

## **DENOISE projects 2 elements**

User manual



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### **System requirements:**

**Windows** 10/8/7/Vista/XP, 32/64 Bit, Processor Core Duo, 2GB RAM, 2 GB HDD, display resolution 1.280 x 1.024 pixels, graphic board: DirectX-8-compatible, 128 MB, 32 bit colour depth

**Mac OS X** from 10.7, 64 bit, Processor Intel/G5, 2 GB RAM, 2 GB HDD, display resolution 1.280 x 1.024 pixel

You will need connection to the internet to use this software.

### **Adobe Reader**

The display of a PDF document, as well as that of the manual, the hotline and the copyright information will require an additional program. On the CD, in the folder "Adobe" you will find the Adobe reader that has the ability to display PDF documents. Double-click on the file "AdbeRdr1000\_de\_DE.exe" to install Adobe Reader.

### Installation on Windows

The installation start screen will normally be displayed automatically. If the auto start function of your CD/ DVD drive is deactivated, open the start screen manually by going to My Computer, double clicking on the CD/DVD drive symbol and then on “**Starter.exe**” or “**Starter**”.

Click on **DENOISE projects 2 elements** *install*, which you will find on the CD start screen, before following the instructions of the installation assistant.

During the installation you will be asked, if you want to install the Plug-in for Adobe Photoshop as well. If you do install it, you will be able to use **DENOISE projects 2 elements** as a plug-in.

Alternatively you can copy the Plug-In manually into the Plug-In folder in Adobe Photoshop. To achieve this, choose in addition the entry *Display Adobe Photoshop Plug-ins* in the CD start menu.

### Installation on Mac OS X

Load your CD into your CD/DVD drive and open the installation menu through the desktop.

Drag the **DENOISE projects 2 elements** file into the program link. To use the Adobe Photoshop plug-ins, open the *Adobe Photoshop plug-ins* folder and copy the appropriate plug-ins into your Photoshop plug-ins folder. You can now use **DENOISE projects 2 elements** to edit your photos.

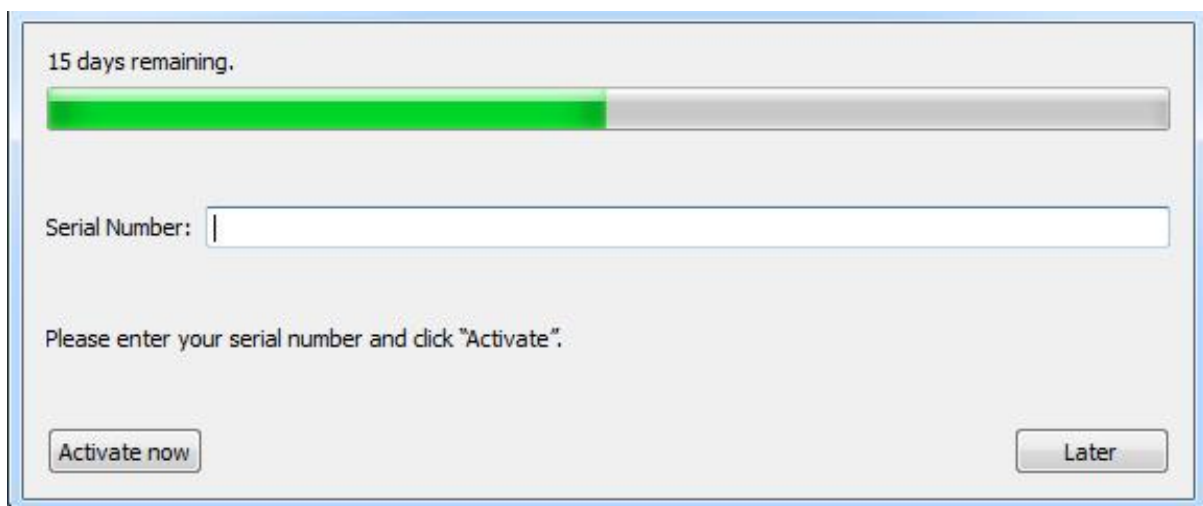
## Details for registration

Upon opening **DENOISE projects 2 elements** for the first time, you will be requested to register the program. Proceed according to the following:

1. Install **DENOISE projects 2 elements** as described.
2. Input the serial number. For the box version, this can be found in the accompanying booklet. If you have the downloadable version, the serial number will have been sent to you by email directly after the purchase.
3. Finally, click on the “**Activate now**” button. The software has now been successfully activated.

**Note: DENOISE projects 2 elements can be installed on two computers with the same serial number.**

A second serial number is not necessary. For an additional installation on a different computer, enter the same serial number again and then click on “**Activate now**”.



15 days remaining.

Serial Number:

Please enter your serial number and click "Activate".

The image shows a software activation window. At the top, it says "15 days remaining." with a green progress bar that is approximately one-third full. Below this is a text input field labeled "Serial Number:". Underneath the input field is the instruction "Please enter your serial number and click 'Activate'.". At the bottom of the window, there are two buttons: "Activate now" on the left and "Later" on the right.

## 1. Image Noise - What is it?

Image noise occurs in digital image production in many different ways. One example is the so-called low noise, a sensor-dependent noise caused by CDD and CMOS sensors. An additional multiplier is the reading strength in digital cameras, which produces read noise.

Hot pixels can appear with increased age of the camera or through manufacturing errors to the image sensor. Hot pixels are individual pixel sensors that were incorrectly manufactured or have a significantly higher light sensitivity compared to the pixels around them.

It is generally the case that the higher the ISO Number (the camera's exposure setting), the more visible the noise will be.

What types of image noise can be reduced or removed with **DENOISE projects 2 elements**?

- Chroma Noise (colour noise) (Filter: Denoising - colour)
- Luminance Noise (bright noise) (Filter: Denoising - HD)
- Hot pixels (Filter: Hotpixel noise suppression)
- Salt & Pepper (individual defective pixels) (Filter: Hotpixel noise suppression)
- Gaps (Filter: Denoising - fill gaps)
- Banding (Filter: Denoise - banding)
- Colour Clouds (Filter: Denoising - colour clouds)

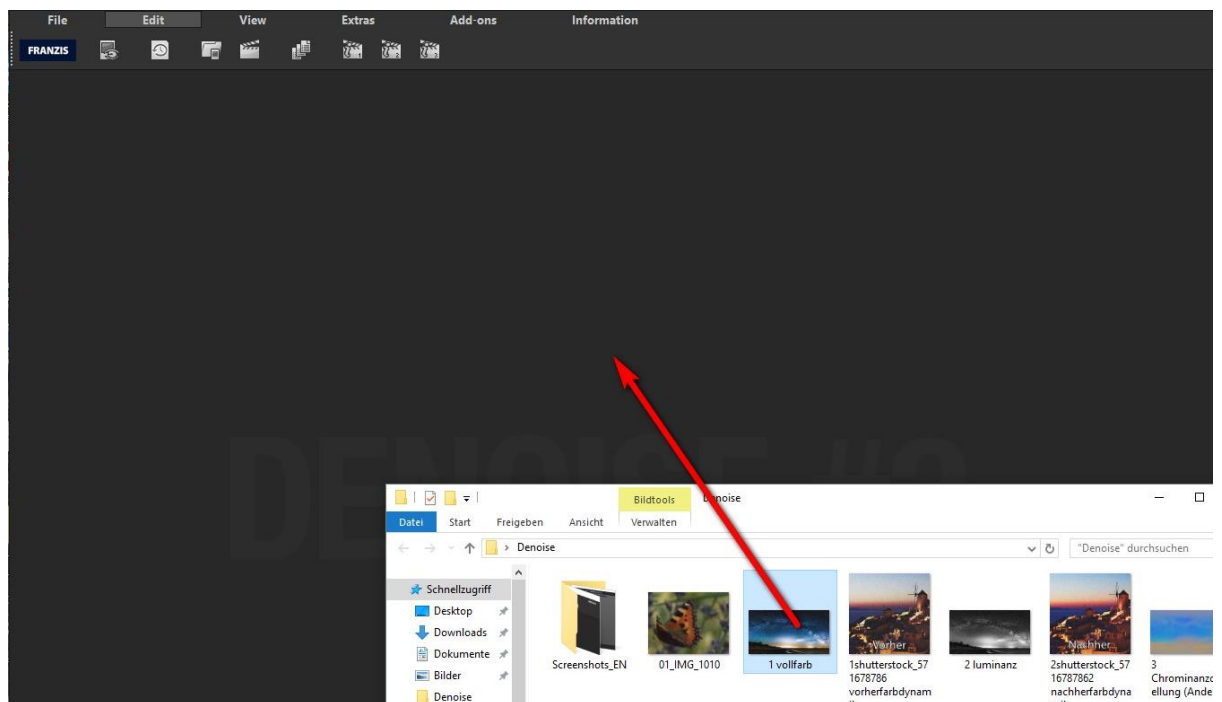
In most cases, the different types of image noise do not appear individually, but rather in a mixed form. This is why it is important to remove noise in the correct order (as shown above) to obtain optimal results.

## 2. Quick start with DENOISE projects 2 elements – the first image noise free photo in only three steps

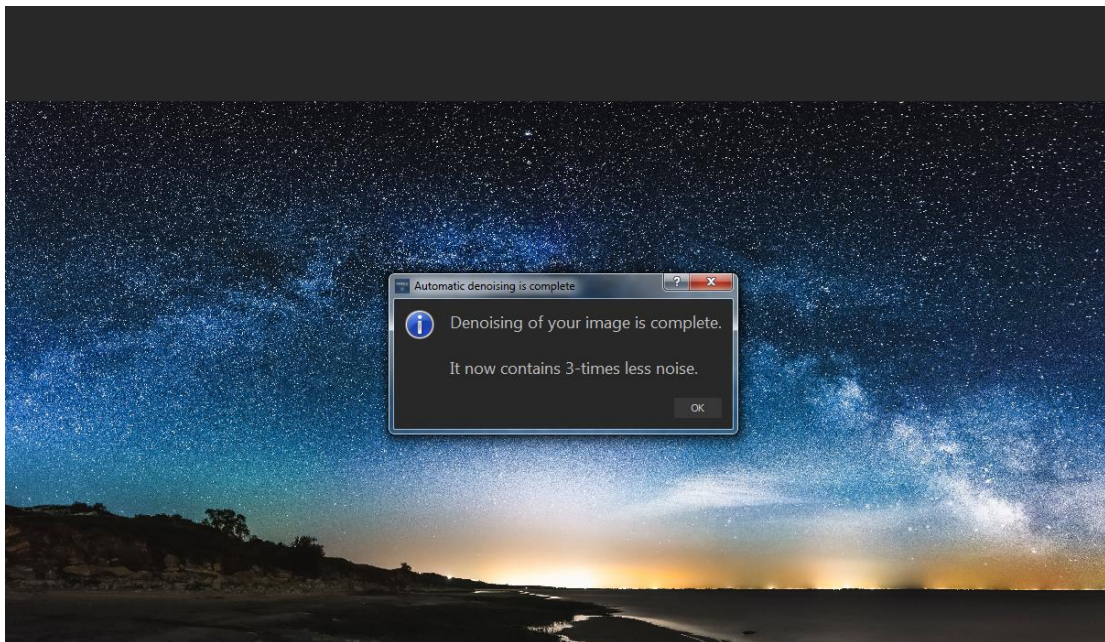
With **DENOISE projects 2 elements** you have a very powerful editing tool for your images. The only limit you have, is your own imagination. Those who use the software for professional purposes will especially value the individual setting options. But for the average user it will suffice to remove the image noise from a snapshot completely automatically.

This is how the quick start with **DENOISE** works:

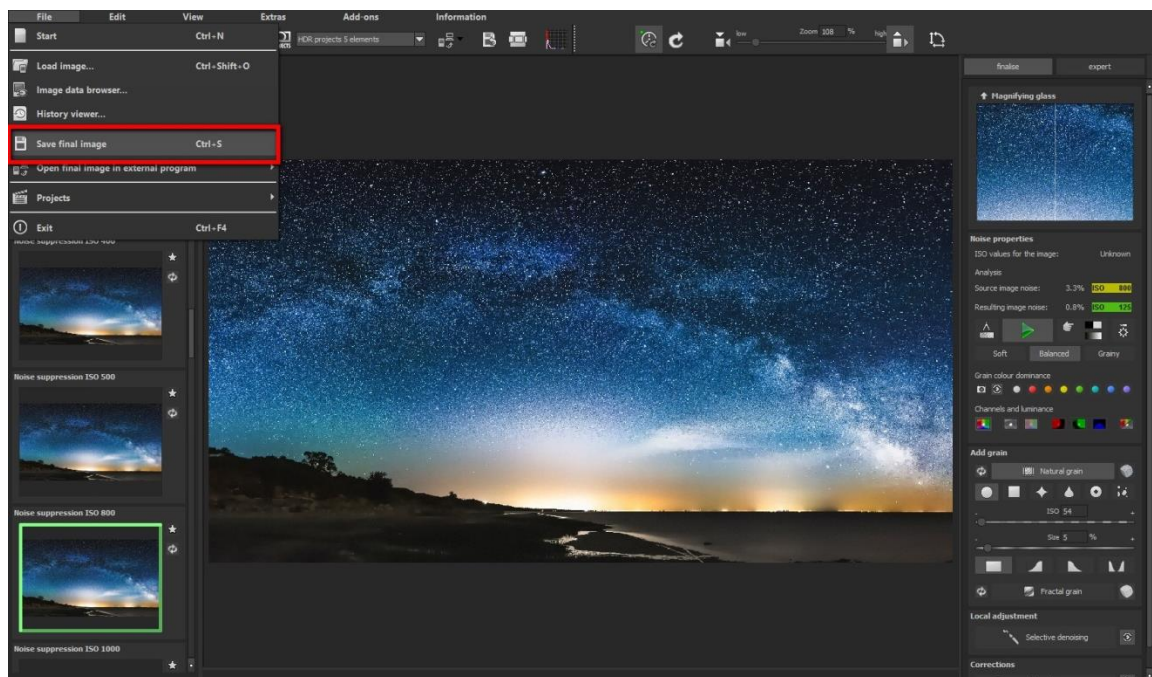
**Step 1:** Open your photo in **DENOISE projects 2 elements**.



**Step 2:** Wait a few seconds for the image is being automatically denoised by the software. When the process has been completed, you will receive a confirmation message.



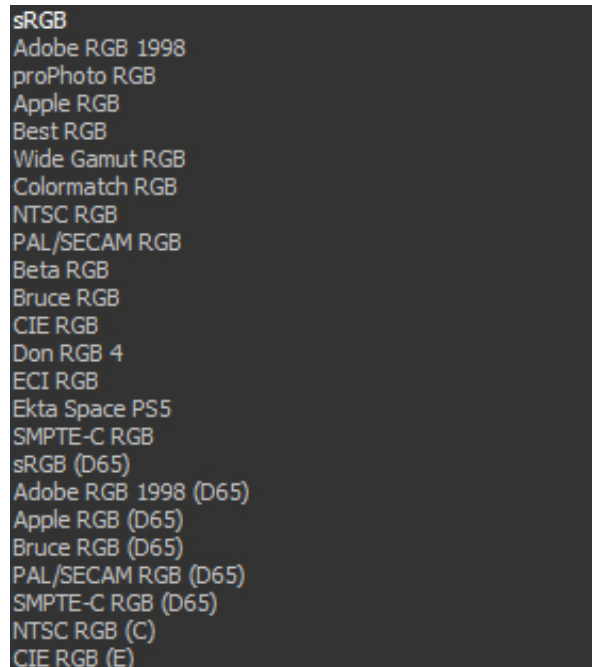
**Step 3:** Save the finished result in a chosen folder.





### 3. What's new?

- ✓ The interface was visually completely revised
- ✓ Up to **40% faster image denoising** through “smart noise prediction”
- ✓ Natural grain engine with automatic settings for the optimal denoise quality
- ✓ Denoising models **up to ISO 4 000 000**
- ✓ Two new pre-set categories “**night shot**” and “**astro**” with 19 new pre-sets
- ✓ 12 additional pre-sets in the category “**mobile**”
- ✓ Support for **8 additional colour spaces** (D65)



sRGB  
Adobe RGB 1998  
proPhoto RGB  
Apple RGB  
Best RGB  
Wide Gamut RGB  
Colormatch RGB  
NTSC RGB  
PAL/SECAM RGB  
Beta RGB  
Bruce RGB  
CIE RGB  
Don RGB 4  
ECI RGB  
Ekta Space PS5  
SMPTE-C RGB  
sRGB (D65)  
Adobe RGB 1998 (D65)  
Apple RGB (D65)  
Bruce RGB (D65)  
PAL/SECAM RGB (D65)  
SMPTE-C RGB (D65)  
NTSC RGB (C)  
CIE RGB (E)

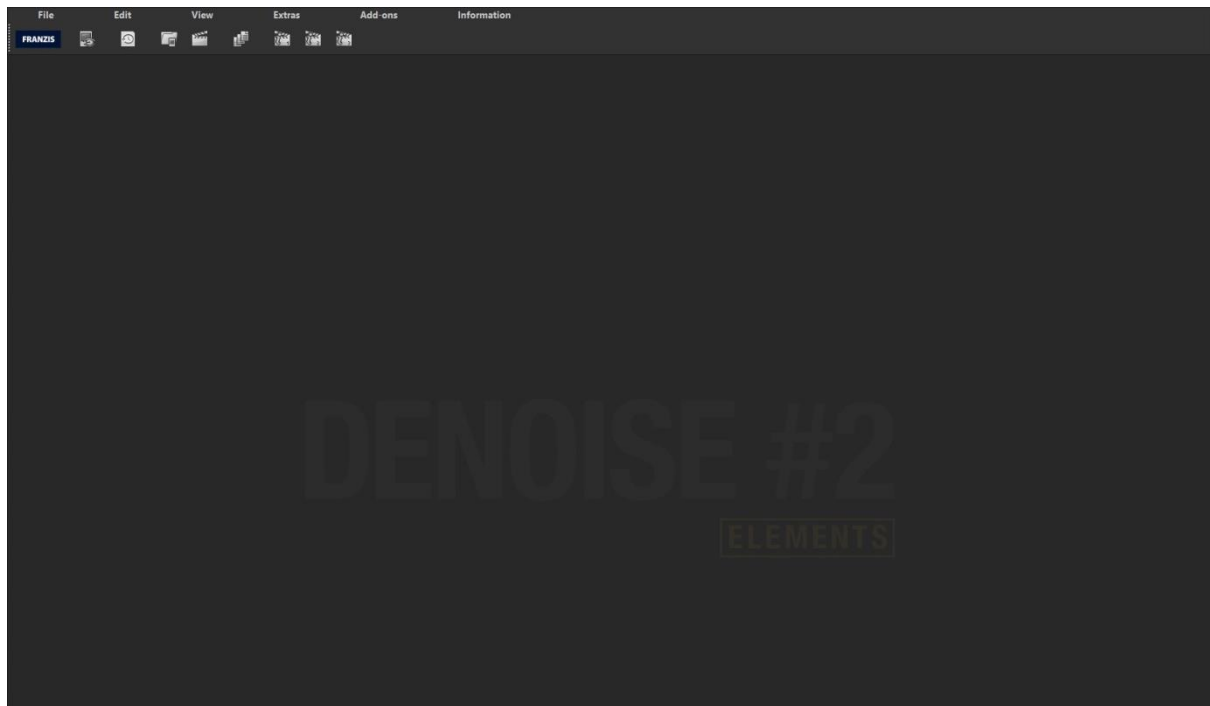
#### Helpful functions:

- ✓ Browser history
- ✓ The magnifying glass has a second mode “**compare**”
- ✓ Image cropping with **71 format models**
- ✓ New options in saving and automatic formats
- ✓ Integrated shortcut list
- ✓ Integrated list of the supporting camera RAW formats
- ✓ Change the font size in menus and titles

### **Improving, optimising and bugfixes:**

- ✓ In the options the automatic denoising optimiser can be turned on or off
- ✓ The active graphic card can only be turned off in settings
- ✓ A new savings format **portable pixmap 16-bit** (\*.ppm) is now available
- ✓ Modulator elements delete the focus (after putting in the value) so that short cuts are immediately accessible.
- ✓ When turning off the security query you will receive a safety notification
- ✓ The **starting of the program** was accelerated considerably
- ✓ The whole of **colour space conversion** was revised
- ✓ Complete revision of the effect **colour temperature**
- ✓ The **accuracy of all smoothing functions** was highly increased

## 4. DENOISE projects 2 elements – start screen



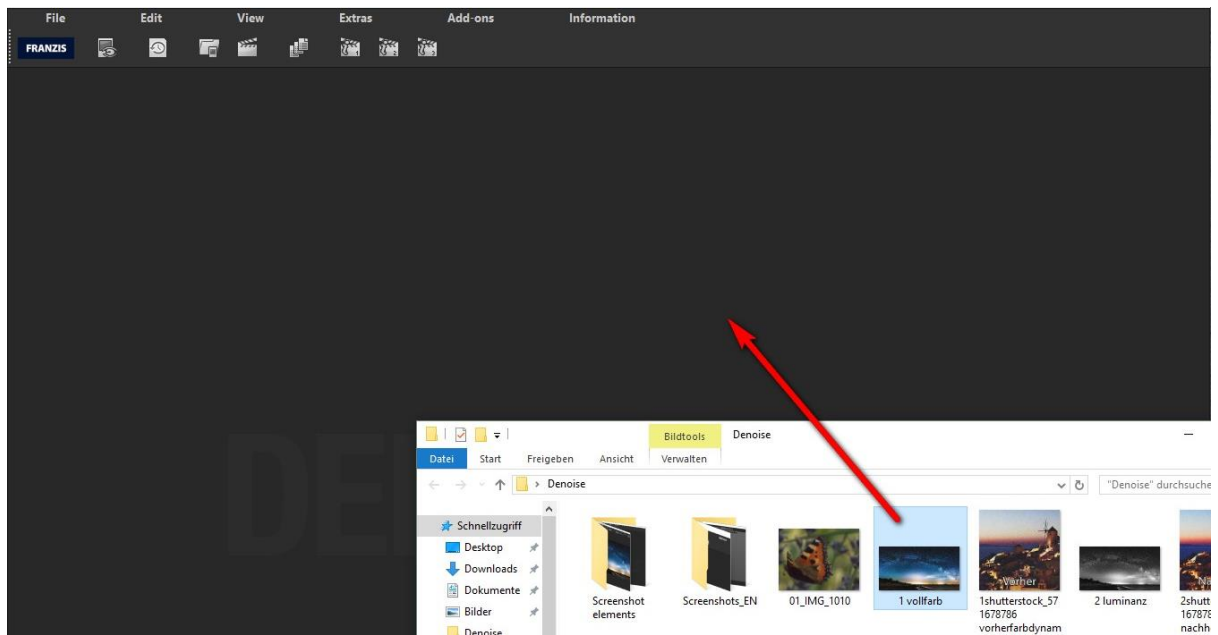
The start screen of **DENOISE project 2 elements** is simply built.

On the top border of the screen you will find the main menu as well as the toolbar. The toolbar includes the following functions (from left to right):

- o Image data browser
- o History viewer
- o Load image
- o Open project
- o Example project 1
- o Example project 2
- o Example project 3

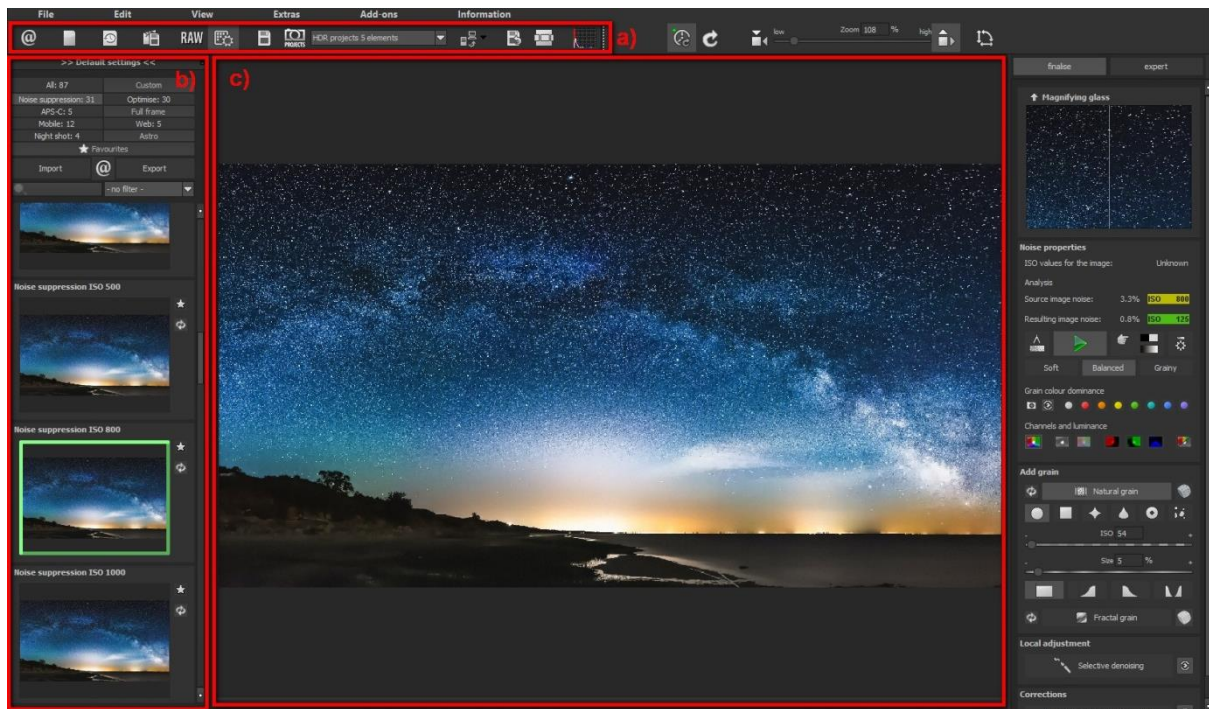


Alternatively, image data can simply be dragged and dropped onto the screen. The images will then automatically be uploaded.



## 5. The work area

As soon as an image file is loaded into the program, a work area will open up.



The work area is divided into four main areas:

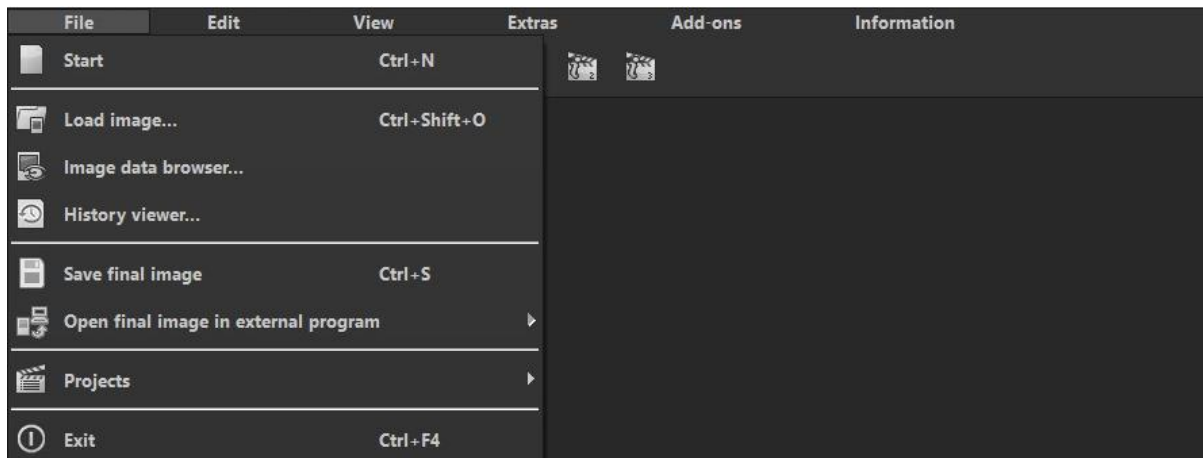
- a) Menu and toolbar (top)
- b) Default settings (left)
- c) Image area (middle)

The individual work areas can be extracted from the interface and inserted into another place or onto a *second screen*.

To set the work area back into its original condition select **View** in the menu and then **restore**.

## 6. Menu bar

### 6.1. File



#### File → Start



When you are finished with the editing of your image or if you want to close your current image, you can get back to the **home page** with one simple click (or **Ctrl + N**).

#### File → Load image...



Click on **Load image** (or **Ctrl + Shift + O**) to find and open the image that you want to work on.

#### File → Image data browser...



If you are not so sure where the image, that you want to work on, is or if you need to search for your image, just click on **image data browser...**

#### File → Save final image



If you are happy with your finished photo and you want to save the image, click on **save final image** (or **Ctrl + S**).....

#### File → Open final image in external program



If you want to edit your current photo on another editing program, you don't need to leave **DENOISE projects 2 elements**. Simply click on **open final image in external program**.

#### File → Projects...



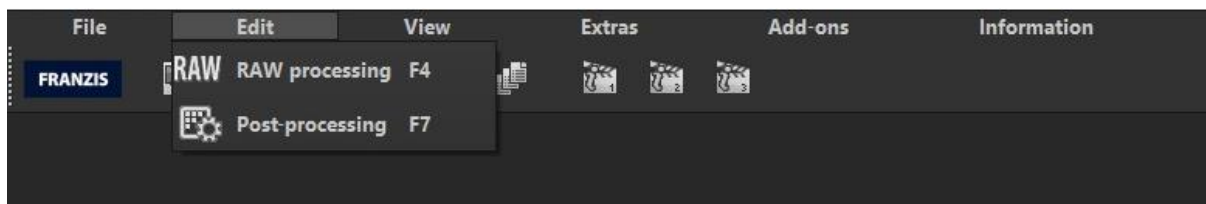
If you have already started working with **DENOISE projects 2 elements** and you want to continue working on a particular project, open the project by clicking on **“File/Projects.../Open project”**.

#### File → Exit



Click on **Exit** (or **Ctrl + F4**) to close **DENOISE projects 2 elements**.

## 6.2 Edit

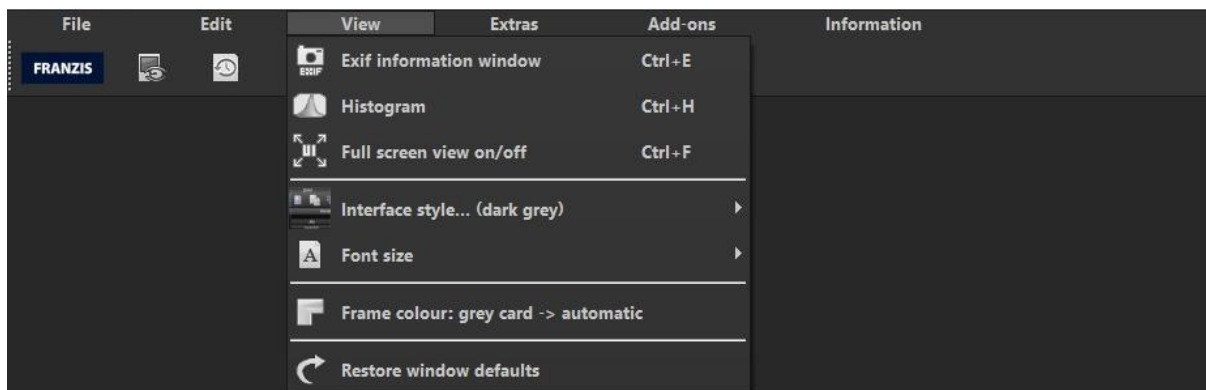


Edit → Post-processing



As soon as you have edited or denoised an image, you will find yourself in the post-processing mode.

## 6.3 View



View → Histogram



The Histogram shows you in a compact format the **brightness control information** of a photo. This way you will be able to quickly recognise if your photo is under- or overexposed.

View → Full screen view on/off



If you feel like you are being distracted by the menu bar, you can simply switch - with one click - to full screen via **full screen view on/off**.

View → Interface style... (dark grey)



By clicking on **Interface style...** you will be able to change the colour scheme of **DENOISE projects 2 elements**. The colour scheme that is in current usage will be displayed in brackets.

View → Font size



Changes the size of the font in every menu.

View → Frame colour: grey card → automatic



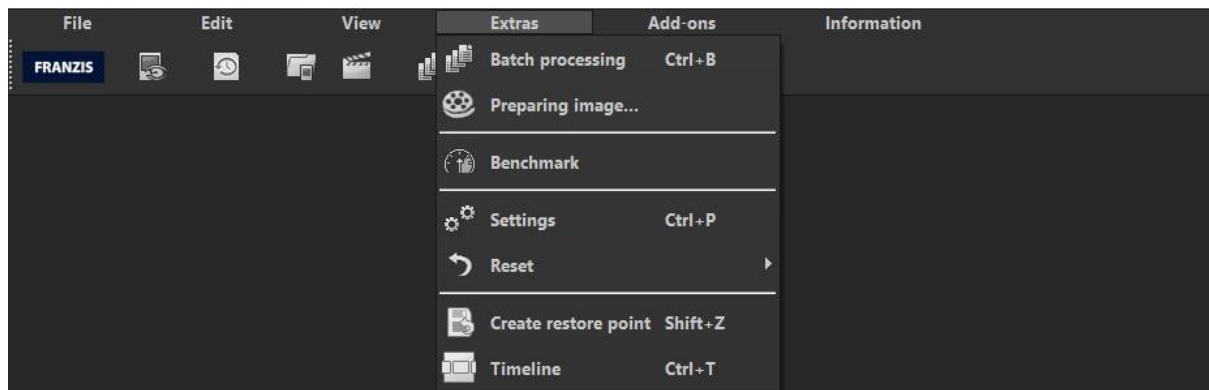
When you click on **Frame colour: grey card -> automatic**, the average colour of your image will be used as the frame colour for your image.

View → Restore window defaults

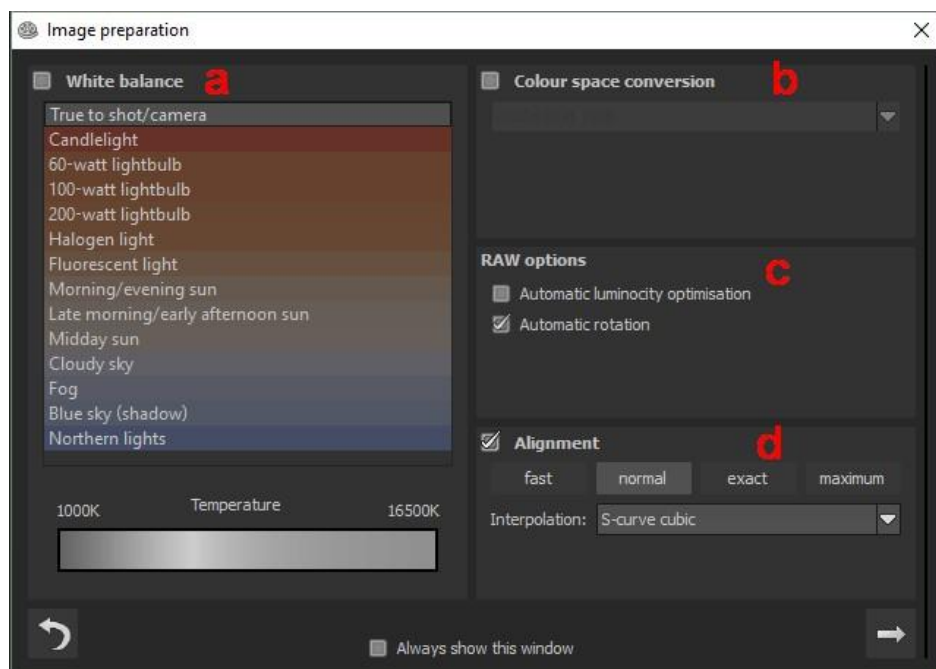


It restores the current window back to its original size.

## 6.4 Extras



Extras → Preparing image...



- a) **White balance:** With white balance you will be able to correct colour errors that are created through warm room lighting for example.
- b) **Colour space conversion:** Here, advanced users can determine the colour space of an image. Since most monitors can only depict sRGB colour spaces, one should only change the colour space, when it is absolutely necessary.
- c) **RAW options:**  
This area controls the usage of RAW image files.
- d) **Alignment:** Here you can activate/ deactivate the automatic alignment of your images.

Extras → Benchmark





If you want to know how fast your PC photos are denoised, you should use **Benchmark**. The program will render five different images in real-time and at the end you will receive a rating out of five stars.

Extras → Settings (Ctrl + P)



Here you will find many different setting options of **DENOISE projects 2 elements**, which you can then adapt for your own ideas.

Extras → Create restore point (Shift + Z)



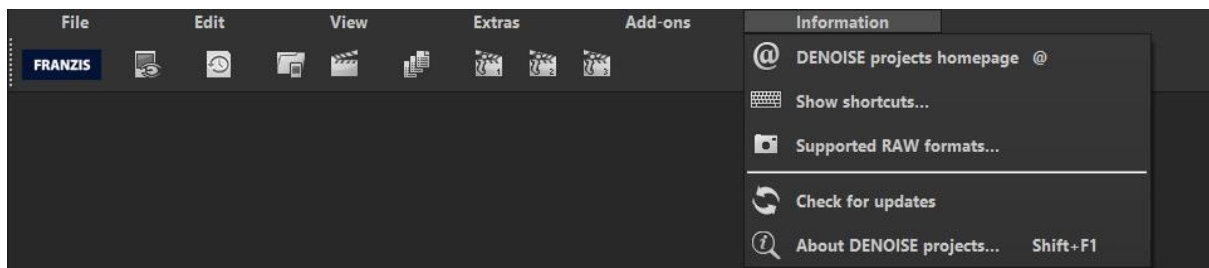
If you want to secure the current state of your image without saving it and continue to directly work on it, you can use **Create restore point** or simply press **(Shift+Z)**. Using this setting allows you to switch back to the secured state of your image.

Extras → Timeline (Ctrl + T)



Click on **Timeline** or press **(Ctrl+T)** to see all the saved restore points.

## 6.5 Information



Information → DENOISE projects homepage



This way you can reach the Homepage of **DENOISE projects 2 elements**.

Information → Show shortcuts...



Here you will find all the shortcuts in **DENOISE projects 2 elements** clearly listed.

Information → Supported RAW-Formats...



A list of all the camera types, whose RAW files can be opened in **DENOISE projects 2 elements**.

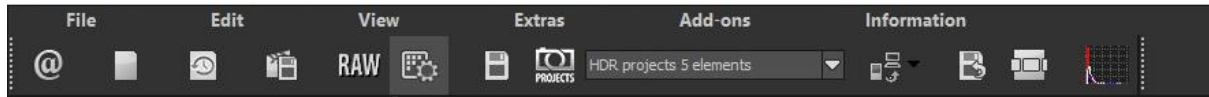
Information → About DENOISE projects... (Shift + F1)













Information about the version, 3<sup>rd</sup> party software and credits of **DENOISE projects 2 elements**.

## 7. The tool bar

The tool bar can be separated into two areas. The left side focuses on the control functions of the program, while the right concentrates on the controls of the image view.



The functions (from left to right) of the menu bar are:

-  Start
-  History viewer
-  Save project
-  Post-processing
-  Save final image
-  Transfers the current image to the selected application of the “projects” – product family
-  Open final image in external program
-  Create restore point
-  Timeline
-  Histogram

Several of the main functions of **DENOISE projects 2 elements** will now be more closely examined.

### 7.1 Loading and saving files

To load images into the program simply drag and drop the chosen image into it. Another option would be to load the image by using the button in the tool bar (located on the start screen) or to load the image via file → Load image...

If you drag and drop a file onto the program an automatic image data browser will open, displaying the contents of the file with preview images.

With a double click on the preview in the image data browser the image file will be directly uploaded.

Image format:

In **DENOISE projects 2 elements** all of the current image formats can be used to load images into the program. This includes camera RAW images created by different producers. When RAW files are at your disposal you should always use them. For in those image formats there is a lot more information contained than for example in a jpeg file.

## 7.2 Projects

A project includes all the current information of your motive. The information you can save in **File → Save project**. This allows you to continue working on the image from this exact point at a later point.

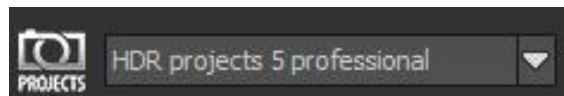
Furthermore Undo-points will be saved with the project as well, so that you can later have access to your History.

## 7.3 External programs

For the transfer of an image to an external program there are only two interfaces available.

The “projects” interface:

Here all of the programs of the projects product family are automatically registered. Images can be transferred directly by selecting the desired program from the list via the controls.



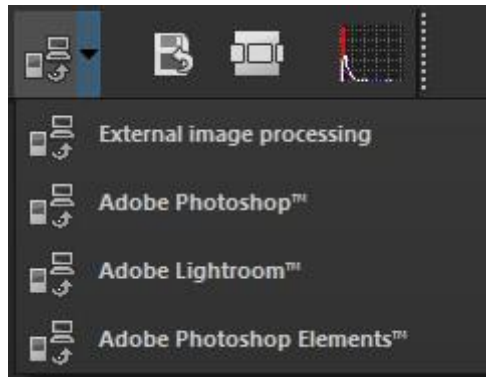
In the example the transferred material has been sent to HDR projects 5 professional.

### The general interface:

The general interface for external programs will be configured only once in the settings (Menu extras → settings).

Here the paths for four external editors (general, Photoshop CC, Lightroom, Photoshop Elements) can be configured.

In the tool bar you will be able to transfer to one of these four external editors:



Simply click on the arrow next to the transfer button and then click on one of the four programs to transfer the image.

## 7.4 Undo & Timeline

Undo points can be set manually at any point. These happen either over the controls **save** **Undo point** (found in the tool bar) or via the short **Shift + Z**.

Every undo point will be deposited and displayed in the Timeline (History). The Undo points include all of the settings of the current processing. This point you will be able to access at any point.



To create an Undo point again, click on the control above next to the image. The Undo point will then be renewed and if need be automatically added (provided that you have made changes).

This way you will be able to switch between your Undo points and retrieve previous settings.

Additionally all Undo points will be recorded, when the file is saved, so that when you open the project once more, at a later date, all Undo points will once more be at your disposal.

## 8. Presets

The presets can be found on the left hand side of the program. They are divided into 8 different categories.

The first two categories *Noise suppression* and *Optimise* contain presets for different ISO areas i.e. from ISO 50 to ISO 2000000.

The categories *Mobile* and *Web* contain specially adapted denoising/ optimisation presets.

*Night shot* and *Astro* are, as the name already suggests, specialised for images taken by night as well as astrophotography.

With the category *All* it is possible to use all of the available presets at the same time. The category *Custom* shows only self-made pre-sets.

### 8.1 Favourite systems

Favourite systems allows you to put your favourite presets in one folder. Simply click on the star next to the preview image to select the preset.

As soon as you have one or several favourites, the category favourite is activated. With a click on the favourite category you will immediately receive a display of your favourites.

### 8.2 Import & Export

The area import and export allows you to transfer presets. The preset data will be saved in an .ini file.

Over the export control you will be able to secure the currently chosen presets. With the import control you will be able to import presets that had previously been exported.

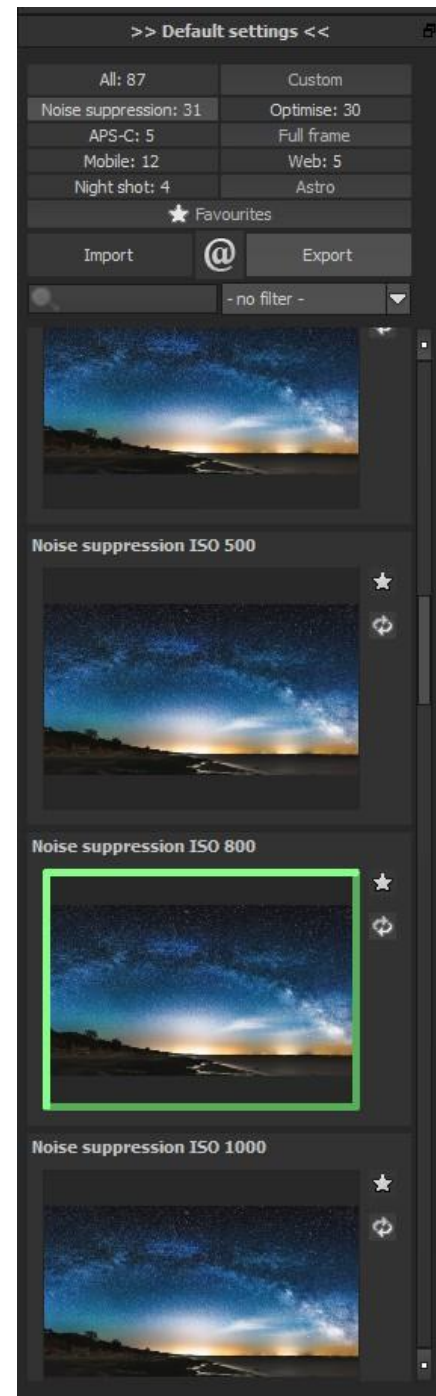
This way you can secure your work as well as exchange the presets with other users.

### 8.3 The search area

The search area helps you to find desired presets quicker.

The search entry is located directly underneath the import control. There you can type in any given text. All presets will be searched via the name and then compared to the entered text, before being displayed in accordance to its relevance.

If we are looking for example for a preset with a soft look, just type in *soft* in the search entry. Below you will find a list of pre-written search words.

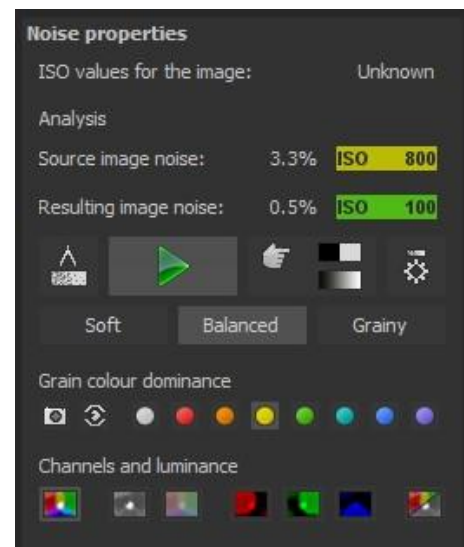



## 9. Denoising area (noise properties)

The denoising area, on the right hand side of the program, is the core of what makes **DENOISE projects 2 elements**.

Here you will receive information to the noise behaviour on the current image you are working on, will be able to activate different methods and procedures, let colour channels be displayed etc.

These areas will be introduced in the following sections in greater detail. Additionally this function block gives the opportunity to integrate corrector images like dark frames and flat frames into the current project. Further information you will find in the section correction images.



If you are happy with the current state of denoising and wish to apply this to your image again, you have the option to simply press on the green play button  to denoise the current image once more.

### 9.1 ISO display

In the first section of the denoising area you will find three ISO displays.

The top display gives you the ISO level of the source image. In the example it is “ISO value of image: ISO 800”.

Directly next to it there is the display of the mathematical analysis of the image noise.

#### Noise of the source image:

Here the noise will be measured via a special procedure, before ranked to an average ISO level. In the example it is “source image noise: 2.3% ISO 400”.

Mathematically the image has a noise percentage of 2.3%.

**Tip:** *Don't let yourself be irritated, when the ISO number from the noise analysis doesn't correspond with the ISO number from the image.*

The sensors of the cameras react differently to the pre-set ISO level. This way the noise behaviour D810 differentiates from the EOS-7D Mark II.

The image denoising must be based on the analytic ISO value that will be displayed to you there.

#### Resulting image noise:

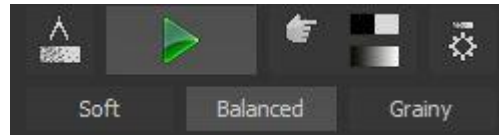
Directly underneath the noise of the source image you will find the analytical noise value of the result image. In this example it is “Image result noise 0.5% ISO 80”.

Through denoising it was therefore possible to lower the analytic ISO number from ISO 400 to ISO 80.

**Tip:** Pay attention to the fact that one shouldn't denoise the images too strongly, for otherwise the natural look will get lost. The optimum result image noise is between 0.5 – 1%.

## 9.2 Measuring range of image noise

The analytic purpose of image noise is based on the procedure that looks through the entire image for uniform areas instead of image details before categorising them. In this “pure” noise areas the image noise will be measured.



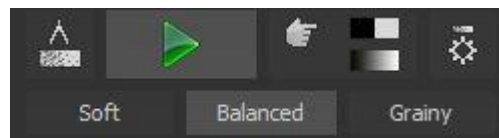
Since the measurement of the image noise over the entire image happens entirely automatically, there is no need to manually try and measure potential noise areas. To display the measured areas, simply click on the control “display measured noise areas”.

**Tip:** During the display of the measured areas it will not be possible to use automatic denoising. Simply deactivate the display to be able to have usage of it again.

## 9.3 Automatic denoising/ optimisation

### Automatic Denoising

Automatic denosing analyses the current image and searches through the denoising pre-sets for the ideal pre-set.



For the automatic application there are three different softness grades available. After every uploaded image the automatic setting “**balanced**” will be applied. When you desire an image that is softer or grainier, you are able to change the settings of the automatic application for this current motive.

It is advisable to look at the three different results, since denoising has a different effect on each motive. Some images seem better after they have been denoised softly, while others seem better when there is a little bit of granular left over. The choice depends entirely on your own taste.

### Automatic image optimisation:

As soon as you have denoised an image (this happens automatically when you upload an image), you can select the control *automatic denoising/optimisation*.



A click on the control ensures that a fitting optimisation pre-set from the pre-set category *Denoise* will be chosen.

#### Manually denoising:

Directly on the right of the control for automatic denoising/optimisation you will find the control for manual denoising. If you click on this mode then the automatic denoising will be deactivated for a short time. Following this, you will receive a ready-made setting with all of the important denoising and focusing effects. This setting you can directly work on in the expert mode.











### 9.4 Denoising colour space

The denoising colour space is a speciality of **DENOISE projects 2 elements**.

With colour space you can improve the denoising quality in chosen colour tones, with only a slight cost to the other colours.



In total there are ten different colour spaces available (from left to right):

Determine the used colour dominance from the source image	
Colour dominance corresponds to the brightness sensitivity of the human eye	
Neutral grey colour dominance	
Red dominant (e.g. rose blossoms)	
Orange dominant	
Yellow dominant	
Green dominant (e.g. landscapes)	
Turquoise dominant (e.g. the sky)	
Blue dominant (e.g. water)	
Purple dominant	



Let us take the example of a red rose:

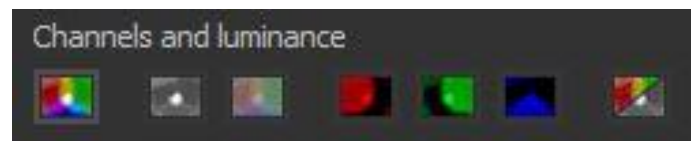


On the left hand side we see the original image with ISO 25600, in the middle the automatic denoising and the chosen denoising colour space “**neutral grey**” and on the right the image with the chosen colour space “**dominant red**”. One can clearly see how the details improve the blossom in the last image on the right.

**Tip:** Choose the denoising colour space that suits your motive best.

## 9.5 Channel display

The area of the channel display serves as an optical analysis of your image.



**Tip:** Pay attention that the real-time calculation mode in the top tool bar is active, so that the display can remain updated.

Here you can select from seven display modes.

- a) Displays the whole image, meaning all colour channels



This display shows the resulting denoised image with all three colour channels: red, green and blue.



- b) Displays the brightness (luminance)



The brightness of the image (depending on the selected denoising colour space)





c) Chrominance display (Displays the colour map)



In the chrominance display one can see very quickly, if there is colour noise in your motive or not. If the colours are “agitated” you should use the effect *denoising-colour* with a stronger intensity.

d) Red channel



In the red channel the red parts of the image receive an increased brightness.





e) Green channel



In the green channel you see the green parts of the image receive an increased brightness.



f) Blue channel



In the blue channel you see the blue parts of the image receive an increased brightness.



g) Difference between the source and result image



The difference display shows the removed noised areas of the image.

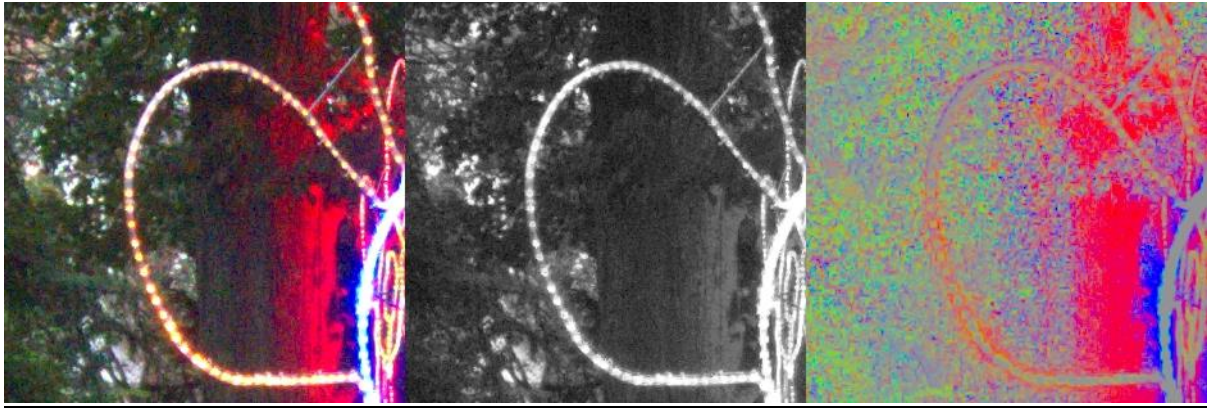
What counts here: The fewer details to be seen on the difference display, the better the denoising worked (for fewer image details were influenced by the denoising).

As soon as the difference display was activated, a control will appear with which the contrast of the difference can be increased. Pictures that have little noise the difference is hard to see. In this case simply increase the contrast of the display.

The contrasts of displays from the image illustrate the functions that have been used on it.



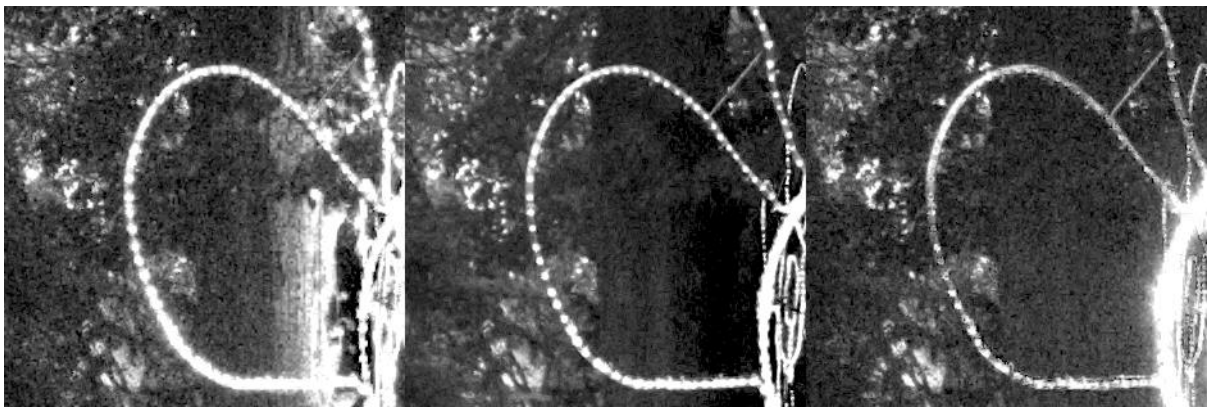
Source image – luminance display – chrominance display



The noise in the chrominance display can be clearly seen on the right hand side, this is the colour noise. The brightness noise in the luminance display in the middle is rather small.

**Tip:** *If you activate the measuring range you will get the colour noise shown in numbers as well. In this case the colour noise is 30.8%.*

Red channel – Green channel – Blue channel



The comparisons of the noise behaviour in the colour channels, offers important information for the selection of the correct denoising colour space.

For this area of the image one can see that there is a strong noise in the red part as well as in the blue. The green coloured area shows comparatively little noise.

When we merge this information, one should realise that a strong noise with red and blue, and then a purple colour space should be inserted.

**Tip:** *Which colour space do I choose in which combination when one has strong colour channel noise?*

Red & Green = Yellow denoising colour space  
Red & Blue = Purple denoising colour space  
Green & Blue = Turquoise denoising colour space

Original image – denoised image – Deviation image



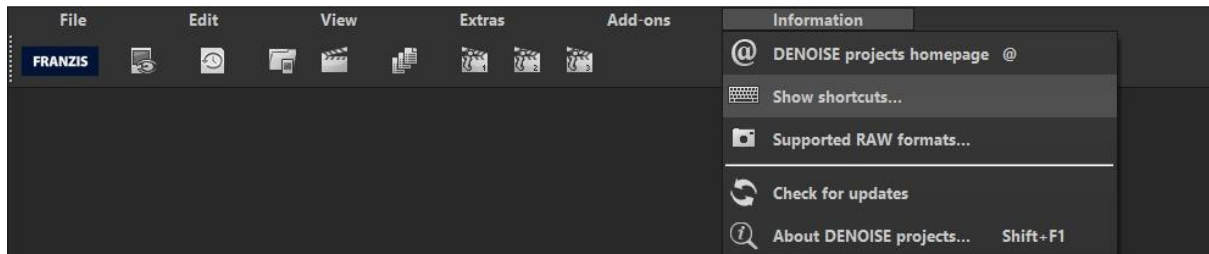
The display of the denoising derivation (here with a derivation contrast of 150%, so quite strong) shows that in the area of the light tubes, almost exclusively noise had been removed from the image.

This is verified by the fact that there are hardly any details to be seen in the derivation display.

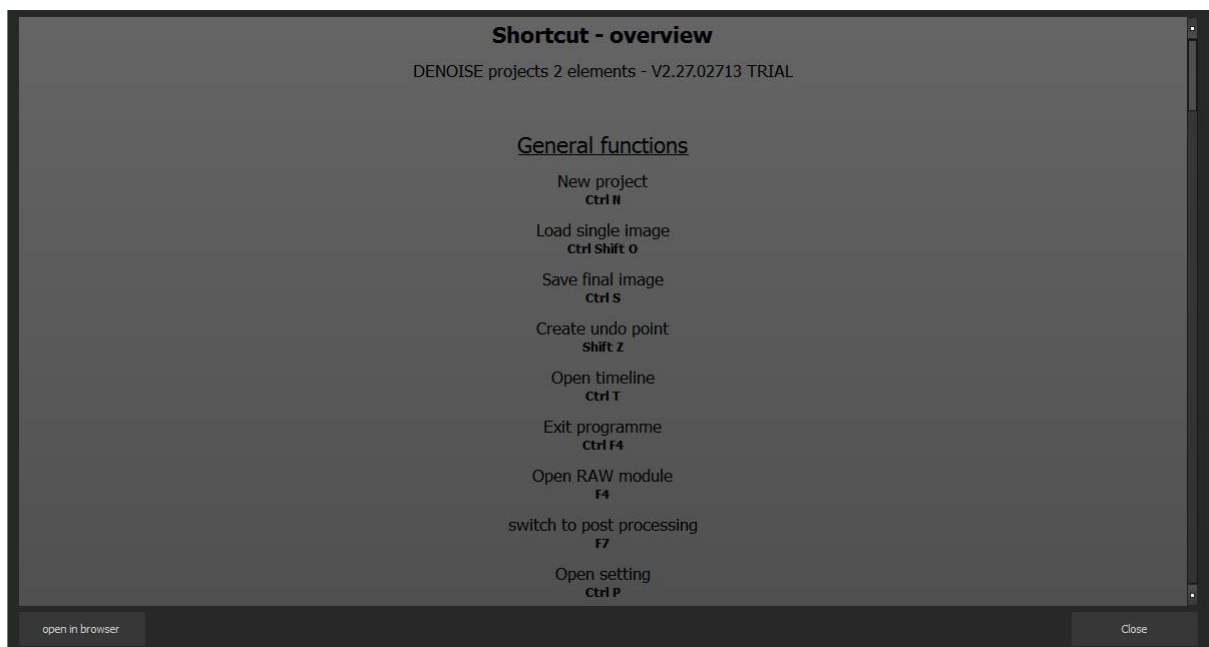
## 12. Keyboard short cuts

### Overview of the integrated short cuts

In the main menu information there is an overview of available short cuts.



Click on this menu item to open the overview.



In the overview of the short cuts you can now scroll through the different areas.

To have continuous access to the short cuts, you can make use of the function „**open in the browser**“ (in the bottom left-hand window). This way you can display the entire list in the standard browser or even print it out.



## General functions

Function	Windows	Mac OS
New project	STRG + N	CMD + N
Load single image	STRG + SHIFT + O	CMD + SHIFT + O
Save final image	STRG + S	CMD + S
Lock radar window	L	L
Open RAW-module	F4	F4
Display/ hide histogram	STRG + H	CMD + H
Display Exif information	STRG + E	CMD + E
Display full image	STRG + F	CMD + F
Display full image	STRG + F / ESC	CMD + F / ESC
Open homepage	@	@
Display help	F1	F1
Open about dialogue	SHIFT + F1	SHIFT + F1
Open batch processing	STRG + B	CMD + B
Open settings	STRG + P	CMD + P
Open timeline	STRG + T	CMD + T
Create undo-point	SHIFT + Z	SHIFT + Z
Image fittings	Double click	Double click
Display image 1:1	Another double click	Another double click
Quick comparison	Right click	Right click

## Selective processing

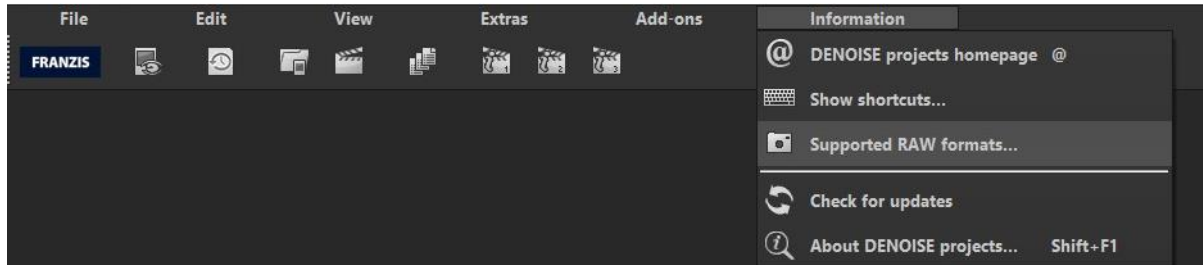
Function	Windows	Mac OS
Move selected areas	Cursor keys	Cursor keys
Select previous selective area	Page up	Page up
Select next selective area	Page down	Page down
Delete active selective area	Del.	Del.
Do not display mask	1	1
Display mask of the active selective area	2	2
Display mask of all selective areas	3	3

### Scratch & sensor error correctors

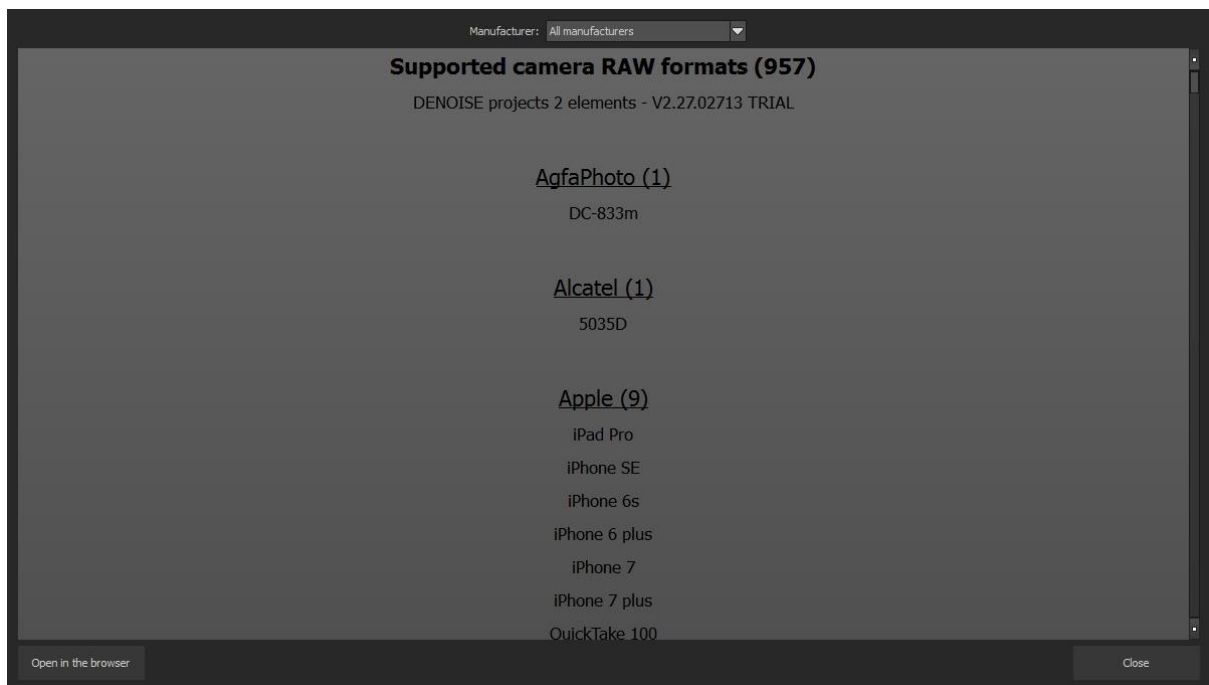
Function	Windows	Mac OS
Move active correction areas	Cursor keys	Cursor keys
Increase active correction area	+	+
Reduce active correction area	-	-
Select previous correction area	Page up	Page up
Select next correction area	Page down	Page down
Delete active correction area	Del	Del
Set new correction area	N	N
Activate all correction areas	C	C

### 13. Integrated list of supporting camera RAW formats

In the main menu, in the section: information, there is an integrated list of supporting camera RAW-formats sorted via the camera producer.



When you choose a menu item, a new camera RAW-format window will open.



In the top section of the window you will find a list, with which you can search for individual camera producers. This way you can find your camera much quicker.

If you want to have continuing access to the list of supporting RAW-formats in an external window, you can use the function “**open in the browser**” (bottom left window). This will display the entire list in your standard browser. It also gives you the option to print the list as well.

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