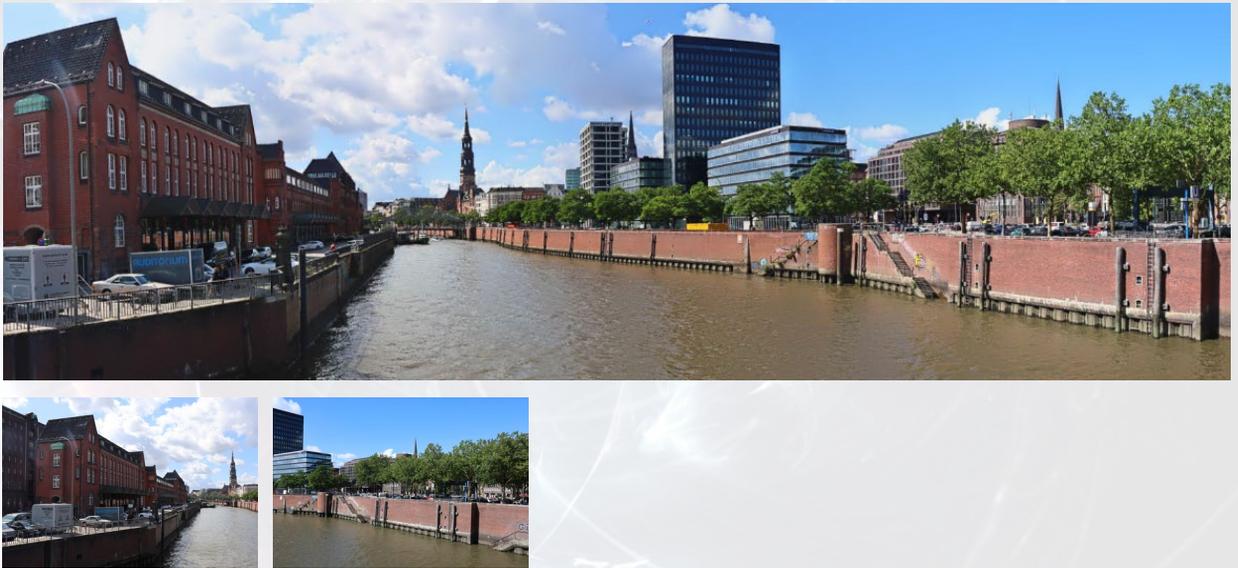
2. Cylindrical projection



If the panorama is to be distorted like a **cylinder**, this projection is well suited, especially for **horizontal panoramas** with a medium to large field of view. It may help to imagine standing inside a cylinder onto which the individual images in the image series are arranged and fixed, resulting in something resembling a poster wallpaper.

This mode bends vertical lines and avoids extreme edge distortion. Selected preset in the (cropped) example with 12 images: **Natural Intense colour**.

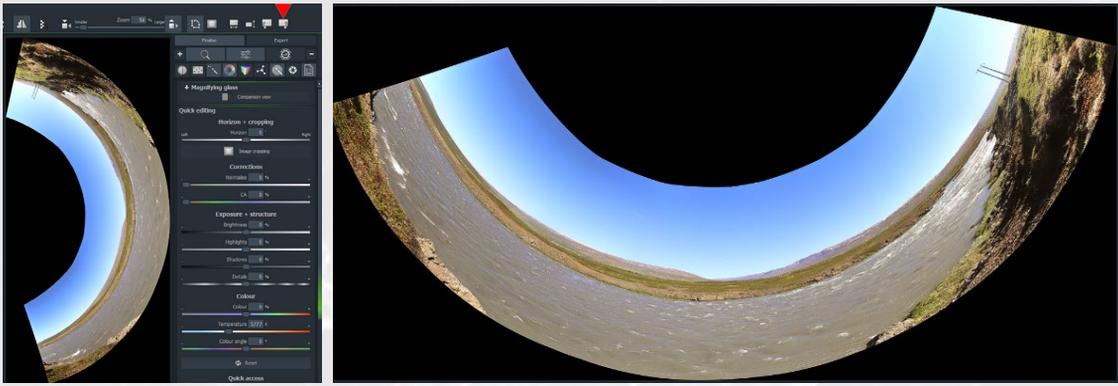
3. Mercator projection



If you want to distort the panorama like a **map**, select this projection. It is well suited for very wide panoramas (up to 360° horizontally). This mode preserves angles but distorts the vertical areas near the poles significantly.

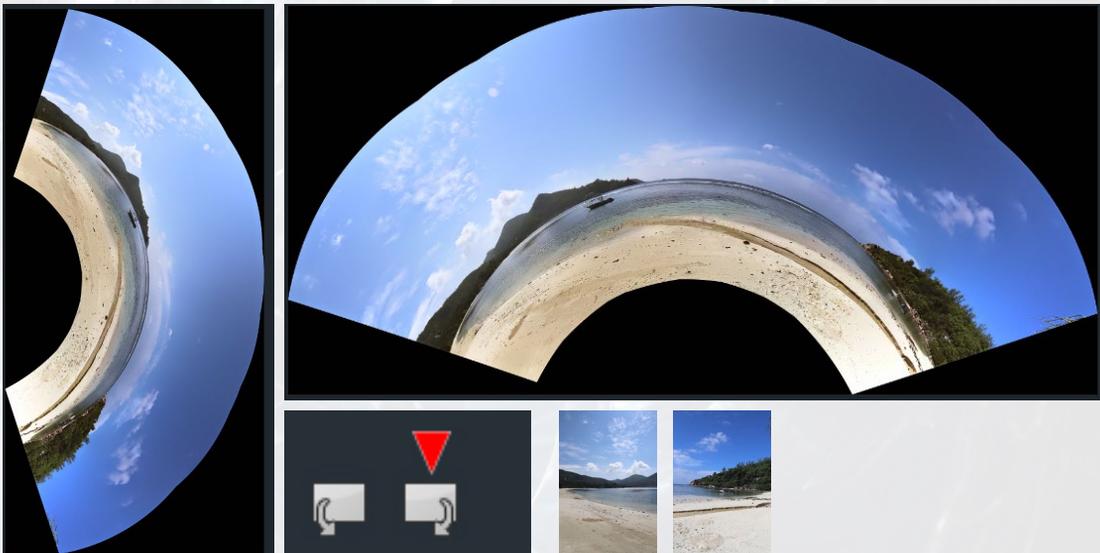
The panorama example was generated and cropped from a series of 5 images. Selected preset: **Architecture Sharpness**.

4. Fisheye projection



This special mode is ideal for extremely wide-angle or fisheye shots, while preserving the typical characteristic image look. With this program, you can do without expensive equipment: Panorama generates panoramas from a series of images taken with “normal” lenses and focal lengths that look as if they were taken with a fisheye lens. The generated panorama (graphic on the left) has been rotated by 90°. Selected preset: **Landscape Warmth**.

5. Stereo projection



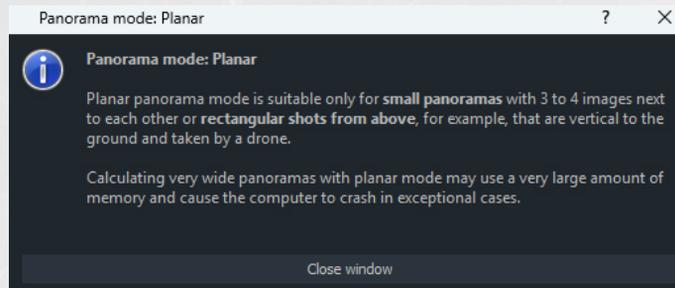
This **special case** is well suited, for example, for special stereo projections or 3D recordings and can be used in VR (virtual reality) applications or special wide-angle recordings, producing exciting panoramas.

Note: As with fisheye mode, you can also use this stereo mode, also known as “Little Planet,” for image series, in this example 8 images, taken with “normal” lenses.

The image has been rotated by 90°. Selected preset: **Landscape Warmth**.

6. Planar projection

This mode is a good choice for scenes without strong distortions and “small” viewing angles.



As soon as you activate this mode, the Panorama Mode: Planar window will appear with a note that this mode is only suitable for small panoramas with 3 to 4 images side by side or right-angled shots from above (e.g., drone shots). In this case, you would see a panorama from above. The consequence of loading more than 4 images is very high memory consumption and associated restrictions on the system.



This **planar panorama** (graphic on the left) was assembled from four **portrait-format** images and then cropped.

The format of **4,970 x 3,361 px** or **42.08 x 28.46 cm** (300 dpi) is close to the “standard” format of 40 x 30 cm. Selected preset: **Landscape polarizing filter**.

The graphic at the bottom right shows a variant that was generated from four images taken in **landscape format** and deliberately not cropped.

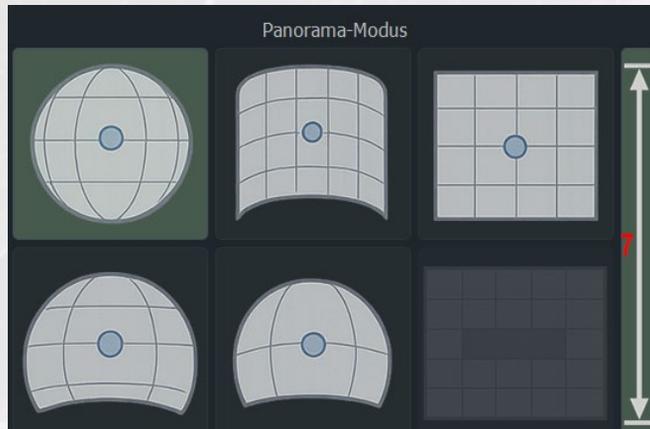
The dimensions are **8,405 x 3,216 px** or **71.16 x 27.23 cm** (300 dpi). The selected preset is also **Landscape Polarizing Filter**.



Note: If you want to try out the effect of an imported image series with different projections, you cannot switch directly from one mode to another; instead, you must re-import the image series. This can be done quickly with the “click combination” **New Panorama** (graphic on the left) and then **Open again**, which will reimport the last imported image series.

7. Vertical mode

This vertical mode for panoramas is a special feature of **PANORAMA**, which switches the entire panorama creation process to a mode optimised for high panoramas and specialises in generating **upright panoramas**.



Click on the button with the **'double arrow' (7)**, which indicates that this mode is suitable for both **upward** shots towards the sky and **downward** shots, e.g. for drone shots, to activate it.

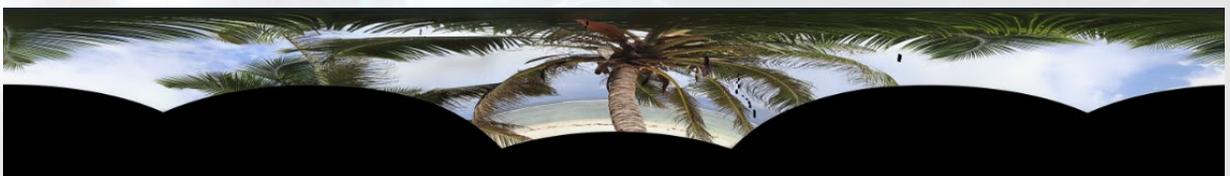
You can use this option in **combination with all modes offered**, with the exception of **Planar projection**, which is deactivated (greyed out).

Of course, you can import portrait-format images that have been taken reasonably 'straight ahead' in all modes. If you photograph subjects with the camera pointing upwards and **activate vertical mode, the orientation of the entire panorama will be changed.**



Example with spherical projection without vertical mode activated:

In this 'row of palm trees' consisting of four images, the camera has been moved further and further upwards (from left to right).



If you load this series of images now, the resulting panorama will certainly not meet your expectations.

Vertical plus Spherical combination:

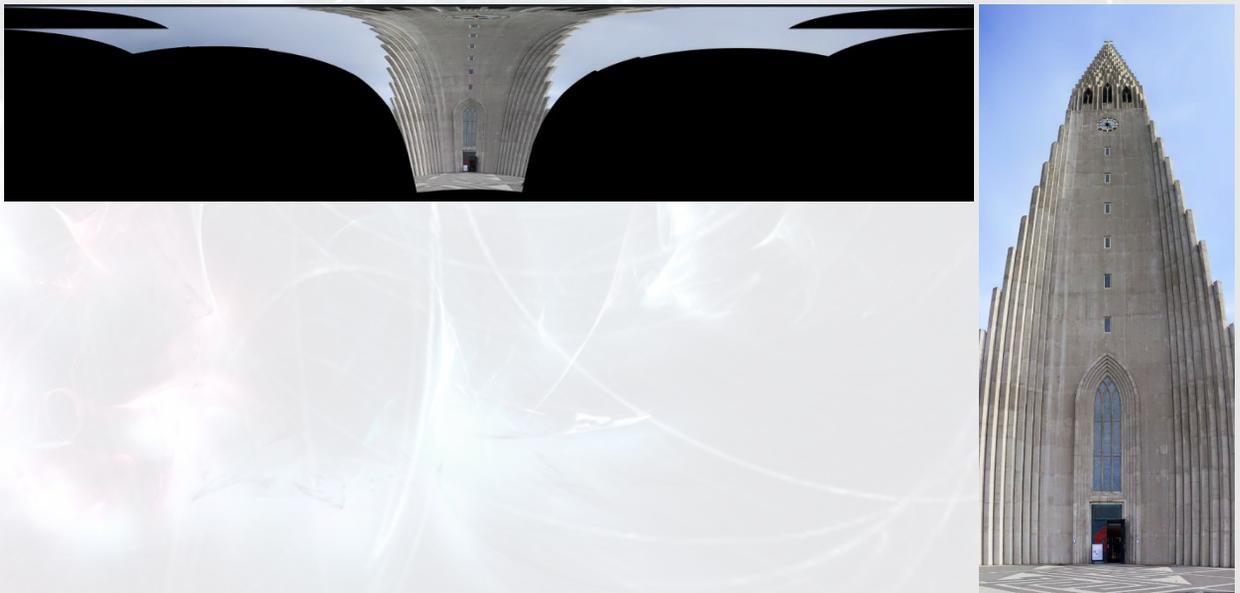
Now activate **vertical mode** and reload this vertical panorama, ...



... you will obtain a very impressive result image in portrait format.

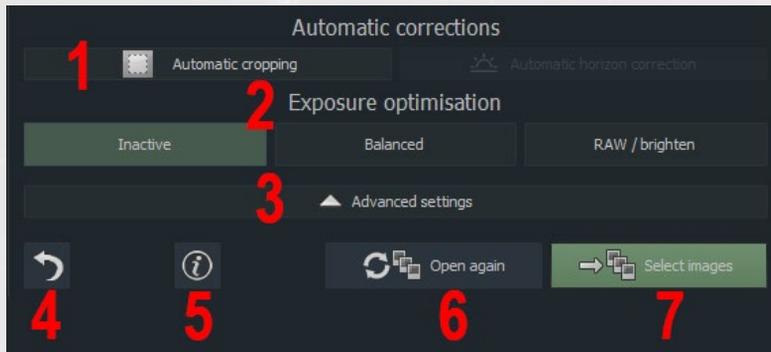


In the second example with the six church photographs, in which the camera was pointed slightly higher each time, ...



... the resulting image is impressive compared to the **deactivated** vertical mode (graphic on the left) and can be corrected in perspective in the RAW module if necessary.

3. Automatic corrections and advanced settings



In most cases, you will achieve excellent panoramic results using the standard default settings.

It depends on the original images you have imported whether and where you should use the 'limited' or advanced correction options and make individual adjustments.

The following overview shows the options available, with selected examples.

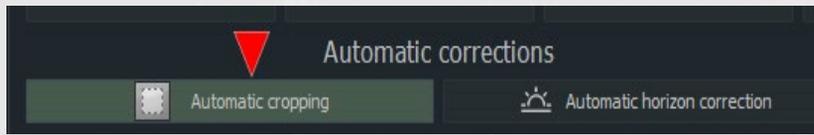
Note: All settings that have been changed from the default settings remain active even after the programme is closed until you deactivate or reset them.



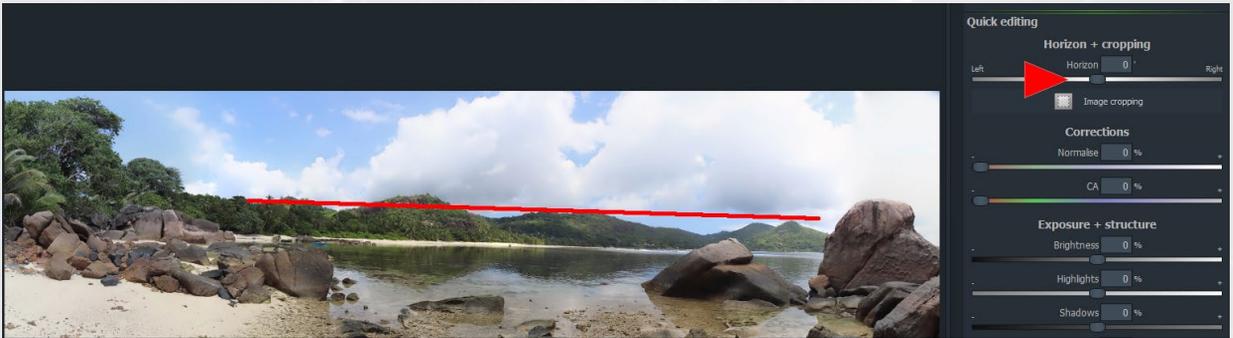
1. Automatic cropping

This option, which is useful in most cases, even in conjunction with **automatic horizon correction** (see next page), is disabled (inactive) by default. Why?

The automatic function first crops the resulting image and then straightens the horizon as far as the programme can 'recognise' and 'estimate' it. However, this sequence and any necessary adjustments result in slightly more being cropped off at the edges than with a purely manual correction. As a rule, this loss is minimal.

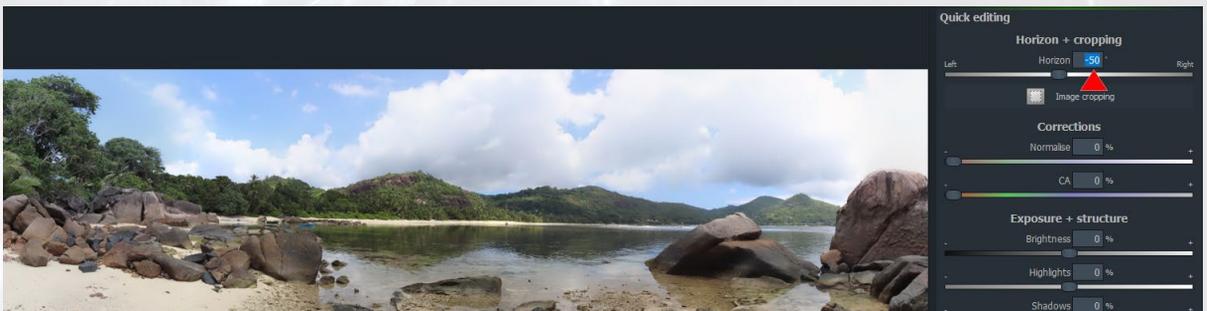


2 options: Activate **automatic cropping** by clicking on the button. To the right of it, you will see another option: **Automatic horizon correction**. You have the choice: **automatic cropping only**, or a **combination of automatic cropping and automatic horizon correction**.



Automatic cropping

If you only activate automatic cropping, **PANORAMA** will generate a result image that is neatly cropped but not aligned. If you took the photo with a tripod, this may already be the desired result image. In most cases where panoramas are photographed by hand, the horizon 'tilts' slightly to the left or right, as in the example, and must be corrected. The quickest way to do this is with the **Horizon slider** in **Quick Editing** (see also the relevant chapter).



After subsequently straightening the horizon (slider to the left at **-50**), the panorama is complete if no further individual changes are to be made.

Automatic corrections



Automatic cropping



Automatic horizon correction

Automatic cropping plus automatic horizon correction

The **best option** for a **fast workflow (flash workflow)** is the combination of the two automatic functions **cropping** and **horizon correction**. Clicking on both buttons automatically crops and aligns all panorama images.



Comparison views: The graphics show (from top to bottom):

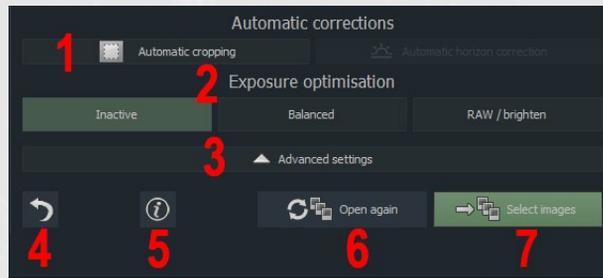
- **Manual corrections** without automatic functions.
- **Automatic cropping with manual horizon correction.**
- **Automatic cropping and alignment.**

If you look closely at the edges of the image on the left, top and bottom, you can see that manual alignment followed by cropping produces the most complete panorama result.

Conclusion: If you want to use the 'last few centimetres' of a panorama on the left and right edges, deactivate the automatic function and

- **first, align the image as desired,**
- **crop the image in the second step.**

If you do it the other way round, you will lose some of the results.

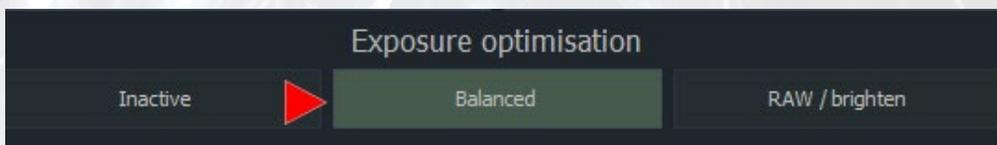


2. Exposure optimisation:

This module checks the individual images of an imported panorama and optimises the exposure **before** generating the panorama.



Optimisation is disabled (**Inactive**) by default because the assessment of the 'correct' exposure is subjective and can also be significantly influenced by the choice of a **preset** or the parameters used in **Quick editing**.



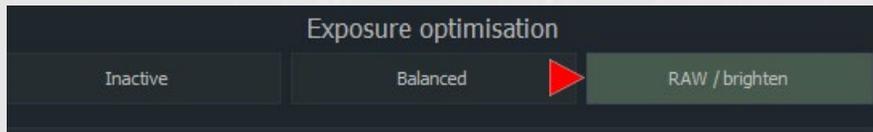
Activate **Balanced** and then reload the same image series by clicking on **Open again**, ...



... the result (with the same preset, **Natural Neutral**) is visually almost indistinguishable, and the two corresponding histograms displayed also look very similar.

The reason is easy to understand: the original files are already so well exposed that optimisation is hardly visible.

RAW/Brighten



The situation is different for imported **RAW files** (see also the chapter **Photographic suggestions for the best panoramas**).



RAW images tend to be rather dark.

Without prior processing, the result panorama in this example looks much too dark.

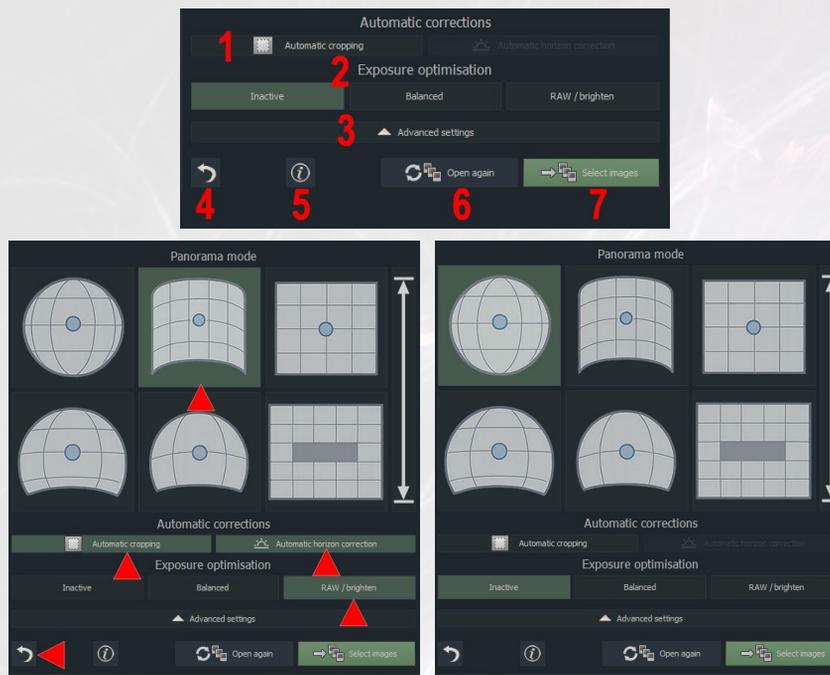


After clicking on **RAW/Brighten**, the result is already significantly better, but still too dark.



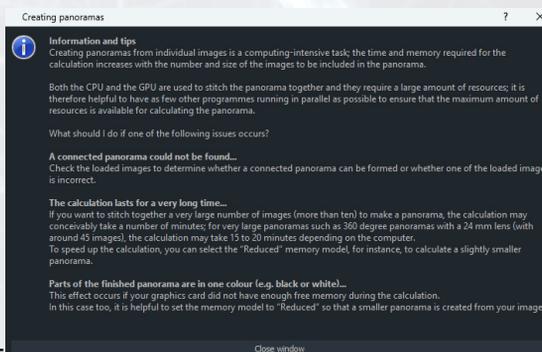
In conjunction with the Natural Very Bright preset, a very good panoramic image was produced from the RAW series.

4. Reset settings



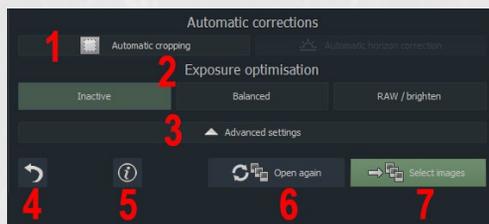
In the graphic on the left, the **cylindrical** panorama mode, **automatic cropping**, **automatic horizon correction** and **RAW/brightening** exposure optimisation have been selected for the desired panorama image. Clicking on the **'back arrow'** resets all panorama creation settings to their default values (see graphic on the right). To load the next image series, you must reactivate all your preferred settings.

5. Information window

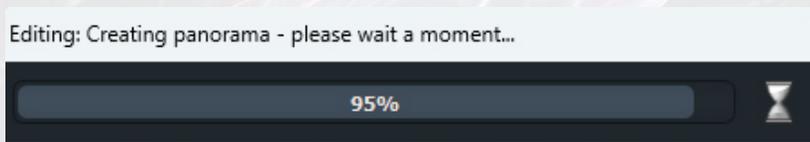


Clicking on the button with the information symbol opens an information window with useful content or technical explanations and helpful tips in case of errors if the creation of a panorama image does not work as desired.

6. Open again



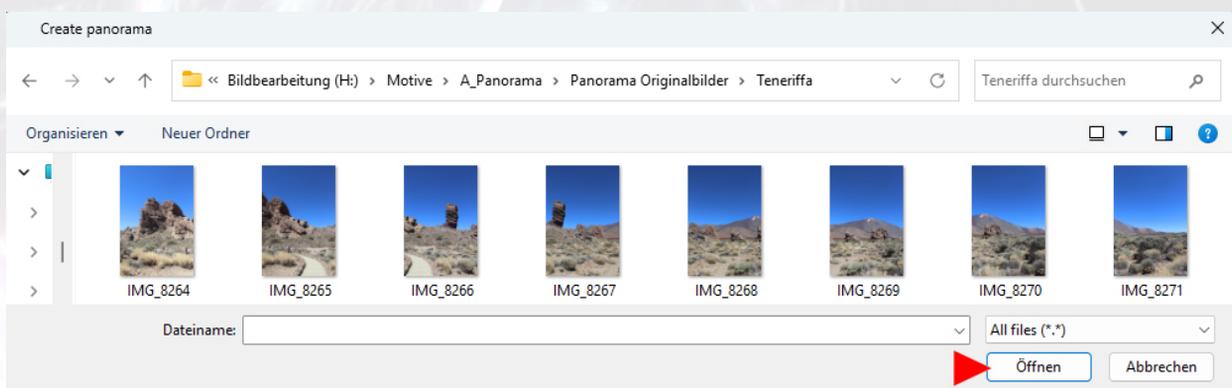
If you have imported a series of images and would like to try out alternative modes and/or other settings with the same images, for example, you can shorten the 'detour' via **Open again**.



Clicking on **Open again** will re-import the last imported images with the new settings currently selected, display the progress bar, and create the panorama.

Note: If you upload images using **drag & drop** (see **Flash workflow**), they will **not** be 'parked' in the **Open again list**. You can only use this function if the images were previously imported via **Select images**.

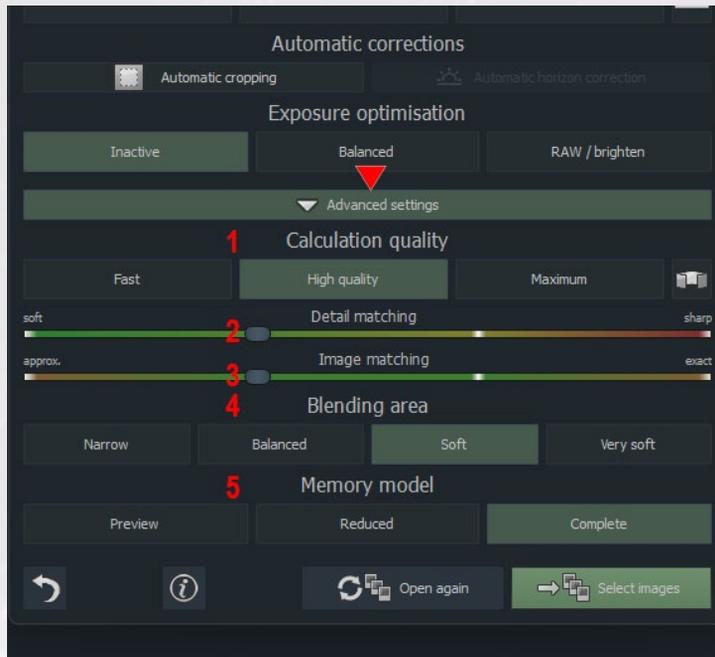
7. Select Images



This option is the most common method for importing images (see the chapter on **flash workflow**).

After clicking on the green Select images button, select all the desired images in the folder where the image series is stored and click on **Open** (Öffnen) to start the panorama creation process with the selected settings. The progress bar will be displayed as in the previous example.

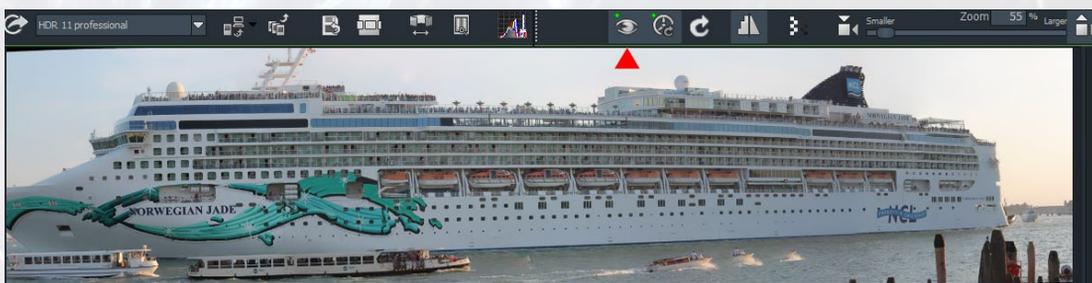
Advanced settings



If you are not entirely satisfied with the result panorama image of an imported image series, click on **Advanced settings** to open the options available there and use the various optimisation options. **The currently selected settings, such as the choice of panorama mode or automatic cropping and alignment, remain active.**

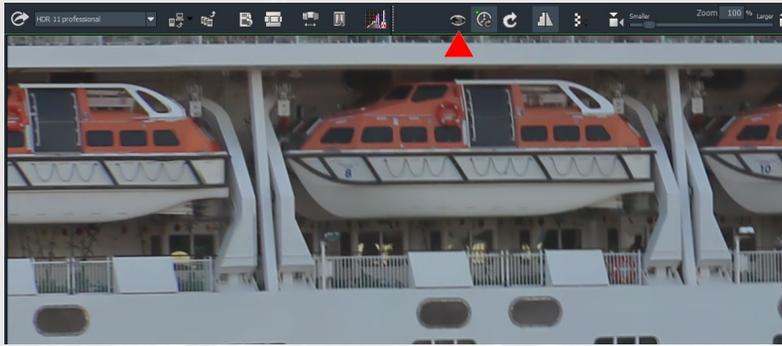
1. Vary the calculation quality

The calculation quality is set to **High quality** by default ...

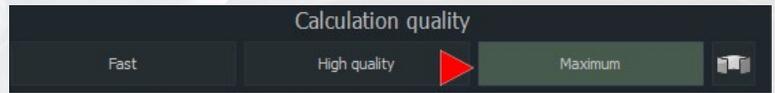


... and produces a very good panoramic image, for example, with this imported image series, in which **automatic cropping** and **alignment corrections** were deliberately not activated.

Note: If you want to better assess the different calculation qualities, **deactivate** the **quick preview mode** by clicking on the button with the **eye symbol** in the toolbar (result on the next page).

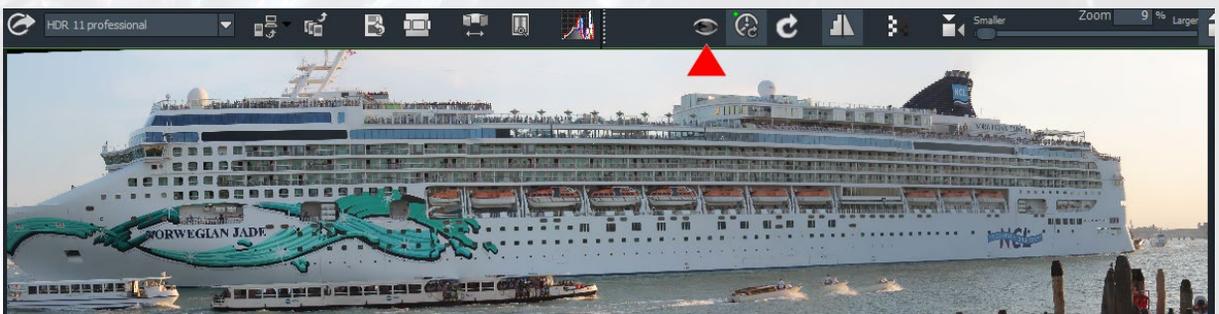


In this **100% view**, which shows the full image size instead of a reduced version of the panoramic image and thus only a section of the image, you can better assess whether, for example, there are any 'jumps' in the transitions between the individual images or other inconsistencies.



As with any zoom-in, a simple click on the image displays the 'orientation preview'. By dragging the mouse, you can now move the image section in all directions. **Double-clicking** on the image will again show you the entire image in this mode. Drawback: the calculation process takes longer.

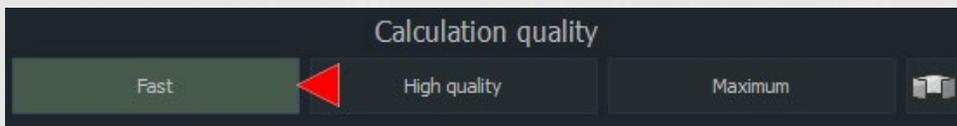
Now select the best calculation quality, Maximum, which also takes significantly longer...



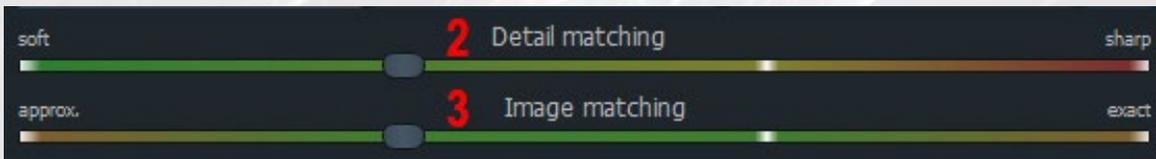
... **PANORAMA** generates a result image of the highest quality, which is both in the 'long shot'...



... as well as in the zoomed view in every respect.



With a click on **Fast**, the images are merged with a few so-called reference points compared to the other quality levels. This speeds up the calculation time, but with some image series it can result in the software not finding a coherent panorama. In this case, select **High quality** or **Maximum** again.



2. Detail matching



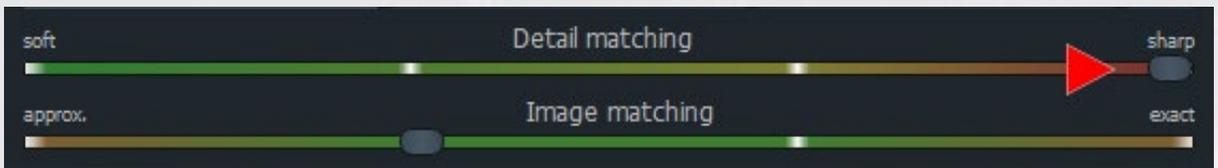
This setting, which can be changed in **4 steps**, specifies **how precisely individual details** found in a series of images must match during panorama calculation in order to be considered the **same detail in 2 images**.



The **'softer'** the control is set, the more details are used that do not match exactly.

The standard setting is on the **second** 'snap point' in the green area.

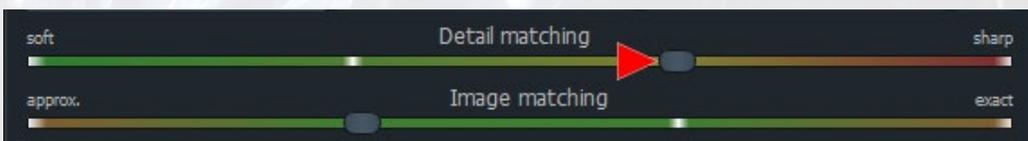
This green area provides the most **stable panoramas**.



If you move the slider all the way to the right into the **'sharp'** range, only the **details that match very precisely** will be used for the panorama generation.



The result could then look like in this example, where practically only the first two images meet this condition because the photos were not taken with a tripod but, as in most cases, by hand.

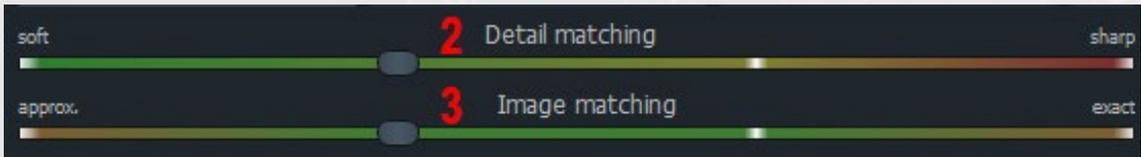


At the boundary between **'soft'** and **'sharp'** ...



... the panorama was complete again.

3. Image matching

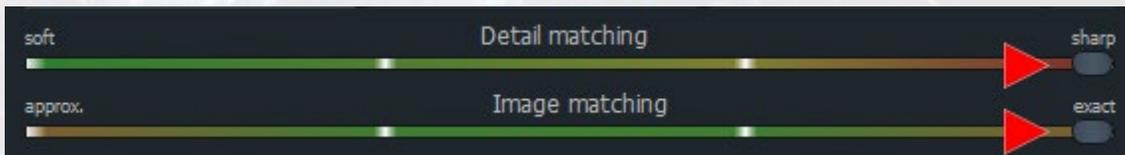


These **four** settings allow you to specify **how precisely two images must match in order for the programme** to recognise them as part of the panorama.

By default, the slider is set to the second 'snap point' in the green area, as with **Detail matching**.

Especially for series of images that were taken by hand, a low setting such as the default or 'approximate' setting is useful and helpful because it also takes into account images that do not 'match' exactly when creating the panorama.

Possible disadvantage: This can lead to misjudgements of the panorama, but this hardly ever occurs in practice. If you have captured panoramas very precisely, e.g. with a ball head, the setting on the far right, '**exact**', is recommended.

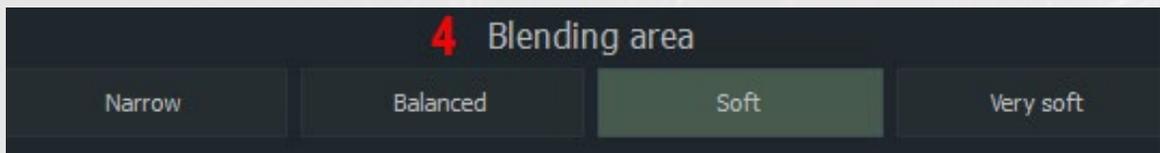


This recommendation also applies to the combination of '**sharp**' for **Detail matching** and '**exact**' for **Image matching**.



This series of images has been photographed so well by hand that it meets all the required criteria for "**sharpness**" and "**exact**", and **Panorama**, combined with **maximum calculation quality**, produces an excellent panoramic result.

4. Blending area

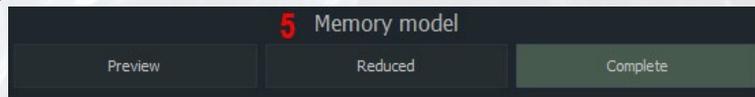


In panoramas, all images are blended and merged into a single image.

In the Blending area, you can influence the **type** of blending, which is set to **soft** by default. The choice depends on whether the exposure of the individual frames is uniform or less uniform: If all images in a panoramic image series are **evenly exposed**, you can select **Narrow**. As the name suggests, the blending takes place in a very narrow area.

The more the exposures of the individual images differ, the more it is advisable to select a setting between **Balanced** and **Soft** to **Very Soft** for significantly different exposures.

5. Memory model



By default, Panorama calculates all result images in **full resolution**, which corresponds to the default setting **Complete**.



This is particularly true for very large image series, such as in the example with **56 individual images** for a fisheye panorama (see also the chapter on **photographic suggestions**) and/or files with high resolution, which may 'overwhelm' the working memory and can lead to long processing times, it is advisable to reduce the panorama image to **half (reduced)** or a **quarter (Preview)** of the resolution **before** performing the final, high-quality calculation in order to obtain a quick 'interim result image'.

4. Photographic inspiration for the best panoramas

PANORAMA produces professional images from almost any source material. The few universal rules for 'capture technique' and a few pointers can serve as a guide to ensure the best results with this programme. The result images have been cropped, unless otherwise noted. The standard preset panorama mode **Spherical** has always been selected for better comparability.



Minimum number of images in the series

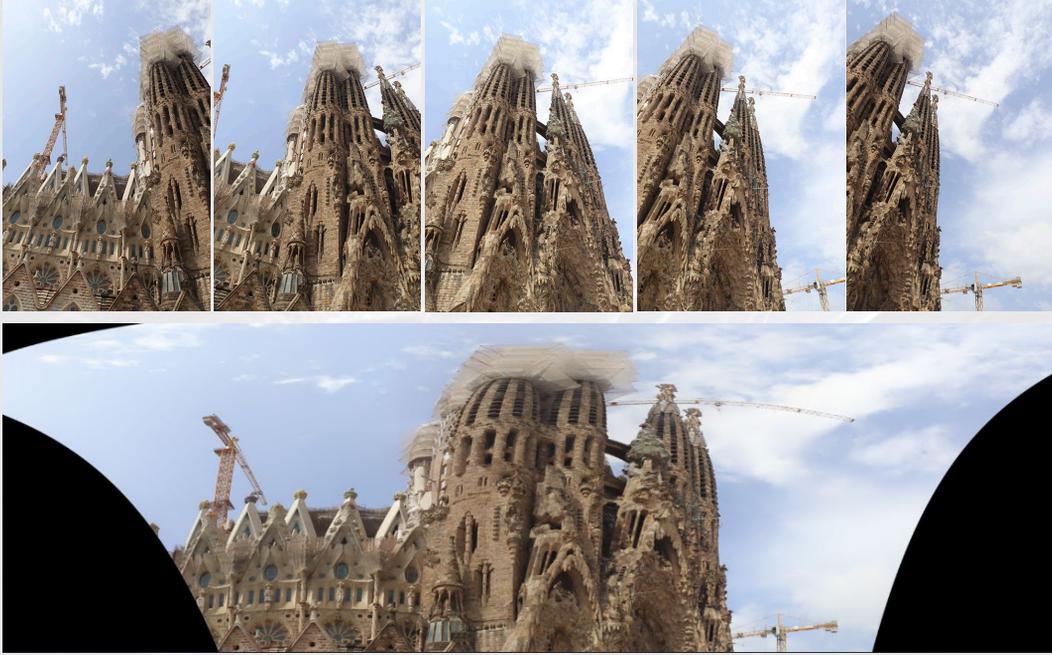
For a panoramic image, you should take at least **two photos**, as in the example, or preferably three or more. However, the **number of photos** taken is not the decisive factor; rather, it is your personal vision of which angles and perspectives you want to see in the panoramic image.



Overlapping transitions

The individual images should not have any gaps at the transitions; let **PANORAMA** fill them in and always overlap them slightly.

Record reasonably centrally



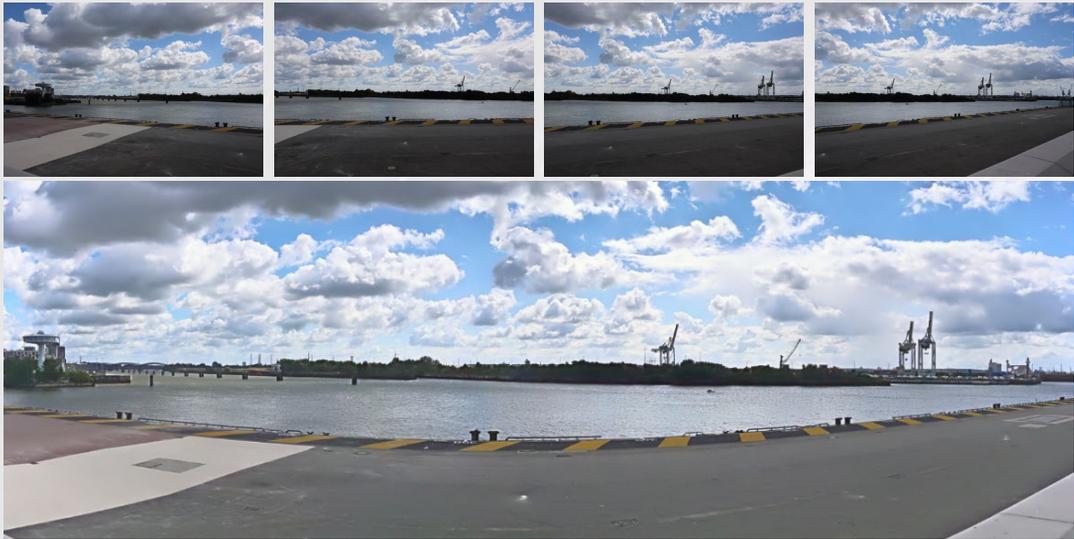
When taking pictures at an angle upwards or downwards, the resulting images are usually not very convincing or, in some modes, may not produce any results at all.

As in the example of the Sagrada Familia, this 'distorting' perspective is often unavoidable and can be used to create interesting panoramas if necessary, provided you take the consequences into account. The resulting image has deliberately not been cropped here.



The results look better and more natural if the horizon is reasonably 'centred' in all individual images, as in the example.

Landscape or Portrait format



Images taken in **Landscape format** are very well suited, for example, to subjects that **extend more horizontally**, such as landscapes, because this format also corresponds to the human field of vision.



Motifs that extend more **vertically**, such as urban canyons, skyscrapers, churches, waterfalls, or motifs such as those in the example, where you as the photographer simply decide which perspective you prefer in order to capture more sky and/or more water, for example, are best captured in **Portrait format**. The resulting images have a greater vertical resolution and do not appear quite as 'stretched'.

2-row shots: Panorama automatically 'sorts'



Two or more rows of images are no problem for Panorama: As in the example, first take the 'lower' row of images (camera pointing straight ahead) with the vegetation in the lower part of the image and the sky in the upper part, then the 'upper' row of images (camera pointing upwards) with the vegetation in the upper area of the image and the water in the lower area. After loading the 6 images, Panorama sorts everything and generates the resulting panorama. The order in which you take such image series does not matter. For example, you can first take photos 'straight ahead' from left to right, then point the camera upwards and take the second image series from right to left.

Loss during cropping: If you want to "cut off" as little as possible during cropping, **first straighten the horizon** and **then crop the image** (see also **Flash workflow** and **setting options in the Panorama Settings window: Auto Crop and Auto Horizon Correction**).

Multiple rows: PANORAMA automatically 'sorts'

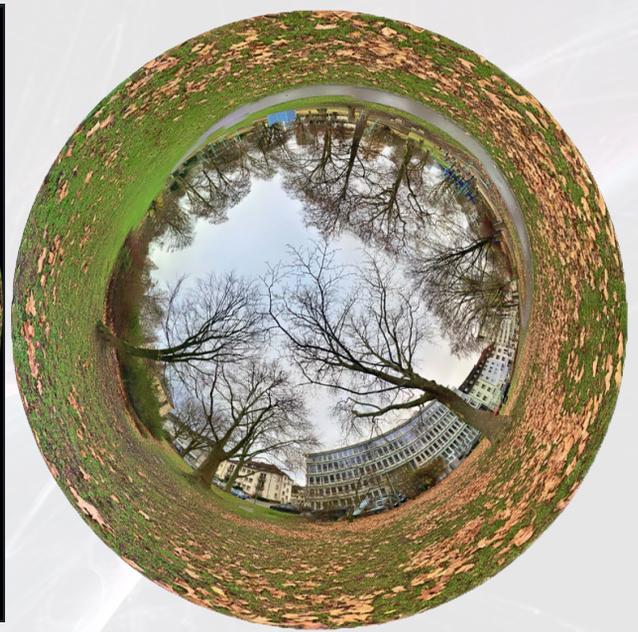


From multi-row image sequences, three in the example, this programme generates panoramas with an impressive depth effect that no single image can convey.

Here, too, the order of the recorded image series is irrelevant, e.g.

- First from left to right 'centred' or straight ahead,
- then with the camera pointing upwards from right to left,
- then back to the centre with one image,
- and finally with the camera pointing downwards from left to right again

The order listed is only an example. You could also take all the pictures in a random order.



Tip: If you want to end up with a complete **sphere** like the one in the graphic on the left or rotated and edited like the one on the right, you can first take a **360° image sequence with the camera 'centred'** in the circle, then with the camera tilted **upwards** and finally with the camera tilted **downwards**.

The individual shots were taken with a mobile phone. The result would have been even better with a camera and tripod.



Here, **PANORAMA** generated this impressive result image from **56 individual images** (images: author).

Take another three to four pictures towards the sky, and the 'black hole' will also be filled. The (rotated) result image could then look like the graphic on the right.

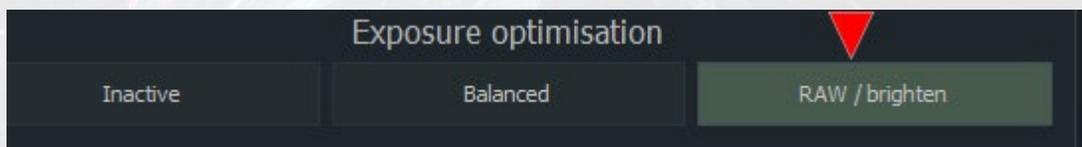
Note: For these 360° panoramas, **automatic cropping** and **automatic horizon correction** should be turned off.

For RAW series, activate 'RAW/Brighten'

As with all **Accelerated Vision** programmes, you can import all file formats accepted by **PANORAMA**.



If you load a **RAW image series** with the same presets, the untrimmed result image may look like the example, i.e. much too dark.



If you activate **exposure optimisation** by clicking on **the RAW/Brighten button**, the individual images of the panorama are checked before panorama generation and raised to an optimised level.



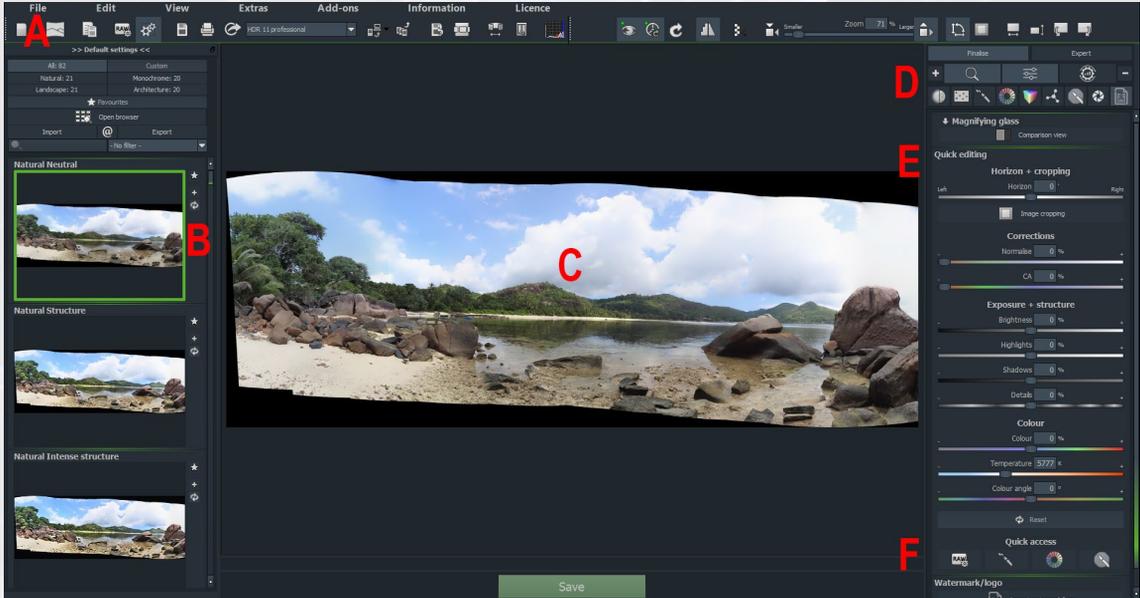
Now select a suitable preset, in this example **Architecture High-key**, and you will obtain a good result image, which can be further adjusted to your individual image look preferences, for example in the **RAW module** or with the controls in **Quick Editing**, if required.

5. Workspace with toolbar

If you own another **Accelerated Vision** programme, you will only need to make a few adjustments. The layout and use of the menus, tools and modules offered in the toolbar are largely identical, require no adjustment and are described in detail in the **General Functions guide**.

New and different from other programmes are the **Quick editing** feature on the right-hand side and the **Quick Access** feature further down, which are described in more detail in the next chapter.

Note: The user interface is designed for **4K screens**. On **Full HD screens**, you will need to scroll down slightly to see all modules and options.



PANORAMA's scope of work is divided into six main areas:

A: Menu and toolbars.

B: Presets and the different preset categories.

C: Image area with the automatically generated panoramic image, which is not aligned and cropped in the default settings.

D: Toolbar in finalisation mode with selectable modules (see next page).

E: Quick editing with numerous parameters such as **horizon alignment** or **image cropping**.

F: Quick Access with direct selection of modules such as **RAW module** or **selective drawing**.

Selectable modules in the toolbar



Clicking on the **plus sign displays** all modules, clicking on the **minus sign collapses** all modules as shown in the graphic.

Clicking on a desired module displays it, clicking on it again hides it again if necessary.

This allows you to quickly configure the interface so that it is optimally tailored to your workflow. The currently set configuration is retained even after the programme is closed and restarted.

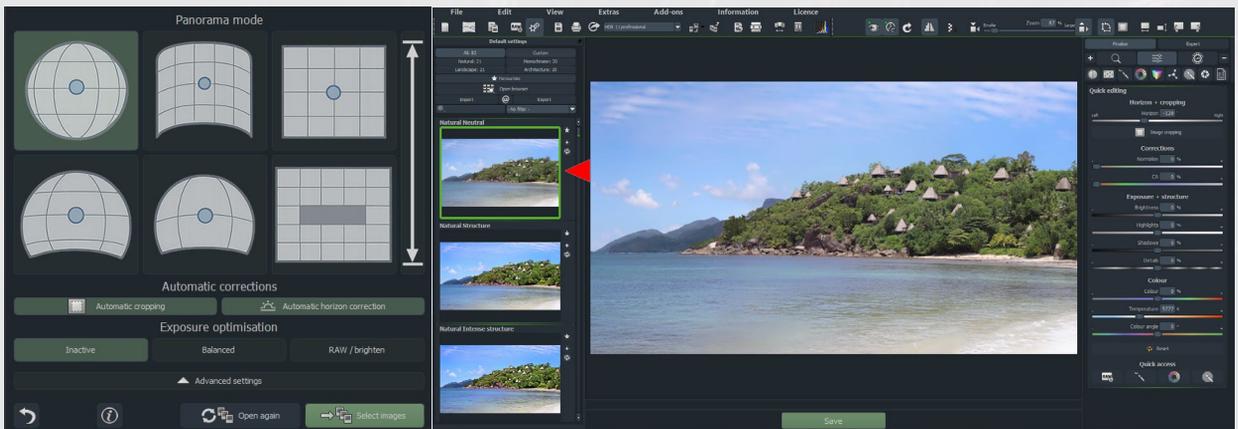
Top row:

1. **Magnifying glass/comparison view.**
2. **Quick editing:** Here you have direct access to all the basic image editing functions such as image cropping and horizon alignment.
3. **Optimisation assistant:** Determines the optimal values for the criteria of **noise reduction, tonal values, contrast, dynamics and image sharpness** from the programme's point of view.

Lower row:

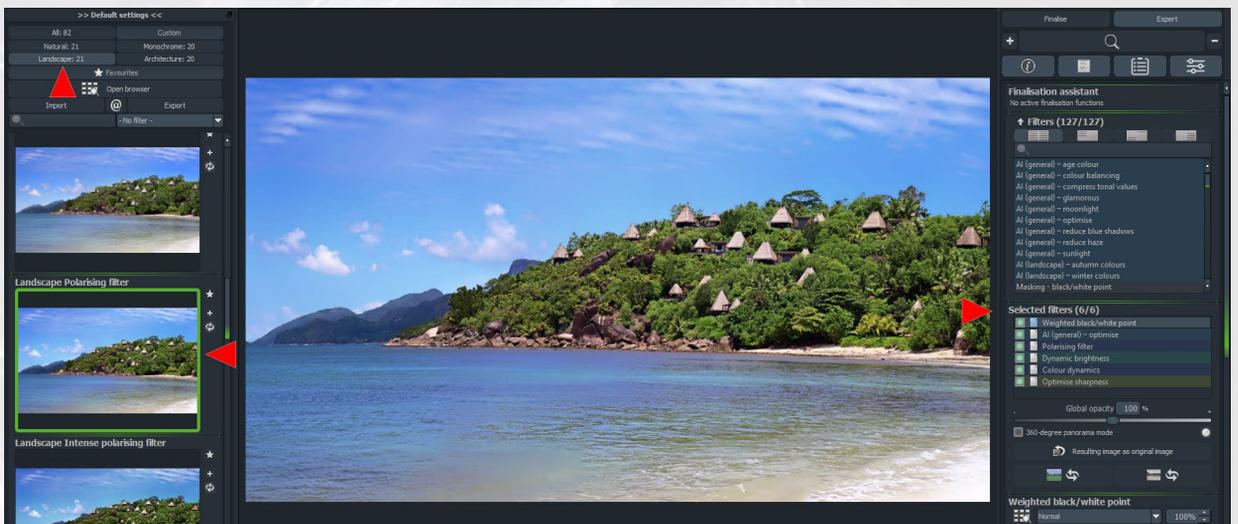
4. **Virtual micro details:** In this module, **virtual micro details** can be added.
5. **Grain module:** In this area, you can simulate natural grain.
6. **Selective drawing:** In this area with 5 'creative' mask areas, you can quickly make local adjustments or alterations using an 'intelligent' brush.
7. **Colour module:** In this module, you can selectively adjust colours on different levels or change them as desired.
8. **LUT module:** This module calculates an individual photo style from any image file.
9. **AI filter area:** Here you can apply previously trained **neural network effects** to the current image.
10. **Sensor error correction:** In this module, you can quickly remove sensor errors and other imperfections in the image with a brush.
11. **Focus peaking analysis area:** Analyses the focus area of an image, e.g. the eyes in a portrait.
12. **Watermark area:** In this area, you can transfer your own transparent graphics in variable sizes and with the desired opacity onto the image.

6. Presets



Once you have selected the panorama mode and automatic corrections (in this example **Spherical, Auto Crop and Auto Horizon Correction**) and imported the desired image series, you will see the resulting panorama in the workspace and the **presets** that determine the image look on the left-hand side.

The default preset is **Natural Neutral**, which retains the image characteristics of the original images with all effects deactivated.



You can quickly change the look of the image to suit your preferences by clicking on another preset in the same category or selecting a different category that may be more suitable for the subject, such as **Landscape** in the example.

If you want to understand which effects are 'responsible' for the selected image look, e.g. **Landscape Polarising Filter**, so that you can further adjust them to your personal taste if necessary, switch to **Expert Mode** and view all effects associated with the **Landscape Polarising Filter** preset in the list of selected effects.

Note: The general handling of presets, 'reading' and changing default settings in **expert mode**, and creating your own presets is described in detail in the **Presets guide**.

Change of mood



By clicking on a desired preset, you can instantly enhance or 'optimise' the look of an image, as shown here with the **Natural Colour** preset...



... or choose a completely different image mood, such as **Landscape Moonlight**,

...



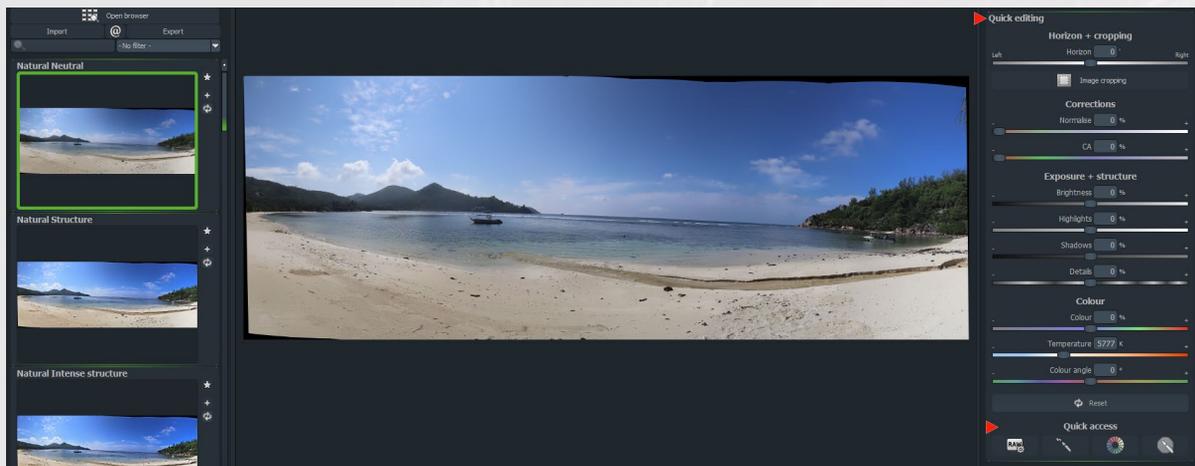
... **Landscape Winter colours**...



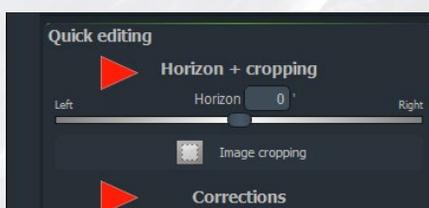
... or **Monochrome Silhouette**.

In conjunction with the options for influencing **Quick editing** (see next chapter) and in **Expert mode** with effects and parameter variations, you can quickly and intuitively create an image look that meets your individual personal expectations.

7. Quick editing and Quick access



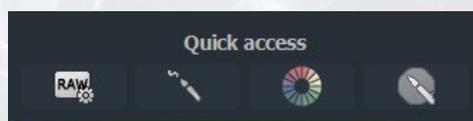
As the name suggests, **Quick editing** allows you to quickly edit the resulting panorama if necessary.



This module is divided into two intervention options:

- **Horizon + cropping**, where a result image can be **aligned** and/or **cropped** as required.
- **Corrections**, where various controls and parameters enable quick individual optimisation or adjustment of the image look.

Note: All changes made in quick edit mode are automatically combined with all other settings.



The **Quick access** feature below **Quick editing** also delivers what it promises: With one click, you have direct access to the modules (from left to right):

- **RAW**, an exceptional module in which you can perform complete image editing (see **RAW editing guide**).
- **Selective drawing**, the 'creative module', which mainly uses a brush tool to turn your imaginative ideas and compositions into reality easily, quickly and intuitively (see **Selective Drawing Guide**).
- **Colour module**, in which you become your own colour director and can select specific colour areas, match them to other colours or recolour them (see **Colour Module Guide**).
- **Sensor error correction**, in which not only sensor spots but also any kind of interference are removed at lightning speed using intelligent correction functions (see **Sensor Error Correction Guide**).

Horizon + cropping



If you have left **automatic cropping** and **automatic horizon correction** disabled before loading a series of images, manual cropping will be necessary in most cases.

If you took the photograph straight ahead, centred from your hand or with a tripod, you can probably do without the horizon correction. The sequence in which you lose the least image content follows the arrangement of the two options: **First straighten the horizon, then crop the image.**

Align image to a horizon line



In the example, the horizon 'tilts' slightly to the right.



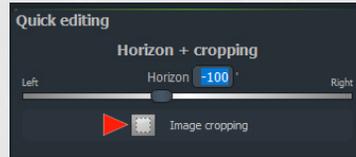
Now drag the slider in the opposite direction as far to the left until the horizon line meets your expectations; in the example, this is the value **-100**.

The unit of measurement for this rotation is **arc minutes**, whereby 60 arc minutes correspond to 1° of rotation.

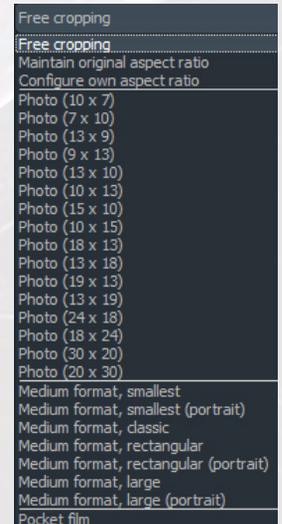
Note: The horizon line can, of course, also be an 'imaginary' horizontal or vertical 'orientation line'.

In the **RAW module**, even more precise alignment is possible in the **Distortion** section.

Image cropping

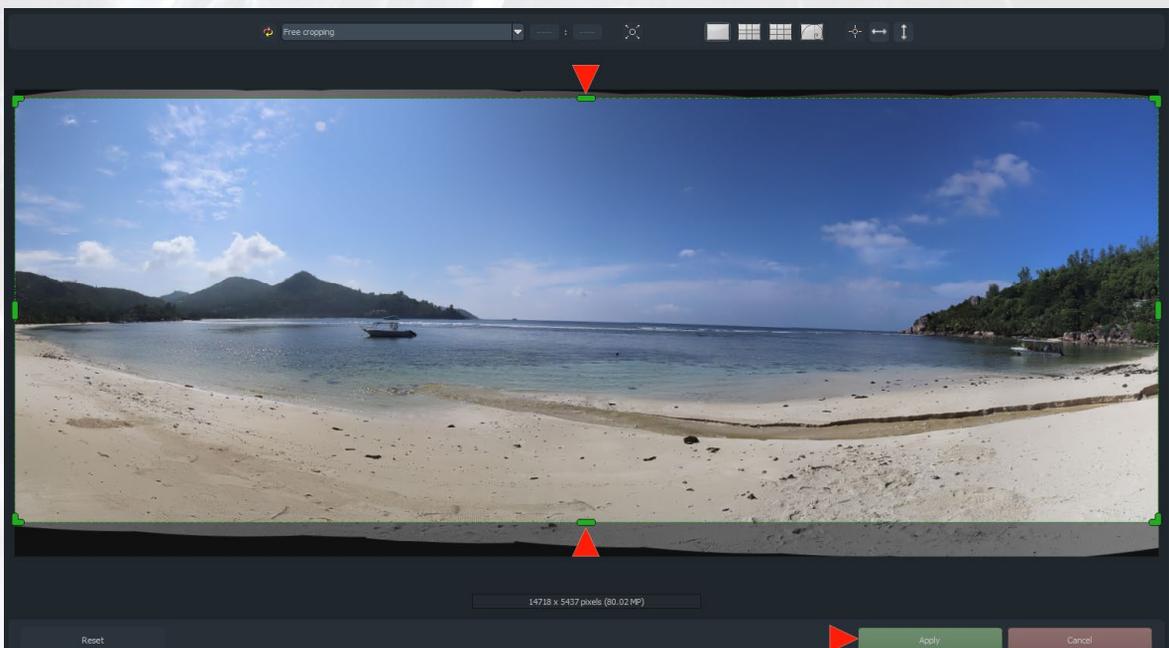


By clicking on the **Image cropping** button ...



... the **Cropping image data** window opens with the 8 green handles.

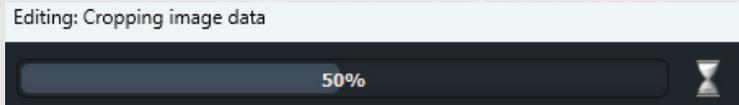
By default, Free Image Crop is selected. Clicking on the button or the small arrow next to it displays all other available options (see graphic on the right).



When cropping freely, drag the 'centre' **upper handle down** until all black parts of the image are outside the boundary line and drag the **lower handle up** until all black parts of the image are outside the boundary line. Then click **Apply** to confirm the image crop.

If adjustments were required on the left and right, the 'centre' controls on the left and right would have to be moved towards the centre accordingly.

Panorama result image



Once the calculation of the cut, which is displayed in the information window, is complete, ...



... you will see the aligned and cropped panoramic result image.

If you are satisfied with this result, it can be saved or printed out if required (see **Flash workflow**).

If you want to optimise or change the **image look**, use the controls in the correction area (next page).

Notes: All cropping options, such as cropping with custom or fixed aspect ratios, activating guides such as the **Golden ratio**, are described in detail in the **General Functions/Custom Image Cropping guide**.



Clicking on the **Show/hide additional functions** button in the toolbar displays further options.

Clicking on the **'Crop icon'** opens the same window as when you click on the identical icon in **Quick Editing**.

With these displayed options, you can, for example, **rotate** the panoramic image clockwise or anti-clockwise rotate by 90 degrees, or **flip** it horizontally or vertically.

Further possibilities for influencing image processing



Aligning and **cropping** a panoramic image are the most frequently used quick edit functions if the corresponding automatic settings have not been activated in the panorama settings. You can use the controls in the areas of this module just as quickly to

- **Corrections**, e.g. removing colour casts,
- **Exposure + structure** affect image brightness or details,
- Change the **Colour** of the image by adjusting the colour intensity or temperature.

Normalise



Normalise removes colour casts and ensures that the histogram, which you can show or hide by clicking on the button in the toolbar (graphic to the left of the histogram), is 'stretched' and fully utilised when you drag the slider to the right (next page).

The example shows that something is missing in the histogram in the 'black' area (left) and 'white' area (right). The gaps are marked with red rectangles for better visibility.

Normalisation requires prior image cropping, as otherwise the black areas will be 'evaluated' and distort the result.

Make full use of the histogram and improve image quality



Now drag the **Normalise slider** to the right until the histogram 'hits' on the left and right. In the example, this is a value of **45**. Any **colour casts** in the image are reduced because the individual colour channels red, green and blue are 'stretched' and balanced individually or separately. At the same time, the '**brightness potential**' is better utilised.

Notes: Here, as in the other examples, the default preset **Natural Neutral** (without effects) has always been selected in order to show a better comparison between the original image look and the optimised or modified one.



Compared to the uncorrected original ...



... **after Normalisation**, the resulting image appears 'warmer', which accurately reflects the lighting conditions during photography. The improved utilisation of brightness also looks better visually and appears slightly more 'present'.

CA – Chromatic aberrations

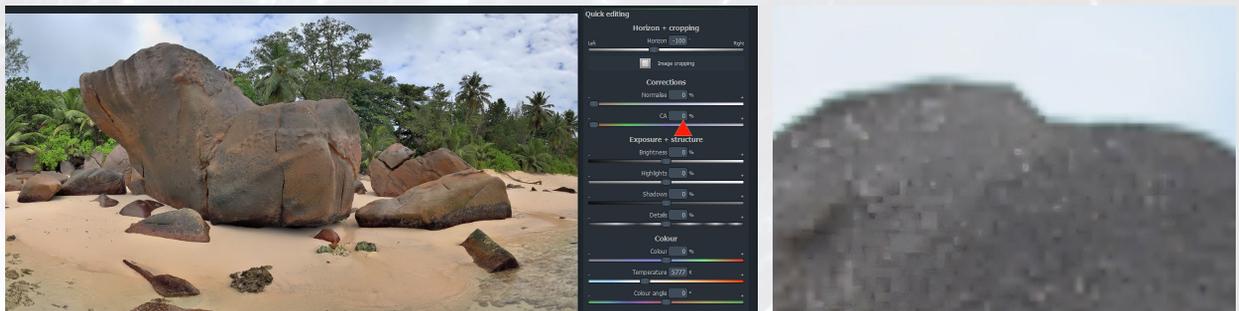


These unsightly colour fringes or colour distortions are particularly visible at contours or edges to the surrounding area in the colours blue-yellow, red-green or magenta-violet.

These **chromatic aberrations** on the contours of a panoramic image are effectively reduced optically by removing these contours using the **CA control**, and are no longer distracting.



Slowly move the slider to the right until the seams disappear or are reduced.

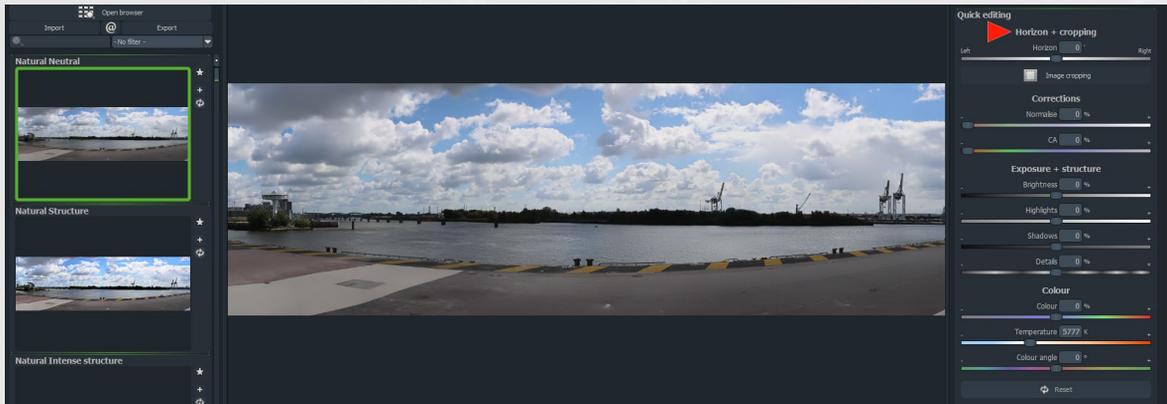


In the second example, the colour fringes visible in the high magnification image can also be effectively reduced by dragging the **CA slider** to the right ...



... and are eliminated.

Exposure + structure



In this section, which contains parameters for 'classic image editing', you can use the sliders to adjust the **exposure, details** and/or **colours** as needed so that the resulting panorama image matches your viewing habits or taste.

In this area, too, all changes are automatically applied to all previously selected settings.

In the sample images, the default preset **Natural Neutral** has been retained.

After selecting an alternative preset, you can of course assess whether corrections in this area are no longer necessary or specifically enhance or reduce the effect of the selected preset.

The following list of keywords provides an overview of the various ways in which influence can be exerted:

- **Brightness:** Brightens or darkens the image.
- **Highlights:** Lightens only the bright areas or darkens it.
- **Shadows:** Lightens or darkens only the dark areas (shadows).
- **Details:** Enhances the details in the image (slider to the right) or smooths the image by reducing the details (slider to the left).
- **Colour: Increases** (slider to the right) or **reduces** colour intensity (slider to the left).
- **Temperature:** Changes the **colour temperature** towards cool to cold (control to the left) or warm (control to the right).
- **Colour angle:** With this slider, you can create exciting and unusual image looks in a flash.

The rotation of the colour angle is performed in the colour-harmonious colour space **RYB** (red, yellow, blue), which is frequently used in art.

Selected image examples

There is no 'right' or 'wrong' when it comes to quick image editing. Each image is evaluated differently on an individual basis. Whether changes should be made, and if so, what, depends on the viewer's personal assessment and visual preferences.

The following examples are therefore not a 'recipe' for your own implementation ideas, but rather show some possibilities of how a few parameter changes can influence the look of an image.

In many cases, the 'classic' option corrects the exposure situation so that areas that are too dark, e.g. in urban canyons, need to be brightened (**shadows**), areas that are too bright in the sky need to be darkened (**highlights**) and the overall brightness needs to be adjusted (**brightness**). Everything else usually concerns a desired change in the look of the image.

Start by thinking about the image characteristics you want to see, then change the parameters accordingly or simply experiment with the controls to get inspiration from the 'live changes'.



Example 1: Landscape photograph in Iceland

The dark rock formations should be lightened slightly and appear more detailed, the highlights should be set a little darker to give the clouds a little more structure, and the overall impression should appear 'warmer'.

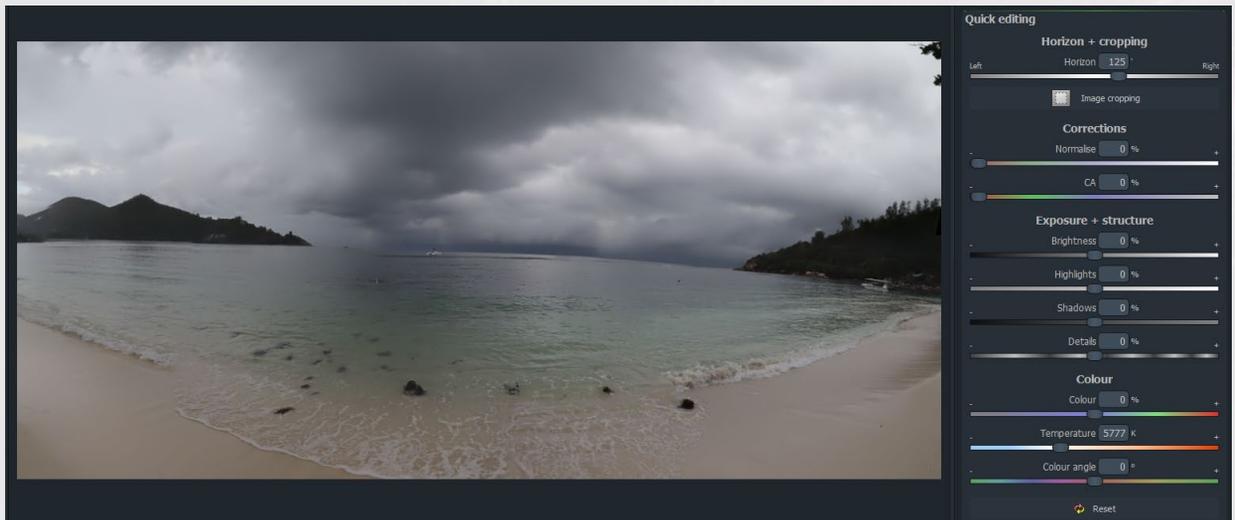


By changing the controller values

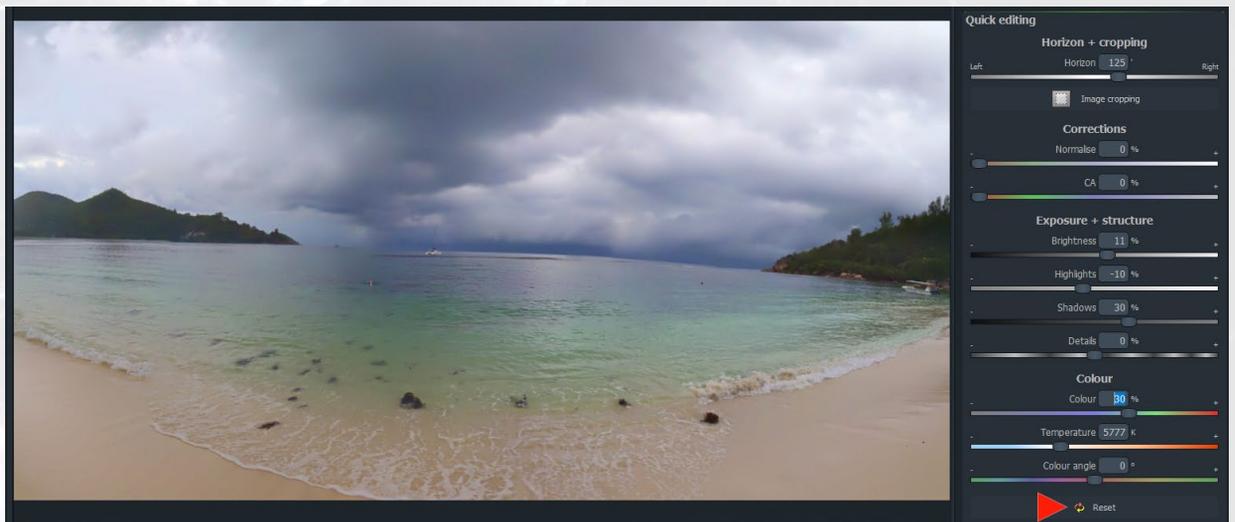
- **Brightness** at **+5**,
- **Highlights** at **-25**,
- **Shadow** at **+25**,
- **Details** at **+20**,
- **Temperature** at **7,000K**

the desired result has been achieved.

Example 2: Landscape photograph taken in the Seychelles



In this overall somewhat too dark 'multi-row' panorama, the exposure should be adjusted (**Brightness**), with the reduction of highlights in the areas of the clouds that are then too bright being 'counteracted', the dark areas of the image being brightened in a targeted manner (**Shadows**) and the 'pale' colours being made to appear somewhat brighter and more intense (**Colour**).



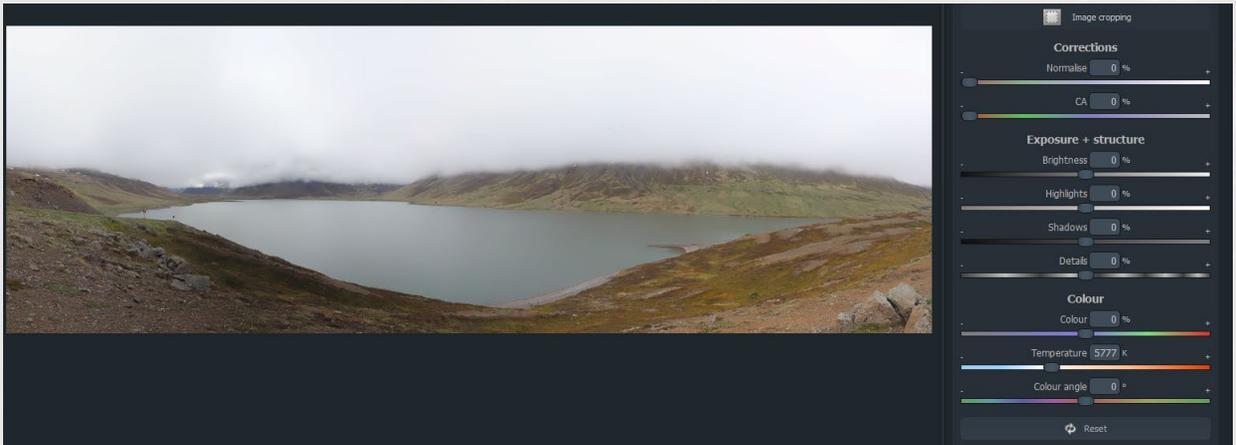
By changing the controller values

- **Brightness** at +11,
- **Highlights** at -10,
- **Shadows** at +30
- **Colour** at +30,

the desired result has been achieved and the already impressive panorama has become a real eye-catcher.

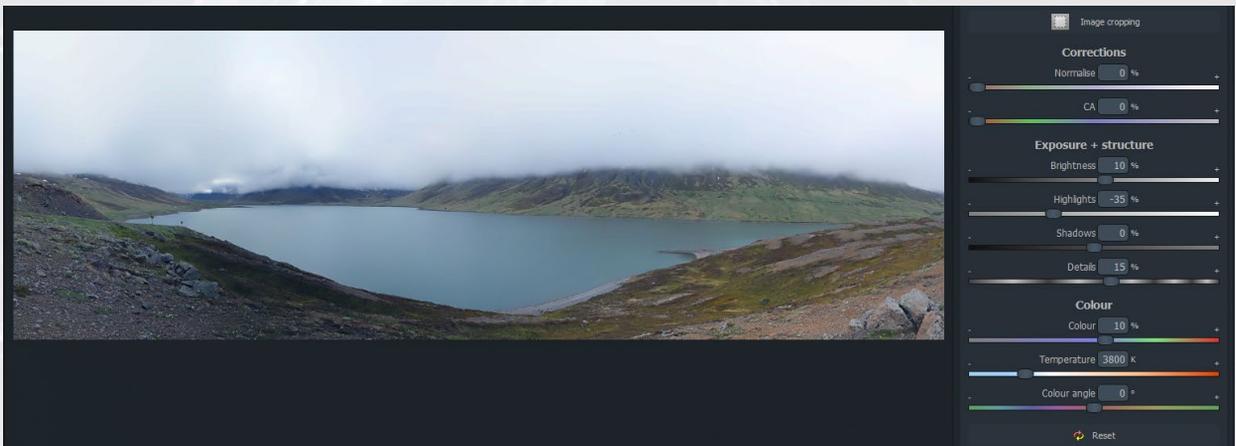
Note: Double-clicking on the currently active parameter resets it to the default value; clicking on **Reset** resets all selected changes in this area.

Example 3: Landscape photograph in Iceland



In this image, the overall impression should appear 'cooler' (**Colour temperature**), the colours and details should be slightly enhanced so that everything appears a little 'crisper' and more colour-intensive (**Colour, Details**), and the bright areas (**Highlights**) should be slightly darkened to reduce the haze and thus achieve a slightly clearer distant view.

If necessary, the brightness is adjusted after assessing the overall impression.



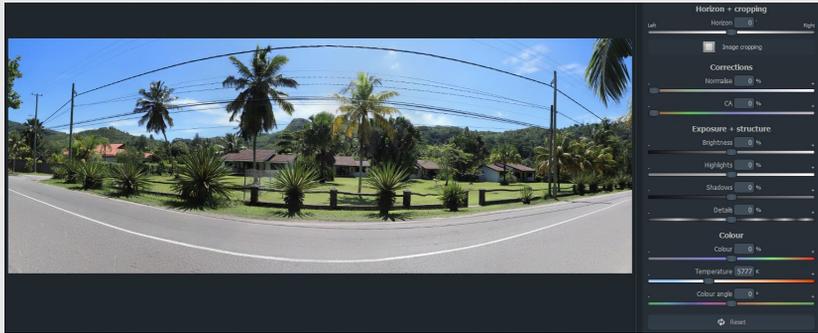
By changing the controller values

- **Brightness** to +10,
- **Highlights** to -35,
- **Details** to +15,
- **Colour** to +10,
- **Temperature** to **3.800K**

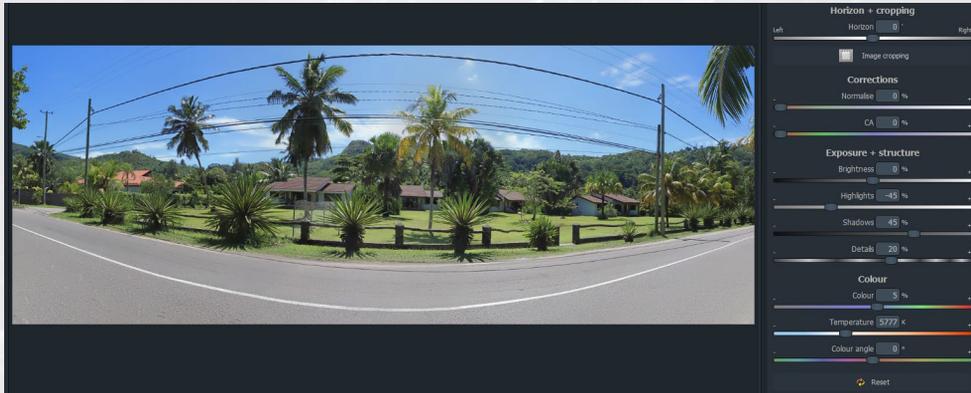
the desired result has been achieved. The altered image is not 'better', but different from the original version. You decide which one is more to your taste.

Note: If you save a panoramic image as a **project**, all settings will be retained when you open this project at a later date and can be adjusted or changed again if necessary.

Example 4: Panorama of the Seychelles



There are no image-related 'problems' in this interesting panorama. If necessary, you can quickly 'rotate' the image look in different directions.



Emphasise colours, details and contrast slightly

By changing the controller values

- **Highlights** to **-45**,
- **Shadows** to **+45**,
- **Details** to **+20**,
- **Colour** to **+5**,

this desired image look can be achieved with just a few setting changes.



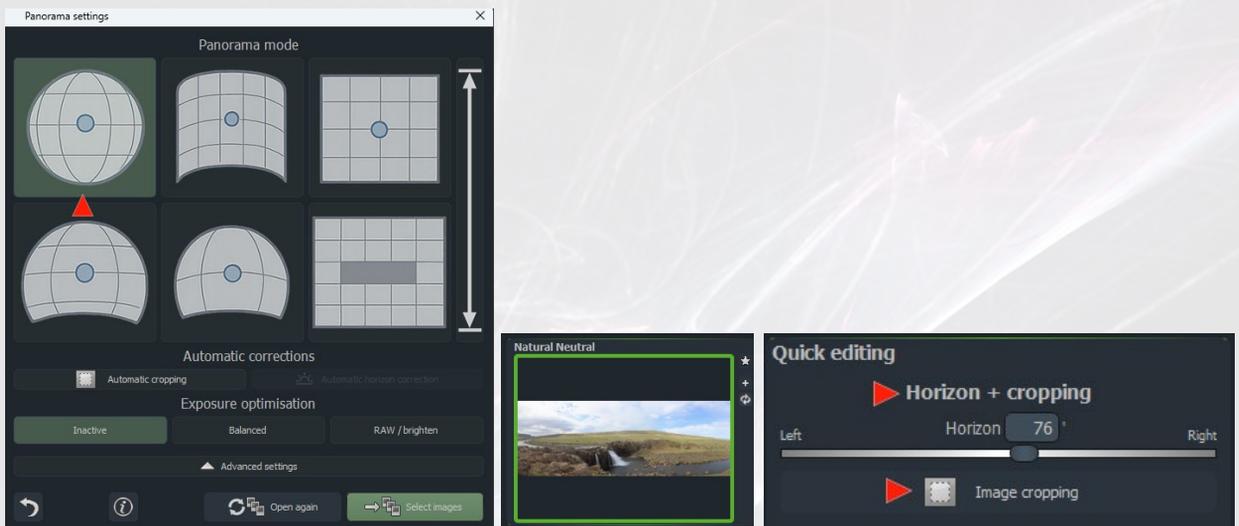
Desaturated image with a 'sepia look'

By changing the controller values

- **Colour** to **-100** (not a pure black-and-white image, greatly reduced colour),
- **Temperature** to **+10.000**,
- **Colour angle** to **-180°**

you can achieve a completely different visual effect, which can quickly be given other colour tones, e.g. via the colour angle.

8. Flash workflow



In **PANORAMA**, you can rely completely on the default settings

- Panorama mode **Spherical** (sphere),
- the **inactive** options **Automatic cropping** and **Automatic horizon correction** (graphic on the left),
- Preset **Natural Neutral** (centre graphic),

in just a few steps, you will obtain a very good result image, which can be **aligned** and **cropped** (if necessary) in **Quick editing** mode before saving (see graphic on the right):

Step 1: Load the desired image series.

Step 2: Align the result image: This step is not necessary if the horizon line does not need to be corrected.

Step 3: Crop the result image.

Step 4: Save and/or select one of the scaling suggestions – done!



It is even faster if you activate **Automatic cropping** and then the **Automatic horizon correction** option that appears. These options remain active even after you close the programme until you deselect them again.

Then save or print the finished panorama image in a flash:

Step 1: Load the desired image series.

Step 2: If necessary, correct the automatic alignment. If this is not necessary, skip this step.

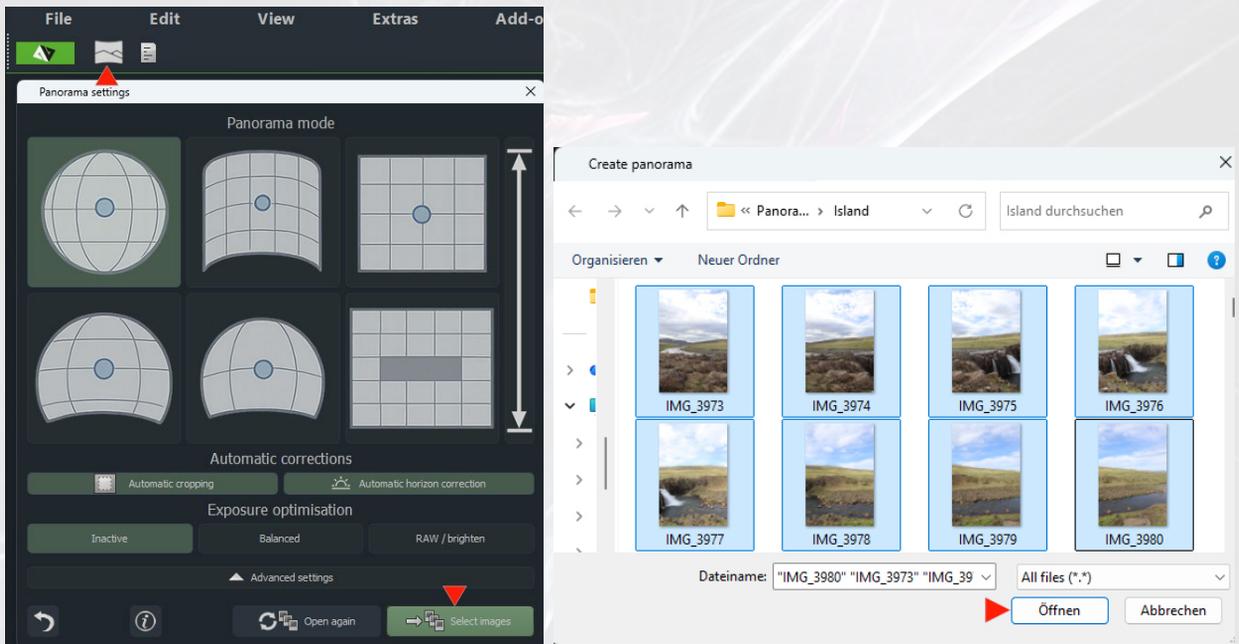
Step 3: Save and/or select one of the scaling suggestions - done!

This **flash workflow** is described on the following pages.

Step 1: Load the image series.

There are two equivalent ways to load image files and drag them into the programme window. You can choose the way that is most convenient and quickest for you:

The most popular method: Import image series via panorama setting



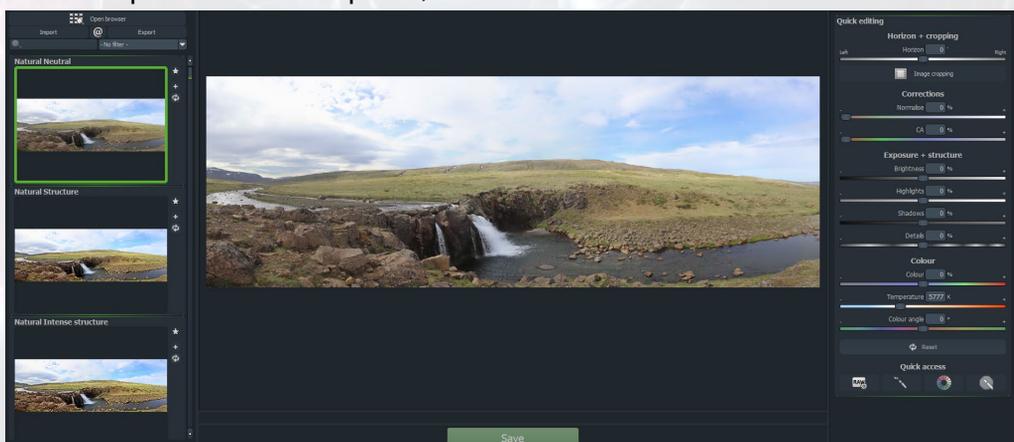
Clicking on the **New Panorama** button on the start screen opens the **Panorama Settings** window.

Click on **Select Images** to select the desired images in the folder of your choice that then opens ...



... clicking on **Open** (Öffnen) triggers the creation of the panorama from the selected images, eight in the example. The progress is displayed in the information window that appears.

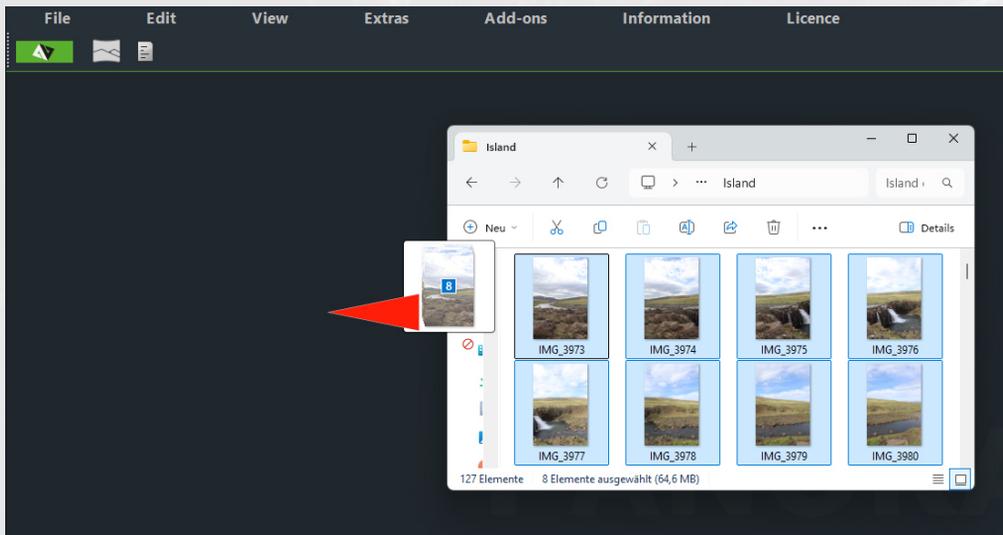
As soon as the process is complete, ...



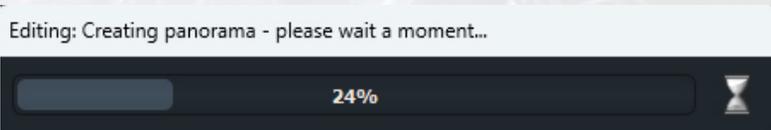
... the result image is displayed in the working window.

The quickest way: Import image series using drag & drop

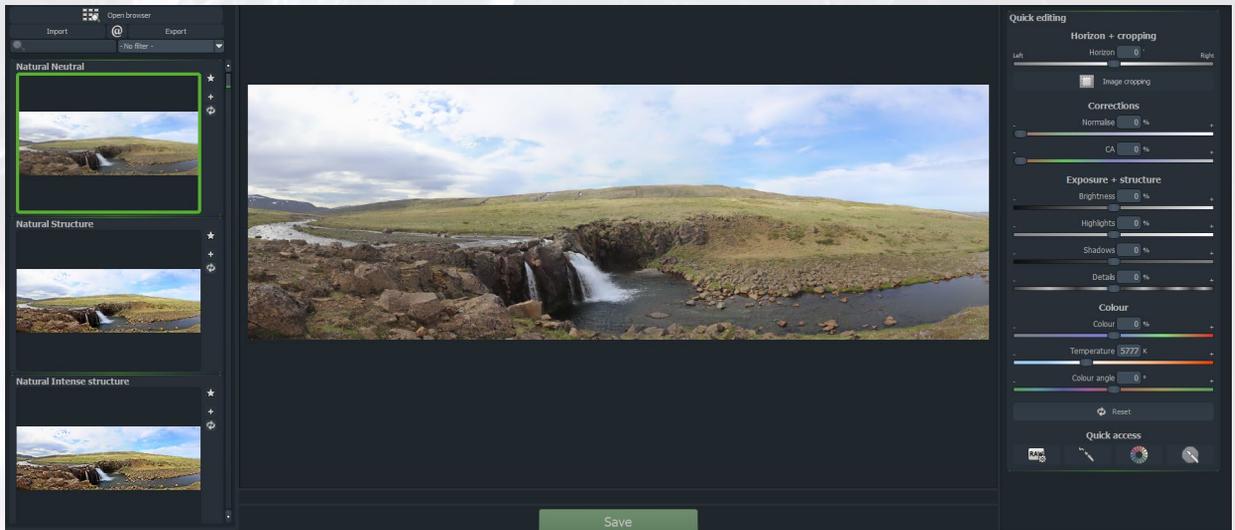
With this method, you 'skip' the step involving the 'Panorama Settings' window.



Open the folder in Explorer, select the desired images and simply **drag and drop** the files into the programme window by holding down the left mouse button.

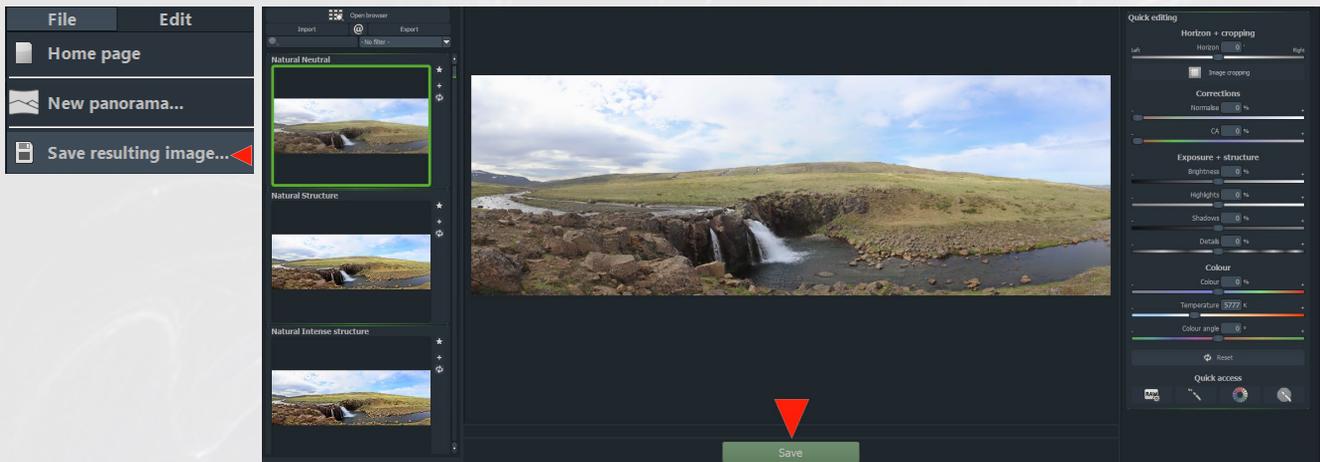


As soon as you release the mouse button, the panorama creation process is initiated and the progress is displayed.

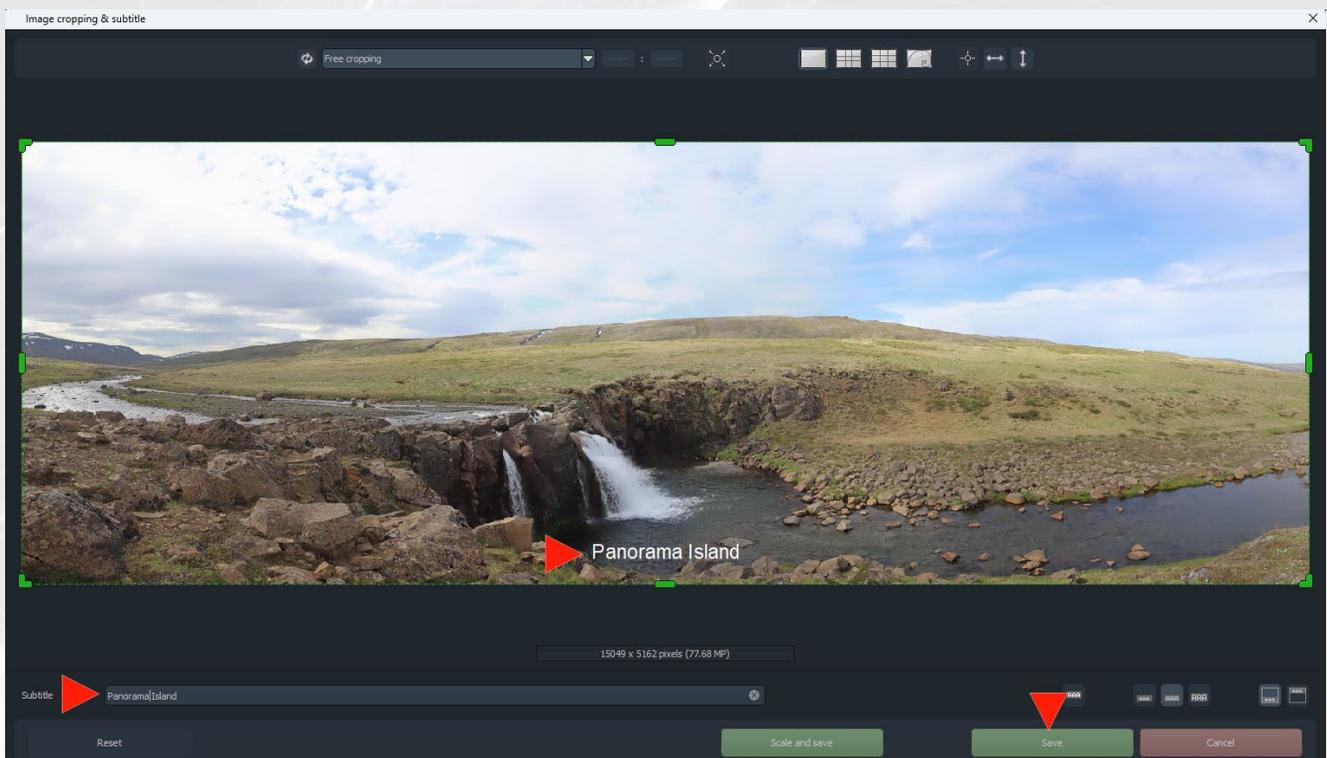


Note: If you upload images using **drag & drop**, they will **not** be 'parked' in the **Open again list**. You can only use this function if the images were previously imported via **Select images** (see also the chapter **Automatic Corrections and Settings/Open again**).

Step 2: Save/print the result image, crop it or use the scaling options



By clicking on **Save resulting image** in the file menu or the green button **Save ...**

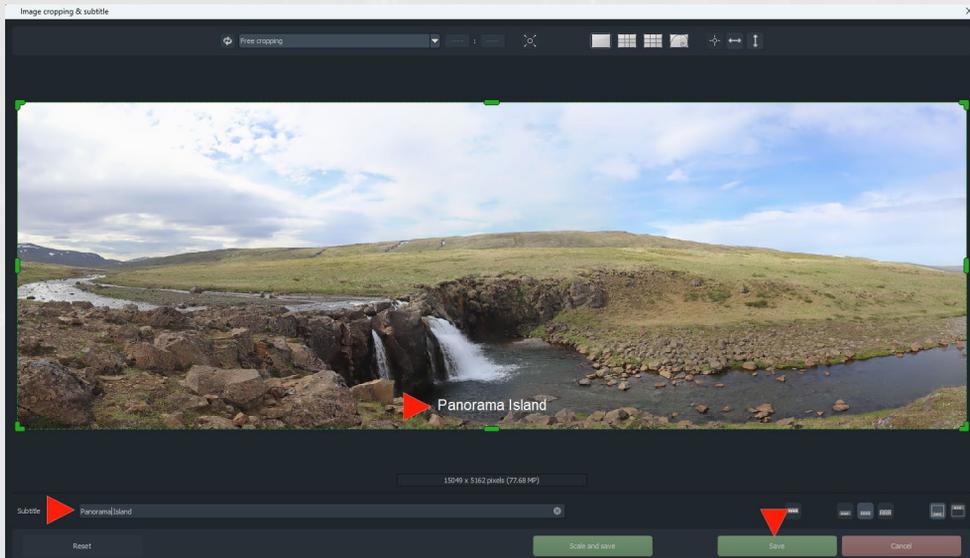


... switch to the **Image Cropping & subtitle** window, where you can crop the image and/or add a caption if necessary.

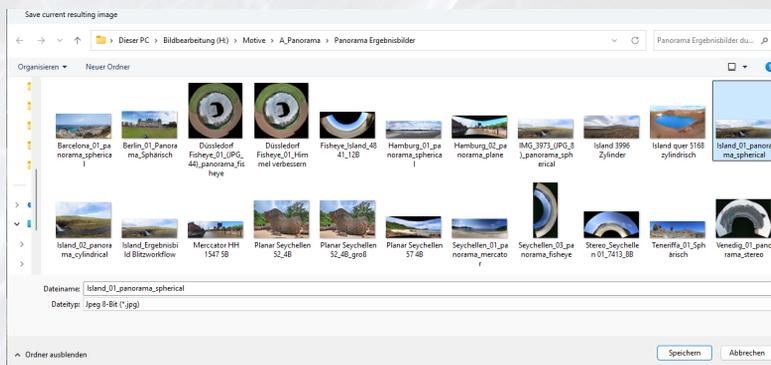
Scale and Save offers the option of using various scaling presets, e.g. for social media formats, before the image is saved.

Note: All image cropping and scaling options are described in detail in the **General Functions guide**.

Save result image in folder



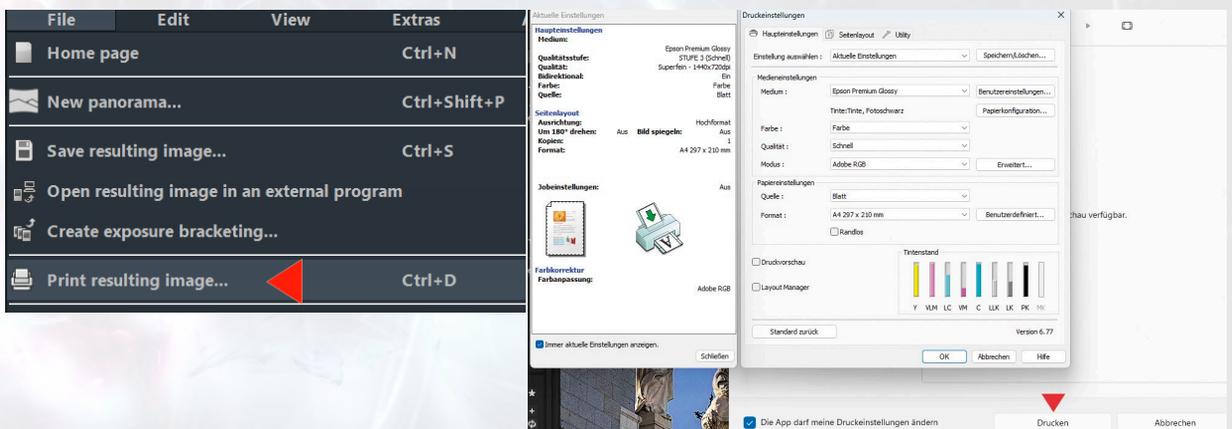
By clicking on the **green Save button** again ...



... save the image in a folder of your choice.

This completes the flash workflow in two steps.

Print

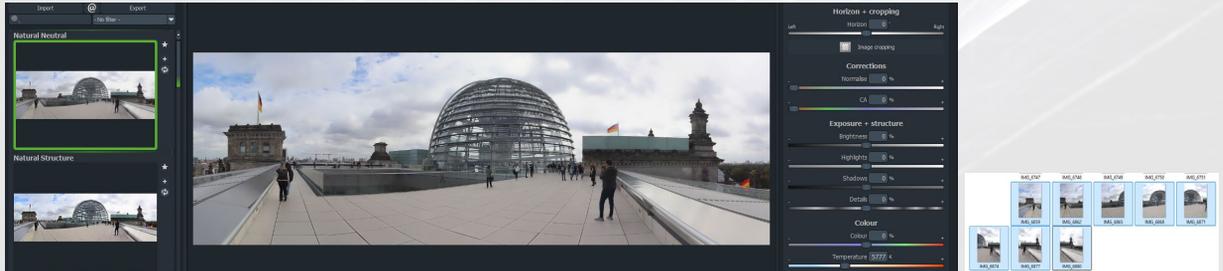


If you also want to print the result image, click on **Print resulting image** to open the window with the print options. Here, select the desired printer and print the image with the appropriate settings.

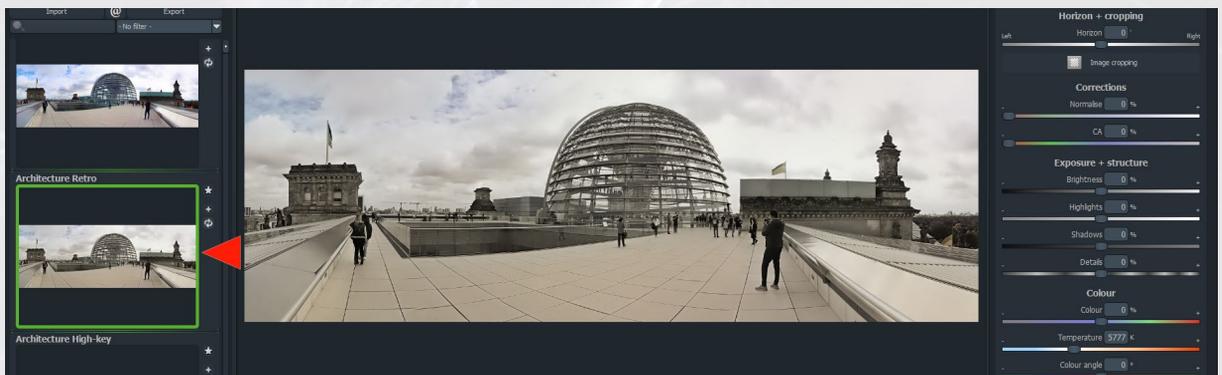
9. Extended workflow

PANORAMA makes it easy for you to vary the flash workflow with one or just a few clicks, for example to create impressive and surprising results with different panorama modes or image looks, as shown in the following image examples. The **changes to the flash workflow** are always described.

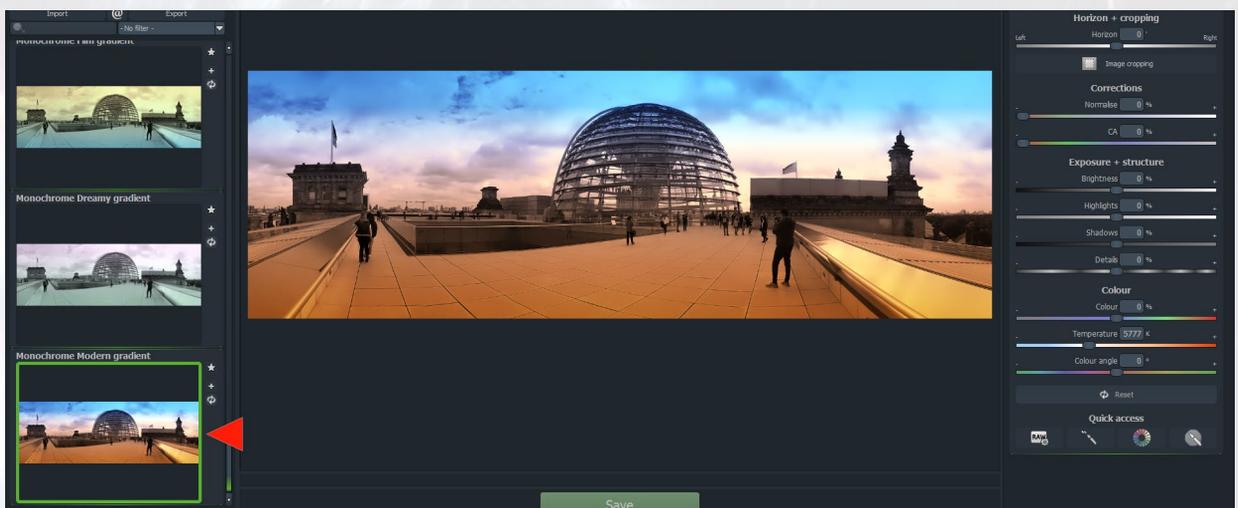
Example 1: Changing a preset



If you load the series of 8 images from Berlin, the result image will be displayed with the **Natural Neutral** preset.

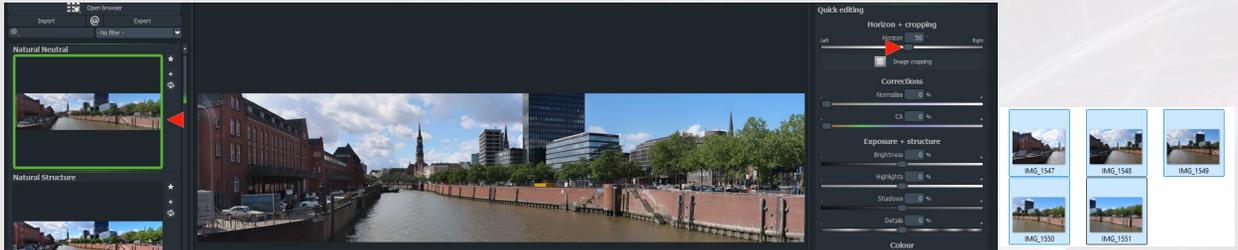


After 2 clicks, switching to the **Architecture** category and selecting the **Architecture Retro** preset, you may like this alternative image look...

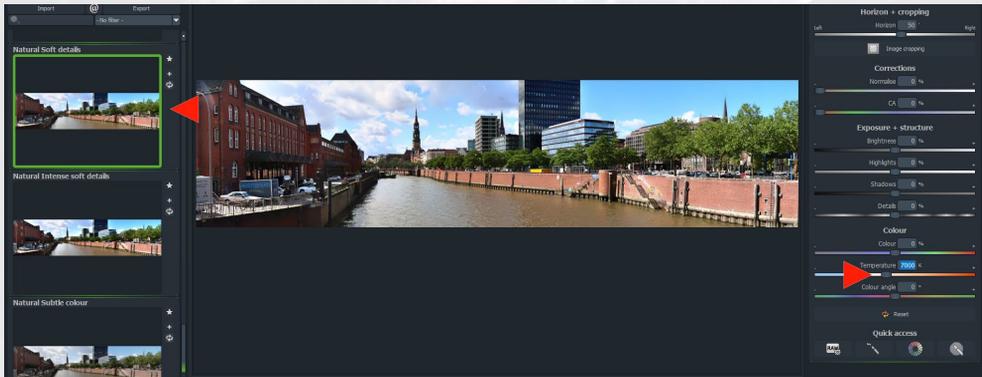


... or, after two more clicks, with the selection of the **Monochrome** category and the **Monochrome Modern Gradient** preset, this unusual image look.

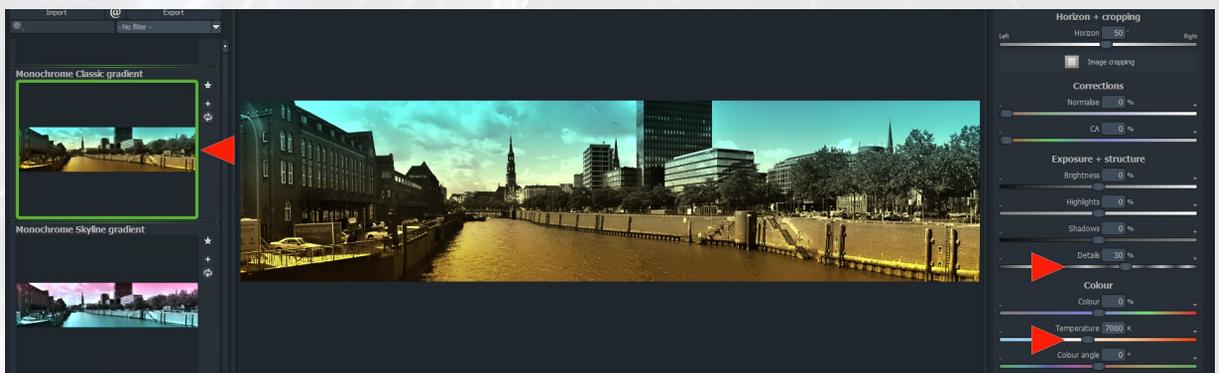
Example 2: Varying presets with parameters



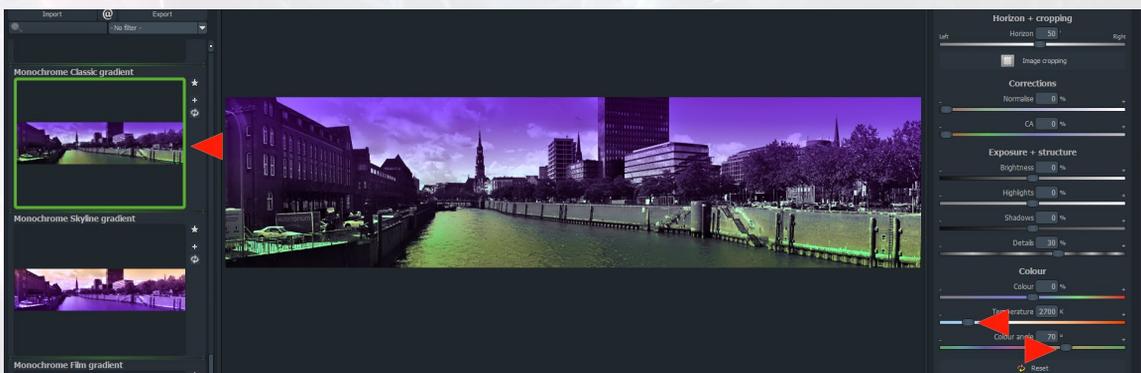
In this series of 'Hamburg' images, the first step was to readjust the alignment using the **Horizon slider**.



The Natural **Soft details** preset in combination with the **Temperature parameter**, which has been changed to **7000 K**, quickly leads to a different image statement ...

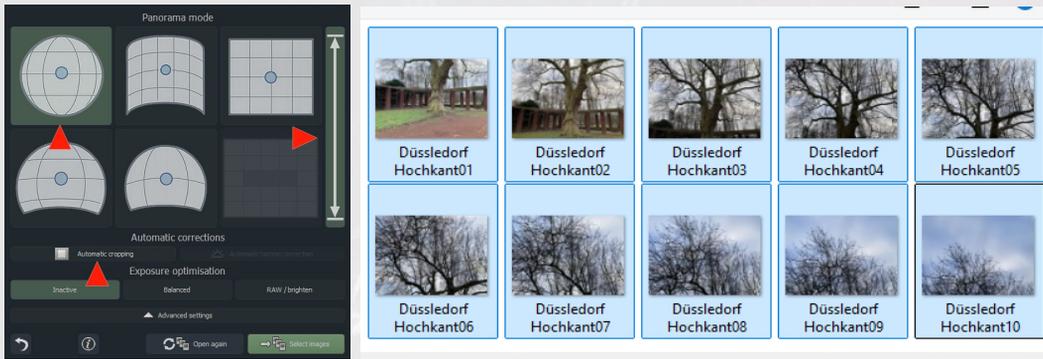


... such as selecting the **Monochrome** category with the **Monochrome Classic Gradient** preset. Here, the **Detail slider** has been set to **+30**.



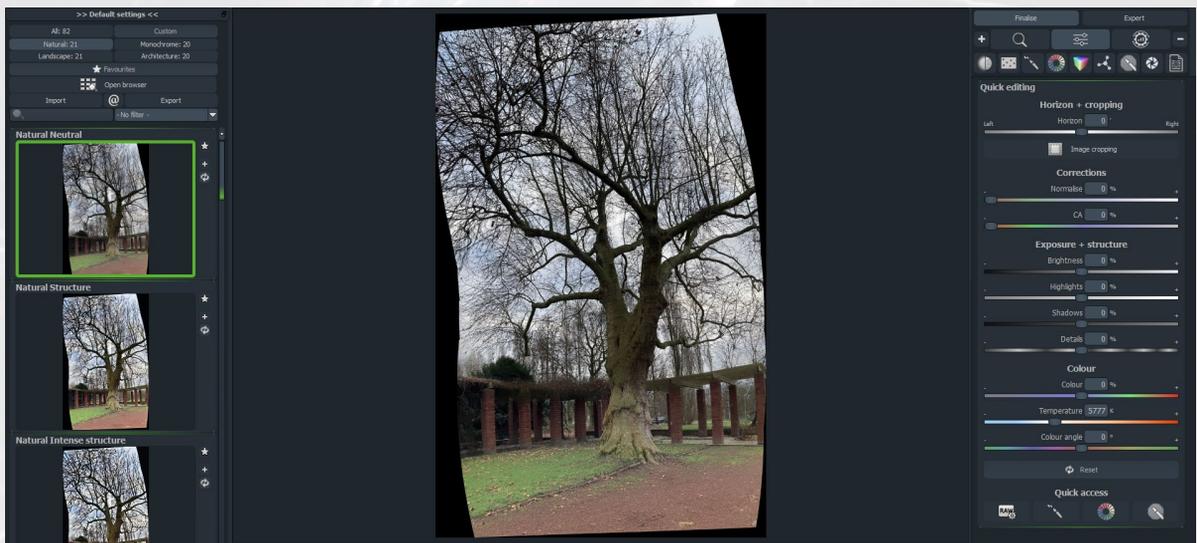
Now change the **Temperature** to the 'cool' value of **2700 K** and the **Colour angle** to **70°**, and the mood of the image will change completely in a flash.

Example 3: Vertical mode in conjunction with spherical



In this series of 10 tree images (photos: author), in which the camera was continuously raised higher, the mode combination Vertical and Spherical was selected.

The automatic corrections **Crop** and **Horizon Correction** are **deactivated**.

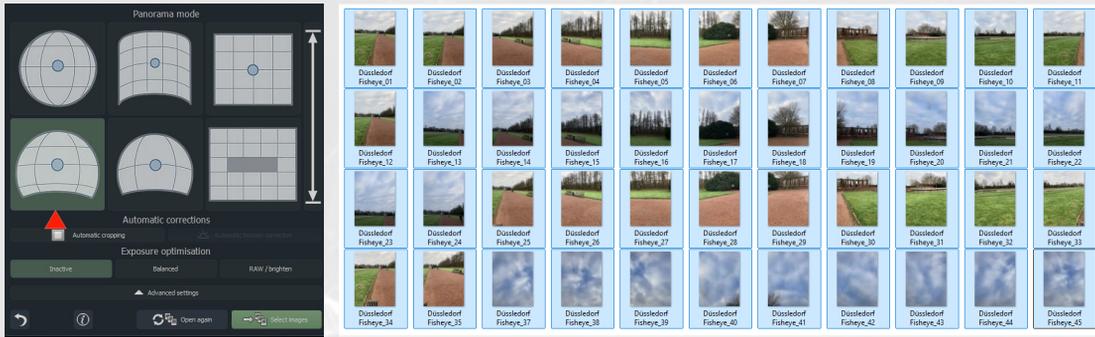


After creating the panorama, the image was manually aligned and cropped.



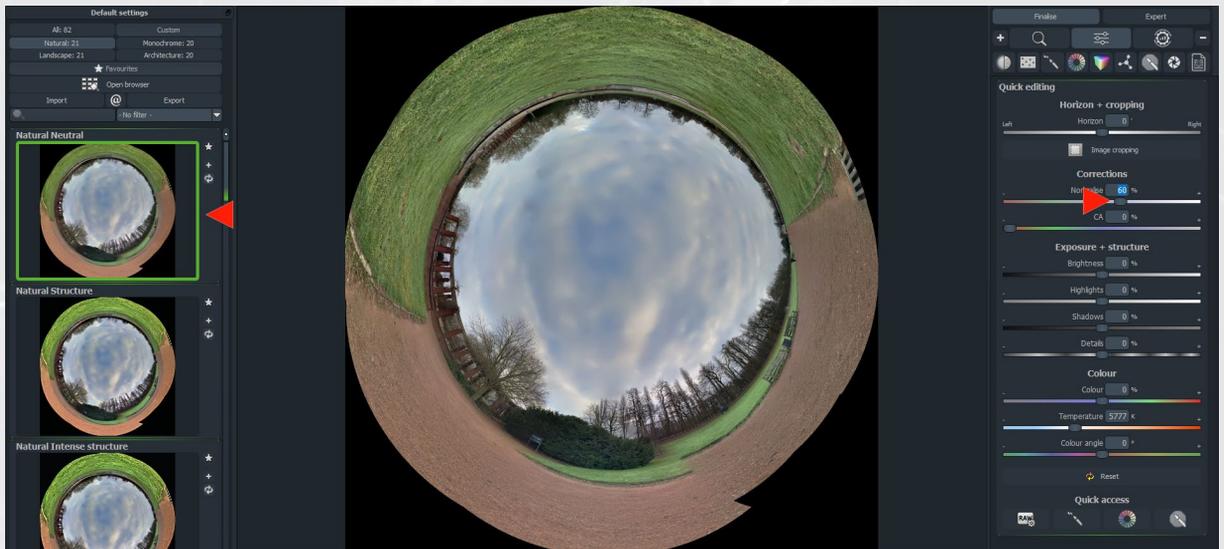
After selecting the **Landscape** category with the **Landscape Intense gradient filter** preset and changing the **Temperature** to the 'warmer' value of **7000 K**, this combination can be an alternative or preferred choice.

Example 4: Fisheye mode

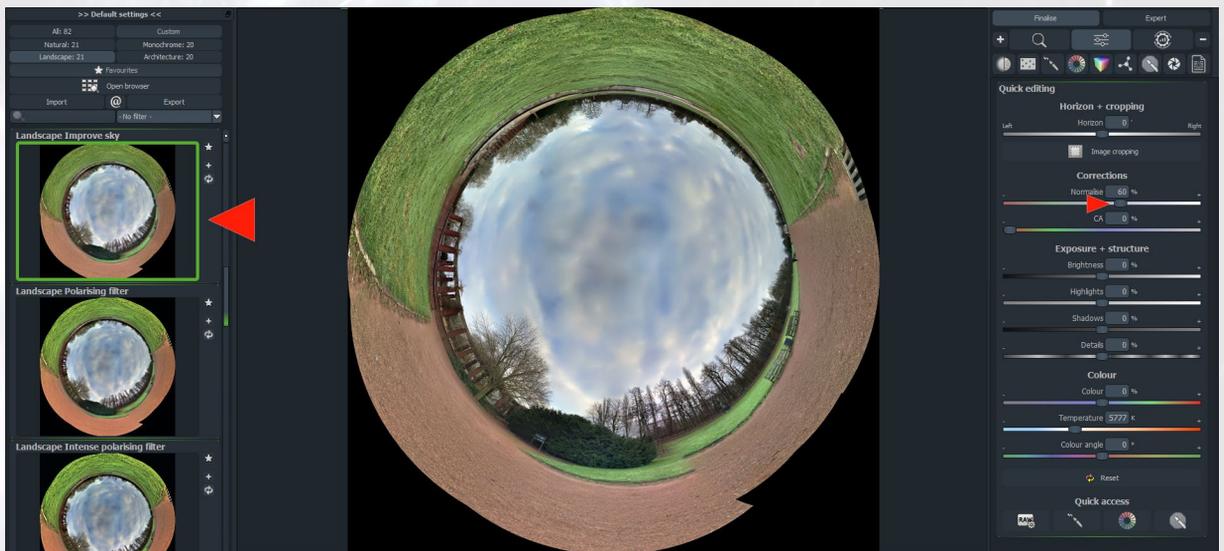


Panorama mode **Fisheye** is well suited for this 'multi-row' series of 44 images (photos: author).

The **automatic cropping** and **horizon correction** features are **disabled**.



After generating the panorama and applying the **Natural Neutral** preset...

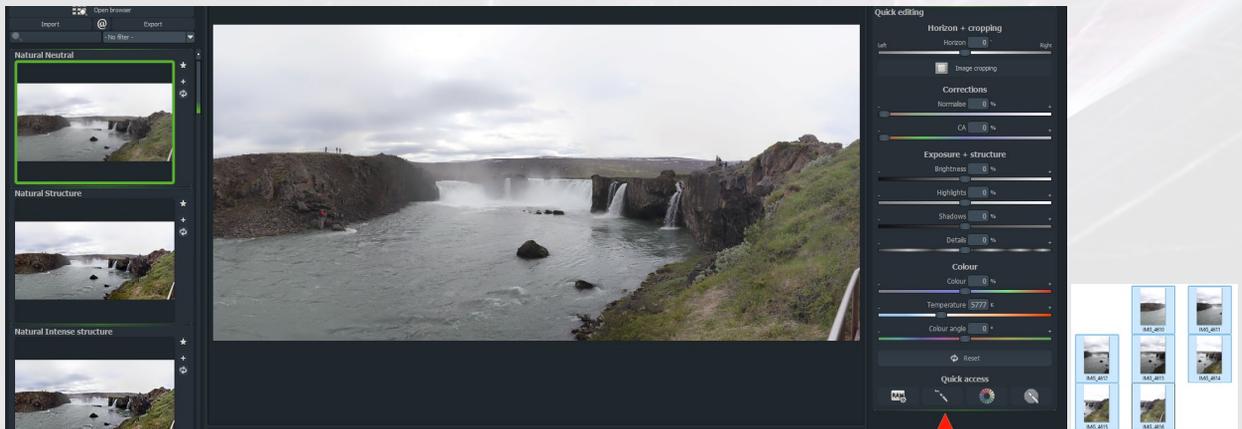


... the image look has only been slightly changed by selecting the **Landscape** category with the **Landscape Improve sky** preset.

A further optimisation was achieved for both presets by raising the **Normalise** slider, as this makes better use of the '**brightness potential**'.

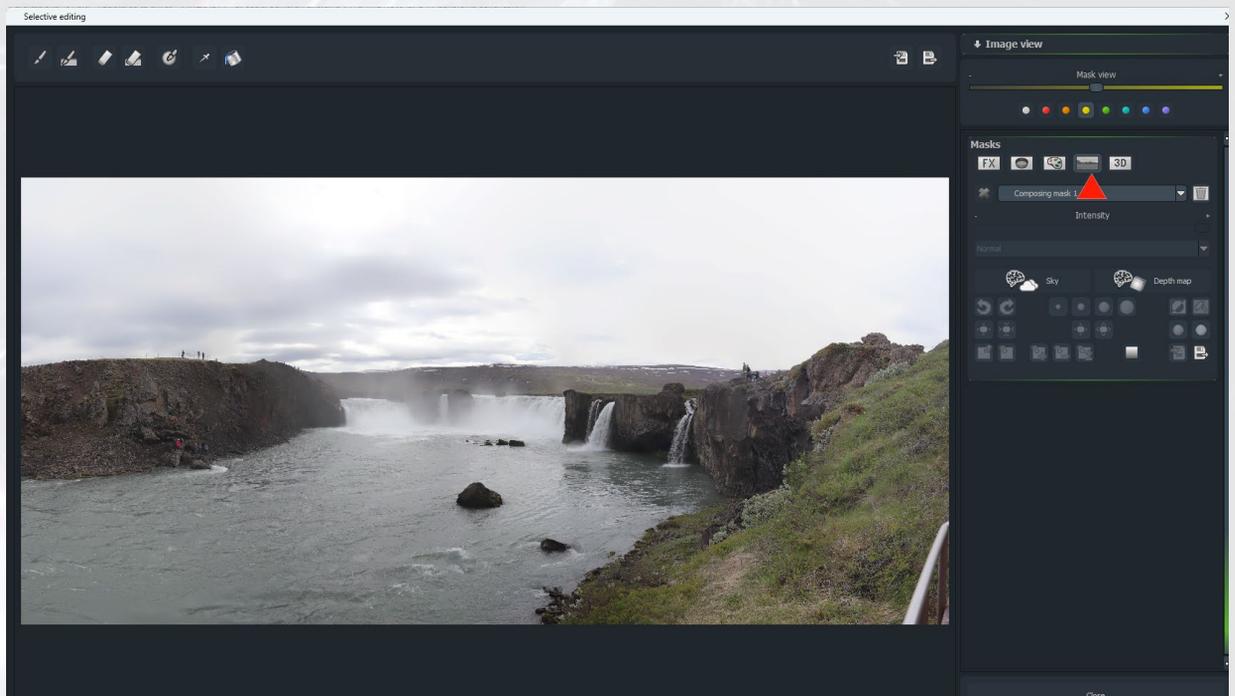
Example 5: Replacing the sky in the Selective Drawing module

Just as easy as switching between different panorama modes and presets or changing parameters is making changes, for example, to the modules offered in **Quick access**.



In the last image example from Iceland, the grey sky is to be replaced with a more exciting one.

By clicking on the **Selective drawing** button in **Quick access** ...



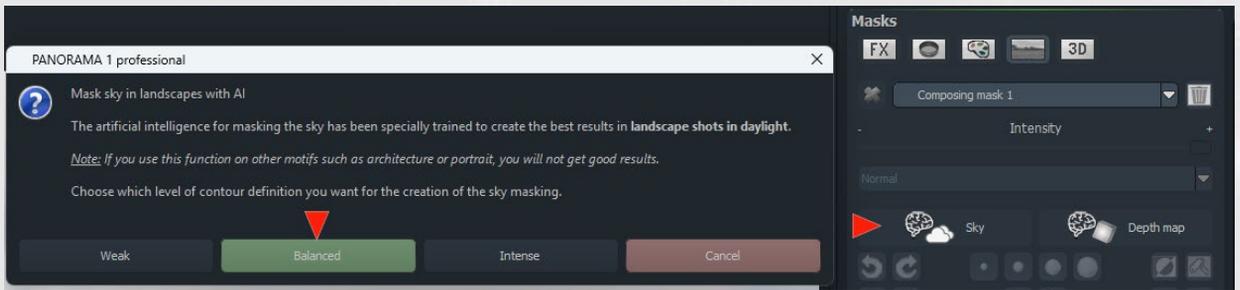
... the **Selective editing** window opens with all mask areas and editing options.

Note: This 'creative module', with its incredibly versatile selective image editing options in the individual mask areas, is described in detail in **the Selective Drawing Guide**.

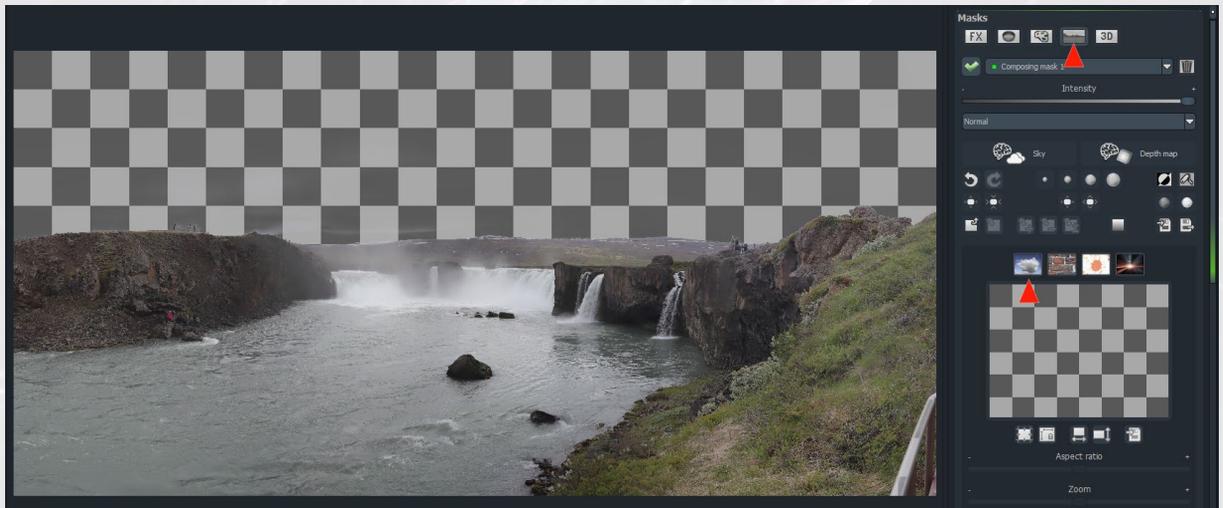
Therefore, the individual steps are only listed here in keywords.

Switch to the composing masks

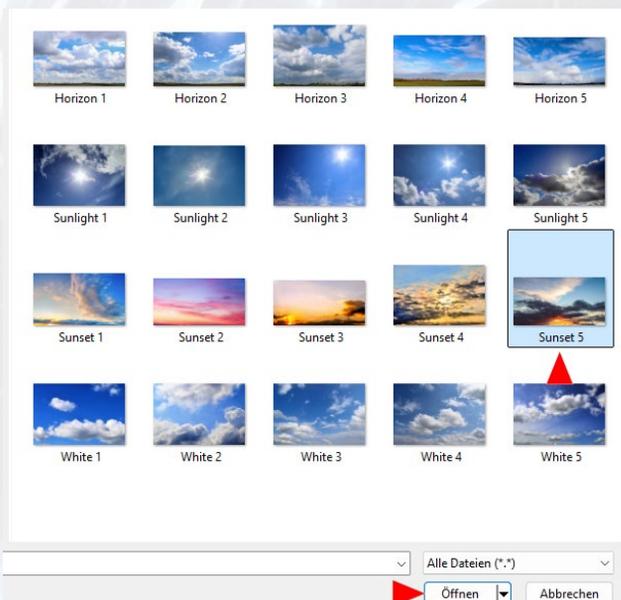
Clicking on the fourth button from the left activates the **composing masks area**.



Clicking on the button with the **sky symbol** opens an information window with a note that the AI has been specially trained to mask the sky for landscape shots. By selecting a contour sharpness, in the example **Balanced**, ...

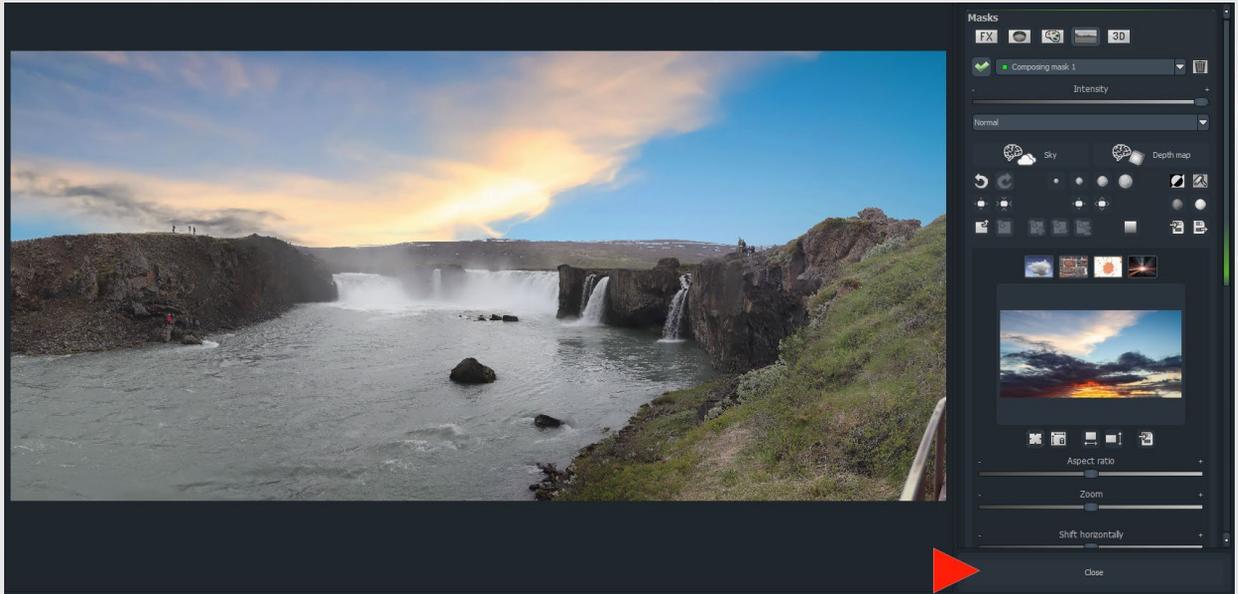


... the sky is masked in a flash. With the next click in the **Sky and Sunset** collection ...



... select the desired sky, in the example **Sunset 5**, and confirm your selection with **Open**.

Result image with replaced sky



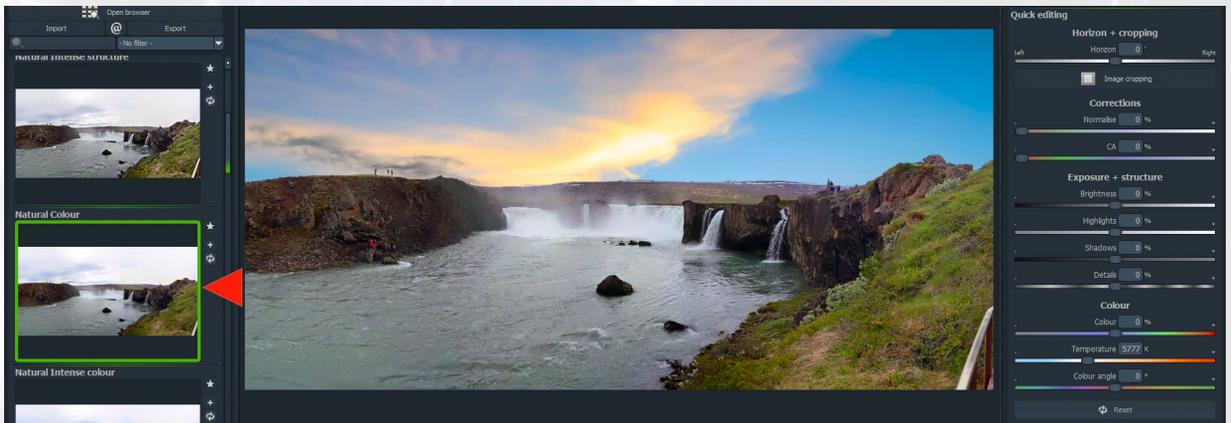
The mask will immediately be replaced by the selected sky. If you want to try a different sky, click on the sky icon again and select another sky. The parameters in the lower right-hand corner can be used to adjust the image mood to suit your own preferences.

Transition to post-processing

Click **Close** to return to post-processing.

 Resulting image as original image

Note: If you want to change the image mood of the 'new' sky when changing presets, you have to take a small 'detour', which is also described in detail in the **Selective Drawing guide**:
Switch to **expert mode**, click on the button **Result image to original image** to create a 'new' original that includes the sky.



Now you can select all presets as usual, such as **Natural Colour** in the example.