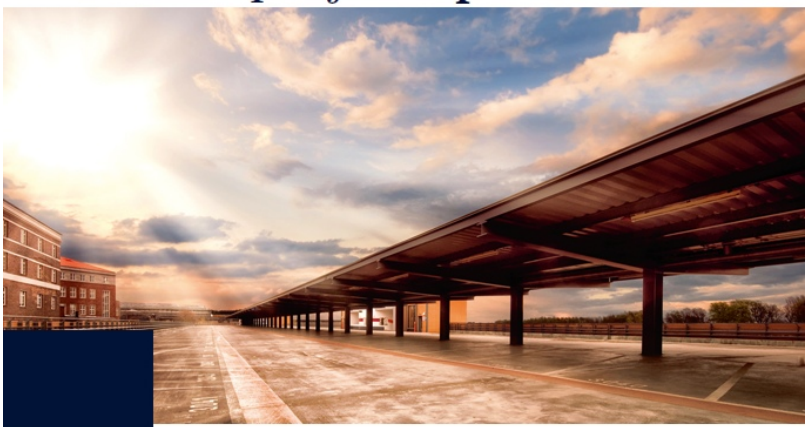
HDR projects platin



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Imprint

1. HDR projects – Quick Introduction

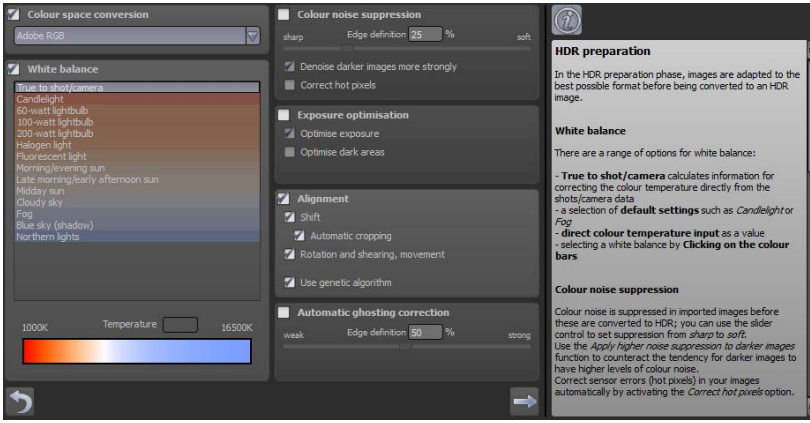
At first the following steps in this procedure are necessary to get a quick and successful result with HDR projects:

(1) Loading of images
(2) Settings of HDR parameters
(3) Tone-mapping and post-processing
(4) Save the final image

Please read more in chapter 2 concerning setting possibilities in HDR projects.
You will find useful tips and tricks to improve your image results.

(1) Loading of Images

Drag & Drop the data into the program window to load an image (HDR from one single image), an exposure bracketing series (multiple images), or a project data (.hdrproject). Alternatively you can use the toolbar as well as the menu. Once you have selected an image or an exposure bracketing series, you enter the dialogue of HDR preparation:



Here you can configure the next steps of HDR preparation:

- Selection of colour space
- Automatic or manual white balance
- Degree of first image denoising, optionally by using hot pixel correction
- Exposure optimisation through shadow optimisation
- Automatic image alignment
- Automatic ghosting correction

Please find details concerning all different processing steps in chapter 3 or within the information area of HDR projects.

The default settings are well prepared and set, so that a good result can be achieved in most of the cases.

Once you have confirmed “apply settings” with a click, the loading process and the image preparation with the selected settings starts. You enter the HDR area after loading and preparation process.

(2) Settings of HDR Parameters

The screen is separated in several working areas:

- Exposure bracketing series (1)
- Function toolbars (2)
- HDR preview (3)
- HDR Algorithms (4)
- Information concerning the activated area (5)

You can adjust individual images of an exposure bracketing series within the exposure area (left), e. g. the exclusion of an image made during HDR creation such as stronger or weaker weighting of an image.

The characteristic of synthetic images of an exposure bracketing series in HDR projects is explained in chapter 3.2.2 in detail.

The HDR algorithns area (right) allows you to adjust precisely image to motive via HDR creation. Additionally there are seven HDR algorithms available consisting of different parameters (see chapter 3.2.2).

After selecting the settings in the HDR area, select in the toolbar on top the palette icon to switch to tone-mapping and post-.processing.

(3) Tone-Mapping and Post-Processing

The tone-mapping and post-processing screen is split into the following areas similar to the HDR screen:

- presettings (1)
- function toolbars (2)
- tone-mapping preview (3)
- tone-mapping and post-processing effects (4)
- Information of the currently activated area (5)

Select on the left side in the presetting area (preset) the appropriate category corresponding to your motive (image „landscape“). The HDR projects presettings appear. You can select the presetting by using the left click (in the image: „strong colours“).

The individual effects of all selected presettings can be found in the expert mode on the right sided list of selected filters. It is possible to configure the list of effects according to your needs, to add, delete or resort the effects.

The parameter of an effect can be adjusted by selecting one of the selected effects. The parameters corresponding to an effect appear directly below the effect lists.

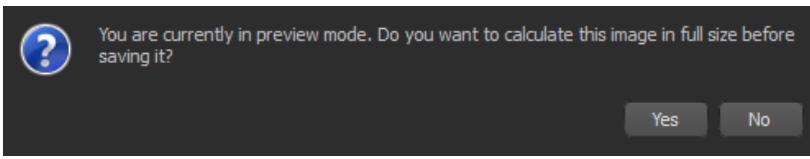
The specialty of the button to combine presettings (above on the left side) is explained in chapter 4.1.2.

(4) Save Final Image

The final image is saved by clicking on the disk symbol in the toolbar above.

Select the data storage path, the required format (.tif, .tiff, .jpg, .exr, .hdr), as well as the name.

After passing these steps without reaching the preview mode (chapter 2.4.2), the following question will appear:



Please confirm the question with „yes“ to calculate and save your image with all settings in full resolution:

Congratulations!
You have just created your first impressive HDR image with HDR projects platin!

2. Program & Interface

2.1 Technical Information

HDR projects is available in three versions: Mac OS – 64 Bit, Windows – 32 Bit, Windows – 64 Bit.

Generally there are no limits concerning the loadable image sizes, only the Windows 32 Bit version limits the image size to 22 mega pixels per image of an exposure bracketing series due to the operation system. An exposure bracketing series can consist of up to 18 single images.

All known camera RAW formats are supported as well as every common image format:

Camera RAW formats	**Image formats**
Canon RAW (.crw/.cr2)	.bmp
Fuji RAW (.raw)	.dds
Hasselblad (.fff/.3fr)	.exr
Leica RAW (.dng)	.gif
Kodak RAW (.kdc/.dcr)	.hdr
Minolta RAW (.mrw)	.ico
Nikon RAW (.nef/.nrw/.nrf)	.iff/.lbm
Panasonic RAW (.rw2/.raw/.rwl)	.jng
Pentax RAW (.pef)	.jpeg/.jfif
Sigma RAW (.x3f)	.jpg2000
Sony RAW (.sr2/.srf/.arw)	Koala
	Kodak PhotoCD .pcd
	.pcx
	.pict/.pct
	.png
	.raw (Sun)
	.sgi
	.targa/tga, tif/.tiff

All calculation areas support multithreading with up to 32 core processors. Additionally HDR projects uses the full capacity of your graphic card and thus results in an effective creating tool of HDR images.

2.2 Interface

The interface of HDR projects follows modern criteria of ergonomic user guidance and is equipped with extensive tips for tools.

Please click on the corresponding button with a left click to run a function. The program has several menus available at different places, which can be opened with a right click.

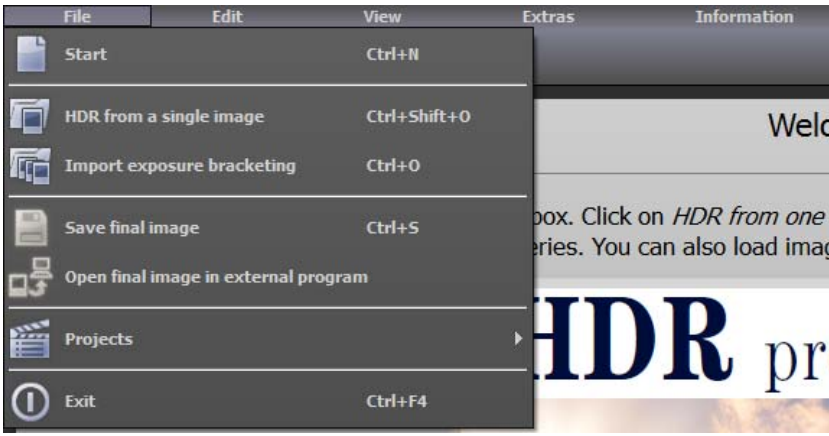
Of course, direct instructions are available via keyboard for a lot of functions, e.g. it is possible to change the HDR area by pressing F5, to switch to the HDR painting mode with F6 and with F7 to tone-mapping.

The main menu contents all program functions and is separated in five main areas:

These five areas are explained in the following chapters.

2.2.1 File

The file menu is responsible for data input and output.



It is separated in following areas:

(a) Start Page

The start page guides you to a newly activated program condition at any time. The current project will be released from memory after the previous question for storage.

(b) Loading of Images

Two options can be selected: HDR “from a single image“ loads a single image and „load exposure bracketing“ loads an exposure bracketing series.

(c) Save Final Images

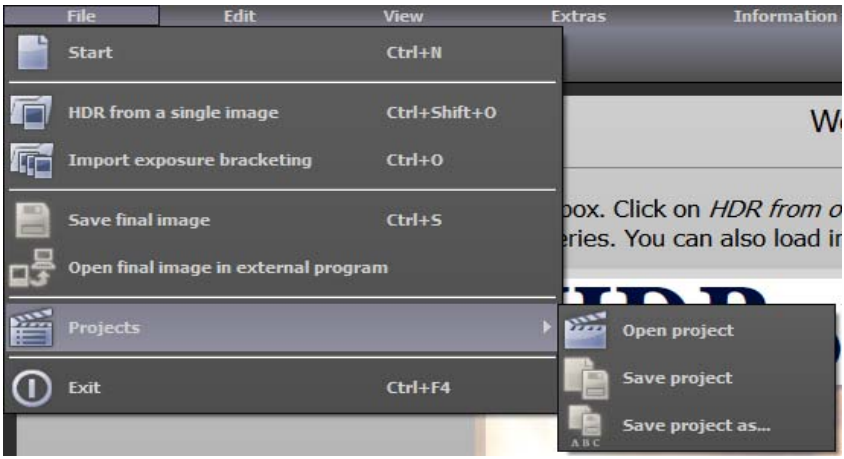
It is possible to save your current final image at any time. The option „open final image in external program“ is only in Windows at your disposal.

(d) Projects

The projects area is a sub menu content, which is explained in the following chapter.

2.2.1.1 Projects

The area for projects is very special in HDR projects. Project files (.hdrproject) allow to save the whole progress of an exposure bracketing at any time.

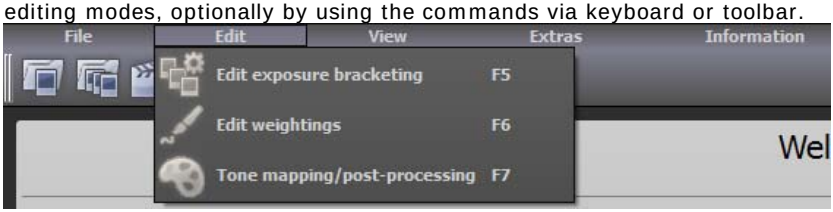


Projects can be opened, overwritten (saved) and saved under a changed name (save under) by using the menu.

Tip:
Projects need a certain space on your hard drive, but allow in return to load the started progress on an image quickly and work on it.

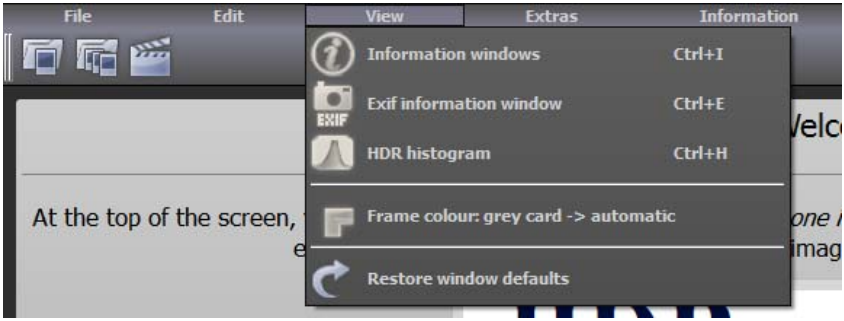
2.2.2 Edit

By using the menu option „edit“ it is possible to switch between three editing modes, optionally by using the commands via keyboard or toolbar.



2.2.3 View

Additional windowas can be switched on or off in the view area, the frame colour of the image area can be determined, as well as the base condition of the total configured interface condition can be set back. (see chapter 2.2.7).



The possible additional switched on windows are:

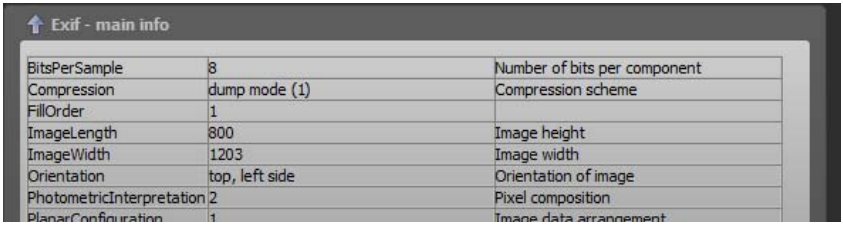
(a) The Information Window

Context-sensitive help to every process area at any time

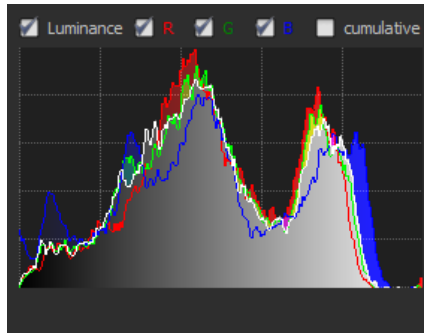
(b) EXIF Information

The EXIF information is always indicated by the selected image of exposure bracketing series. When no image is selected, the EXIF information of the master image is indicated (the main/central image). The several areas of EXIF data can be opened or closed.

Detail of an EXIF displayed in HDR projects:



(c) Histogram



It is possible to switch on/off the luminance and the colour components red, green and blue separately in the HDR histogram.

The option „cumulative“ is a possibility to illustrate a total histogram. This is very helpful to examine the arrangement of brightness in an image in detail.

By clicking on the histogram, it can be transferred to the image area and there you can see it in high resolution.

(d) Frame Colour

Two modes are available to select a frame colour for your final image:

- *Grey Card*

The grey card is a classic grey scale value of photography with a brightness of 18%.

- *automatic (Ambient Color Frame)*

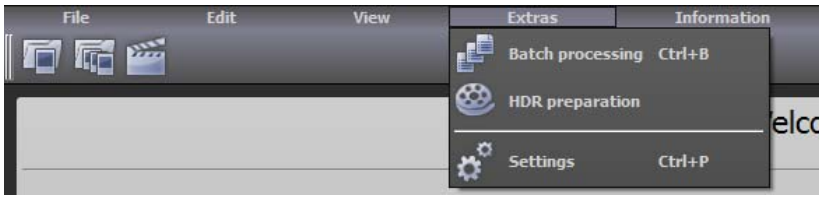
The automatic frame colour mode is special in HDR projects. The optimal frame colour is calculated and displayed in real time.

(e) Reset Windows

With this option you can reset all interface related settings to the standard settings.

2.2.4 Extras

In the extras menu you can select between several special functions of HDR projects:



(a) Batch Processing

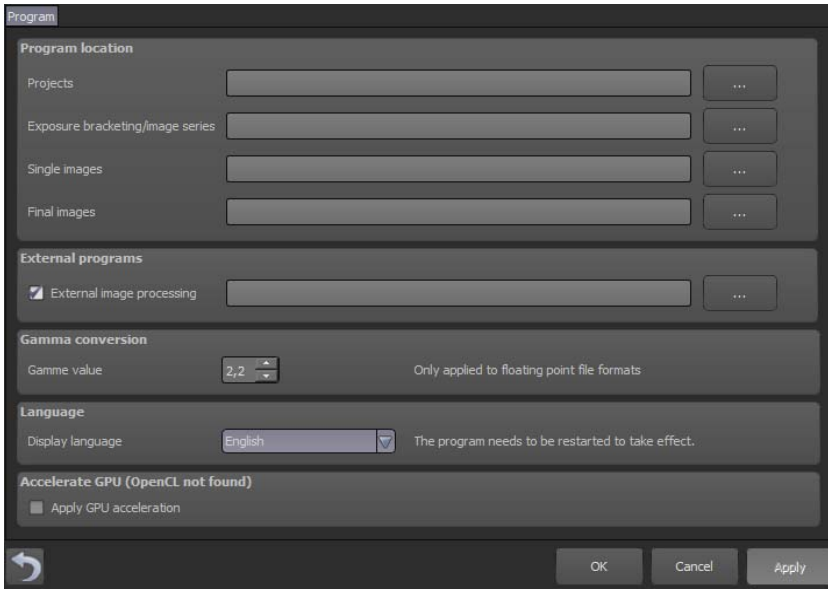
The batch processing is explained in detail in chapter 6.

(b) HDR Preparation

Chapter 3.1 deals with the individual settings in the HDR preparation area. All pre-process settings of image data are clearly defined in this area for HDR creation.

(c) Settings

The program options/settings can be obtained by using this menu point:



(i) Program paths:

You can define standard path settings for in- and output of data.

- Projects: the standard path for project data (.hdrproject)
- Exposure bracketing series/photo series: standard path where your exposure bracketing series data are stored
- Single images: standard path for single images(HDR from a single image)
- Final images: standard path for your final images

You are not forced to set these program paths, but it is easier to load/save your image data significantly.

(ii) External Programs:

Name the .exe program file to which your final images should be sent to (directly through HDR projects).

This option is only available in Windows, because the system of Mac OS does not allow it, as already mentioned.

(iii) Language

The selected display language shows the installed language packages. Select the required language, accept the settings and restart HDR projects to activate the language settings.

(iv) GPU Acceleration

If you want to use the GPU acceleration, please make your settings.

HDR projects needs OpenCL V1.1 to support the graphics card. If the driver is not installed on your system, an information will pop up „OpenCL could not be found“. You can update this driver at any time.

This is only possible for Windows user. For Mac OS the OpenCLV1.1 is already a part of the system. The support of the graphic hardware is automatically fully solved and the option point GPU acceleration is not visible.

2.2.5 Information

You enter the HDR projects homepage by using the information menu. Here you find help (opens in an external .pdf viewer) as well as information about HDR projects concerning version, credits and external licenses.

2.3 Drag & Drop

By using the drag & drop function of HDR projects files can be dropped directly on the surface. This function is context-sensitive and decides which function will be used based on incoming files.

- activate single images (HDR from a single image function)
- activate more images (load exposure bracketing series function)
- activate .hdrproject files (load project function)
- start file folder – batch process with the corresponding folder

2.4 Toolbars

HDR projects contents two toolbars, which displays context-sensitively the available functions. As a result the useless functions are not displayed to increase a clear arrangement.

2.4.1 Main Toolbar

Above on the left side the main toolbar can be found after starting the program, but can also be shifted to another position.

After loading the exposure bracketing series the functions are presented as follows:

From left to right:

Homepage
Closure of the current project after previous save request.

Save Project
Saves the project with the current name. If the project has not been named yet, the function „save project under“ will appear.

Edit Exposure Bracketing Series (active in image)
Shifts to the „edit HDR or exposure bracketing series“ mode at any time.

Edit Weightings
Shifts to the HDR painting mode (see chapter 5).

Tone-Mapping/ Post- Processing
Shifts in tone-mapping and post-processing mode.

Save Final Image
Opens the dialogue to save your current image. If you are currently working in the HDR area, the HDR image will be saved automatically in tone-mapping/post-processing mode.

Open Final Image in External Program
Starts the external program (optional) with your current final image.

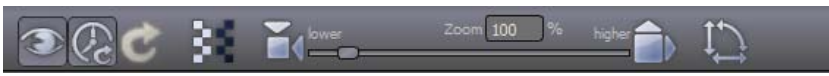
Information Window (active in image)
Activates the context-sensitive information-/help window. You can get a description of the functionality of the current area while you are working in the area at any time.

EXIF Information Window
Opens or closes the EXIF information of the loaded image material.

Histogram
Opens the histogram display of your current final image. The histogram of the HDR image will be displayed in HDR mode and in tone-mapping/post-processing correspondingly to the histogram of the processed image.

2.4.2 Toolbar of the Image Section

The second HDR projects toolbar is the toolbar of the image section. It contents all functions, which are responsible for the display of your final image.



From left to right:

Preview Mode (active in image)
In preview mode your motive will be converted to a size of 1 mega pixel, then all calculations are based on the reduced size for the display. Here it is special, that not the image itself will be converted, but the algorithms of the individual effects. This enables a process in real time at any image size!

If you deactivate the preview mode, all calculations will be executed in original size of your exposure bracketing series.

Real Time Mode (active in image)
While the real time mode is activated, the final image is calculated again, when settings are changed. If you want to change different settings and don't want to start the calculation after every single change, you can turn off the mode. Every change at a turned off real time mode activates the *execute calculations* button.

Execute Calculations
Calculates the final image with current settings and deactivates the button until a new change takes place.

Limitation Pixel Display
The limitation pixel display makes sense and is available in tone-mapping/post-processing.

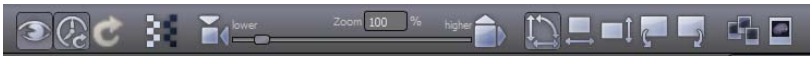
Yellow to red pixels tend to display very bright sections, blue to violet Pixels tend to very dark sections. It is possible, that losses could occur in details by further editing.

Zoom 1:1
With the zoom 1:1 setting you can set the zoom factor to 100%, then one pixel on screen corresponds exactly to one pixel of your image.

Zoom Controller
Using the zoom controller you are able to set the factor infinitely and in real time from 10% to 1000%. Here is no need for an interpolation, because it would avoid the exact working process in several pixels sections.

Adapt Zoom
The function „adapt zoom“ sets the zoom value exactly, so that your whole motive uses the image section at its optimum.

Geometric Functions (active in image)
The button for the geometric function opens an additional section with six functions:



These six additional functions are (from left to right)

Mirror horizontally:
Mirrors all images of exposure bracketing series, the HDR weighting matrices, and the final image horizontally.

Mirror vertically:
Mirrors all images of exposure bracketing series, the HDR weighting matrices, and the final image vertically. .

90 Degrees Rotation (anti-clockwise rotation):
Rotates all images of exposure bracketing series, the HDR weighting matrices, and the final image 90 degrees anti-clockwise rotation.

90 Degrees Rotation (clockwise rotation):
Rotates all images of exposure series, the HDR weighting matrices, and the final image by 90 degrees clockwise rotation.

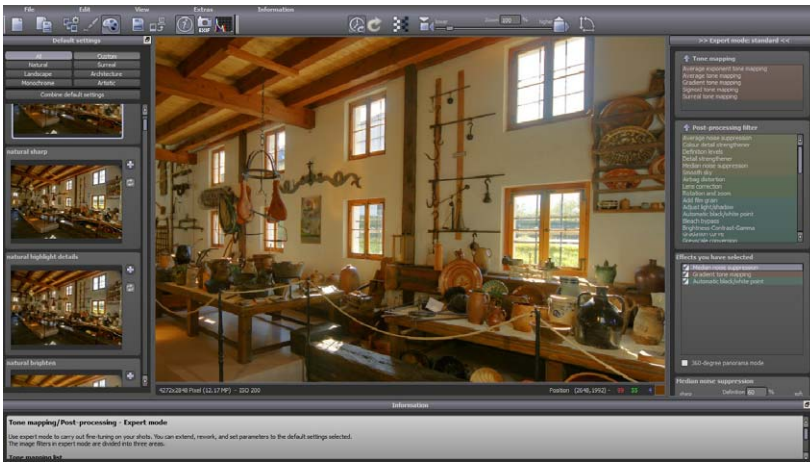
Movement of Image Alignment:
The exposure bracketing series is subjected to a new alignment Inspection. If an improvement can be found concerning movements, this will be adopted to the exposure bracketing series. .

„Rotation-Shearing-Movement"-image alignment:
Exposure bracketing series are subjected to a new alignment inspection. If an improvement can be found concerning rotations, shearings, or movements, it will be adopted to the exposure bracketing series.

Tip:
Both alignment functions in the geometric section serve the alignment afterwards. If the exposure bracketing series has been already treated with the alignment algorithms during the HDR preparation, in general an improvement is not expected.

2.5 Image Section

The image section is in the center of HDR projects and has an additional status bar.



(Example series 8)

To increase/decrease the image section, use the scroll wheel or multi-touch of your Macintosh.

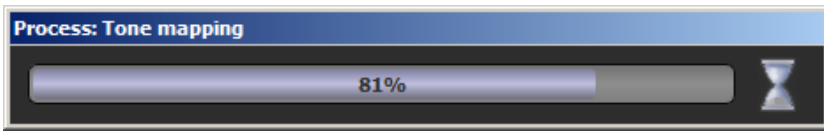
To shift the section, click with your mouse within the image section and hold it, then move to the direction by holding the mouse, to where you want to shift it.

Down on the left the overview display of your image opens directly within the enlarged display. Hence, an overview is guaranteed in which area your motives are located.

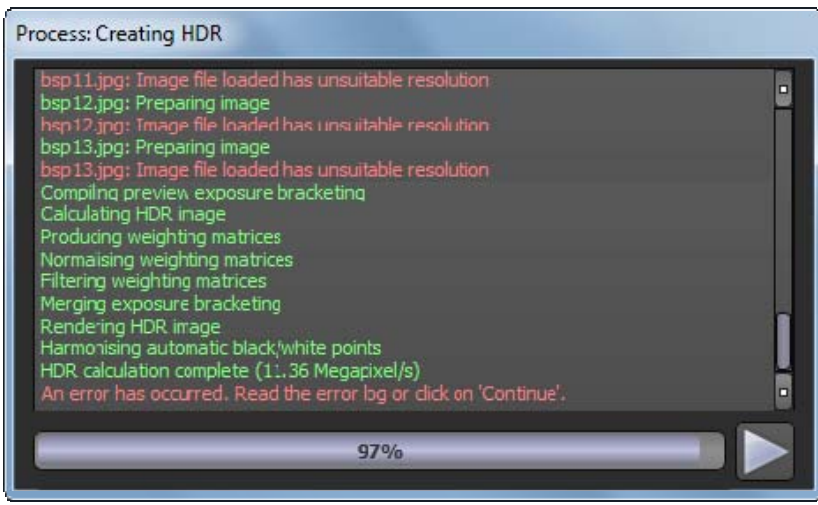
The status bar down your image section informs you about all details concerning your motives, image resolution, number of mega pixel, ISO-value of your exposure (s), the current cursor position, and the pixel colour below the mouse pointer.

2.6 Progress Window

The progress window shows the activity itself as well as the current progress of the current calculation.



In case of any problems during the calculation, the information section of the progress window opens and shows the progress steps in different colours:



The different colours mean the following:

- Green: the progress step was completed successfully
- Yellow: the progress step follows a warning
- Red: during this progress step a problem has been detected

In our example for bsp.11.jpg, bsp12.jpg and bsp13.jpg wrong resolutions were detected (all images in an exposure bracketing series must show the same image resolution). The progress bar shows 97%, which means 3% of the required tasks could not be executes.

Confirm the message with the „proceed“ button below on the right.

2.7 Surface Configuration

The surface of HDR projects is freely configurable. Every process area, toolbars and the information window of the main window can be shifted to a second screen (or third or fourth).

To release a section out of the surface (undock), double click on the title bar of the specific area or drag the specific area by clicking on the title bar outside of the surface.

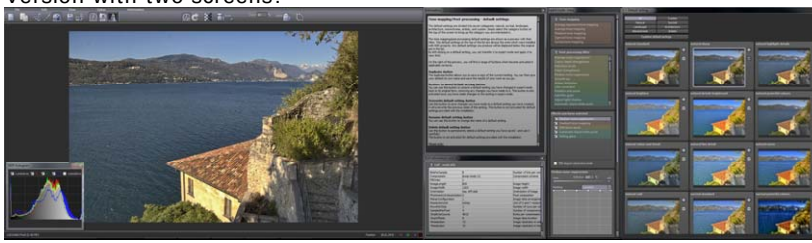
In the same way windows can be docked to the main window again. With a double click on the title bar the section can be shifted to the original position in the main window. Alternatively, it is possible to select a new position in the main window by shifting of the particular section.

Some examples for surface configuration:

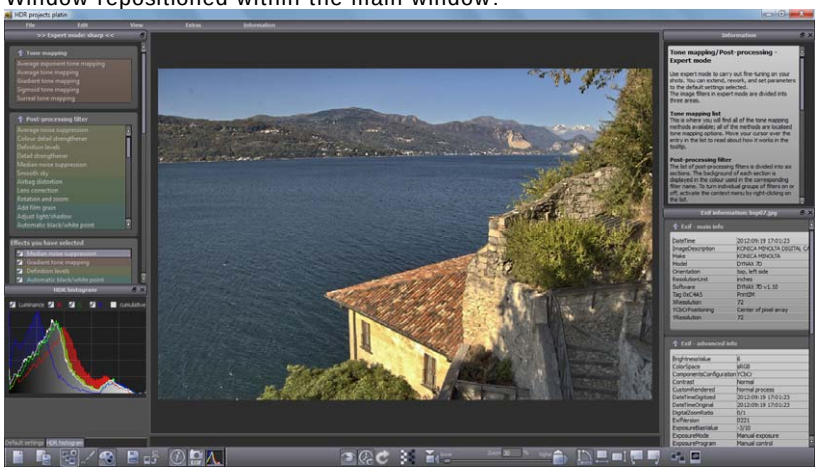
Standard setting:

(Example series 1)

Version with two screens:



Window repositioned within the main window:



While closing the program, your surface settings are saved automatically and restored during the next start.

Select the „reset windows“ function in the display menu to set back the surface in its original condition.

3. HDR Creation

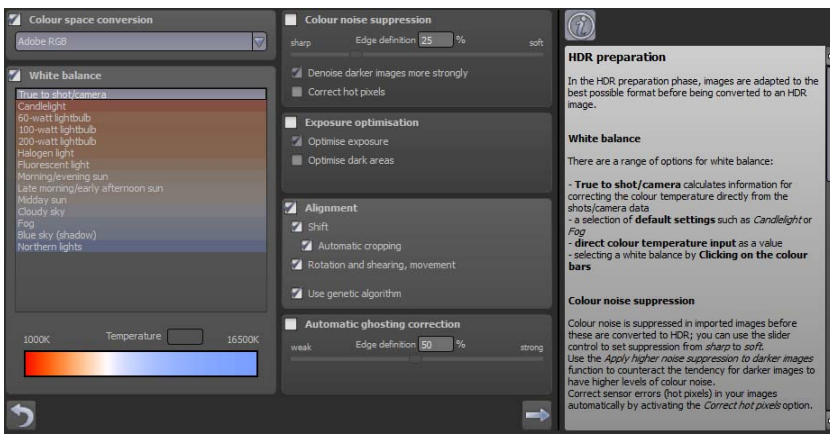
The HDR creation is the base of a good final image out of an exposure bracketing series or the „HDR from a single image“ function. The way of progressing in HDR projects is separated in three main steps:

- The HDR preparation (chapter 3.1)
- Optimization of exposure series (chapter 3.2)
- Selection of suitable HDR algorithm (chapter 3.3)

Especially the possibility to optimize the exposure bracketing series as well as the selection and parametrisation of different HDR algorithms could be an unusual progress step for you, because this technique is not available in other comparable software until now.

3.1 HDR Preparation

The HDR preparation is the first step to get a good HDR final image:



You can define here every single conversion step of your original images, which will be processed after loading.

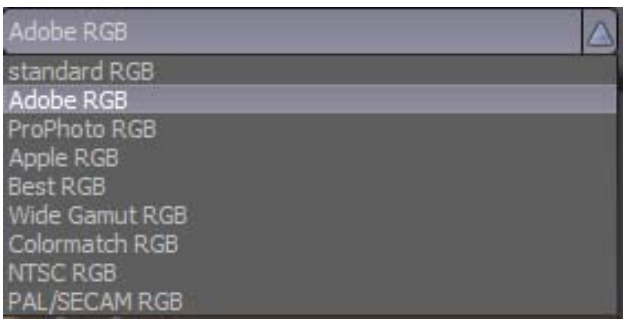
In detail:

- The colour space conversion
- The white balance
- Denoising of original images
- Optimization of exposure and shadows
- Automatic image alignment
- Automatic ghosting correction

To apply the settings, please click to „apply settings“ in your title bar below on the right.

3.1.1 Colour Space Conversion

HDR projects offers nine possibilities to select the colour space, especially for camera RAW-images:



The standard setting ist he Adobe RGB colour space, which was defined by Adobe Systems in 1998.
This is used by many programs like Photoshop/Lightroom and is a good choice (just like the standard RGB colour space), if you are not sure which one you would like to use.

3.1.2 White Balance

The white balance corrects the displayed tint in images, which occurs when a shot was taken e. g. during coloured illumination or twilight time.

(Example series 16 with automatic white balance)

(Example series 16 with white balance Halogen Lamp)

The colour balance will be set in Klevin as colour temperature, usually from 1000K to 16500K.

Select the desired colour balance out of the presettings (automatic white balance is standardized or select a colour balance in the regulator of colour temperature below the presettings.

3.1.3 Denoising of Original Images

HDR projects contents three options for denoising:

Setting of the global strength of denoising
Select a lower value with your regulator (5-10%) for a low denoising or a high value (50% or more) if your original image contents a strong noise.

Stronger Denoising of Dark Images
It occurs very often, that short time exposed images (the dark images) are strongly noisy than the ling time exposed images. If this is the case in your motive, select the stronger denoising for dark images.

Correct Hot Pixels
Hot pixels are pixels that occur, when the sensor of your camera calculates the incoming light not correctly. These pixels appear lightly or strongly discoloured. The HDR projects hot pixels correction removes these pixels while loading automatically.

3.1.4 Optimized Exposure Bracketing

The optimized exposure bracketing transforms your exposure bracketing series in an optimized condition in terms of HDR creation. This means, that individual shots are organized in an optimized exposure order.

Example of practical application:
Suppose that you have issued an exposure bracketing series with 5 shots and shot two is missing in the file.

By optimizing the exposure bracketing, the series will be automatically calculated as if you have had issued an exposure bracketing series with 4 shots – thus, there would never be an exposure gap.

3.1.4.1 Shadow Optimization

Optimizing sections of shadows is very important for shots with very dark image sections, because those sections tend to have tints.

(Example series 11 without shadow optimisation)

(Example series 11 with shadow optimization))

Shown on the example you see the effect of shadow optimization below the balcony. The image below (with shadow optimization) does not show any tints, whereas the same image above (without shadow optimization) shows a yellowish-brown discoloration.

3.1.5 Automatic Image Alignment

The automatic image alignment is used to correct rotation, shearing and moving during the shot of an exposure bracketing series. This happens often during „free hand“ shootings of exposure bracketing series.

3.1.5.1 Shifting and Automatic Cropping

The most common version of errors in exposure bracketing series is the camera blurring during the shot.

(Example series 19 without shifting direction shadow)

(Example series 9 with shifting direction shadow))

As seen in the example there is an extract of an exposure bracketing series without shifting direction. The same extract with shifting direction can be seen in the image below.

Tip:
The alignment of exposure bracketing series needs a lot of calculation time during the loading of your exposure bracketing series. If xou are sure, that your exposure bracketing series is not blurred, deactivate this option and your exposure bracketing series will be loaded quicker than before. The automatic image cropping of exposure bracketing series belongs to the alignment of image shifting. This option removes the empty sections at the edges out of your exposure bracketing series automatically.

3.1.5.2 Rotation, Shearing, Moving

Another type of error in exposure bracketing series is the „shearing“of the camera during the shot or moving objects. For these objects has to be decided, if it is a ghosting image or an error, which can be solved by image alignment.

A good rule is:

- The error affects more the image alignment, in case of moving objects, e.g. fire or object moving in the wind
- Ghosting images are objects, which cover a long way in an exposure bracketing series, e. g. persons or vehicles (see Chapter 3.1.6)

In the example we face a big challenge of an automatic image alignment:

A moving candle flame in an exposure bracketing series out of 10images.

(Example series 16)

(Example series 16 with moving alignment)

On the right side you see the candle flame aligned in HDR projects, compared to it on the left side, the original exposure bracketing series (not aligned by HDR projects).

The result is already good, but could be improved with the genetic image alignment in the following chapter.

3.1.5.3 Genetic Image Alignment

The genetic image alignment is a specially developed iterative procedure to optimize the alignment of exposure bracketing series, which is used in HDR projects for the first time.

The genetic image alignment will be connected to the shifting or moving alignment. At least one basic procedure has to be activated, so that the image alignment can be effective.

Tip:
Activating the genetic image alignment can increase the time needed about a fourfold for the automatic image alignment.

Let us have a look on the example of the candle flame:

(Example series 16 with moving alignment)

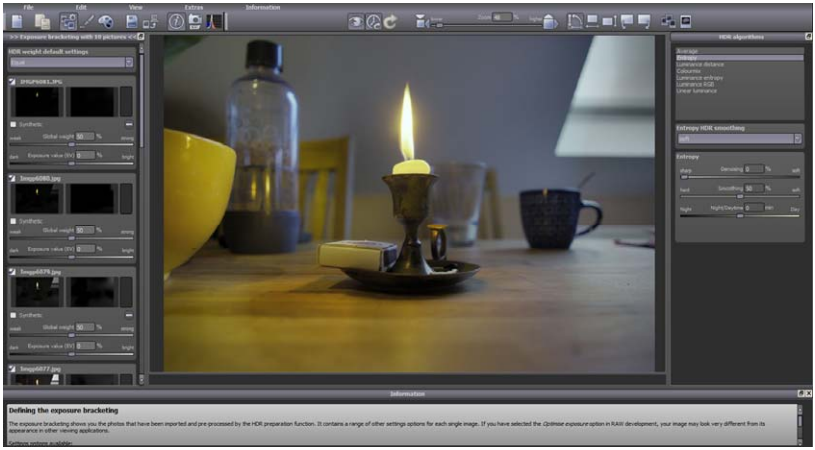
(Example series 16 with genetic moving alignment)

Again we see on the left side the exposure bracketing series, where the simple moving alignment was used. The right side shows the exposure bracketing series after running through the genetic moving alignment. The result is a very clear candle flame.

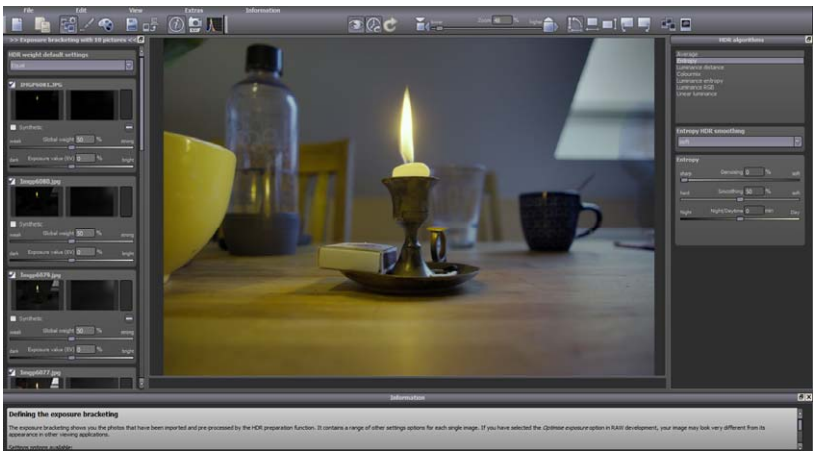
3.1.6 Automatic Ghosting Image Correction

The automatic ghosting image correction works on moving objects, which cover a long way in an exposure bracketing series, as already mentioned in chapter 3.1.5.2.

Let us have a look again on the exposure bracketing series out of 10 pictures of the candle flame in detail:



(Example series 16 with automatic ghosting image correction)



(Example series 16 without automatic ghosting image correction)

Looking at the image below you can see on the right side a translucent person in front of the window, who stood there in one image of the exposure bracketing series and not in others. This person is a ghosting image, which has been removed automatically by the ghosting image correction.

Additionally you can define the edges of the ghosting images in HDR projects. A low value uses a very soft way of correction, whereas a high value corrects in a sharp way.

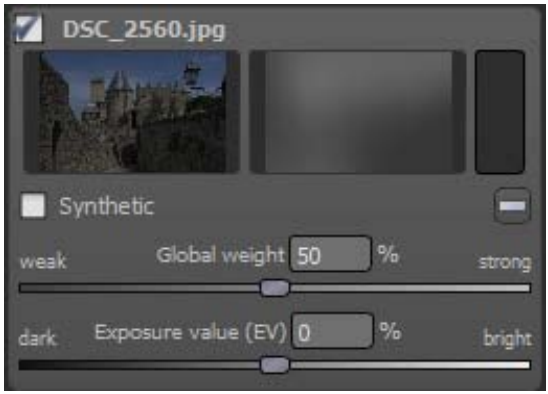
After having explained all main points of HDR preparation, we turn now to HDR creation.

3.2 Process Area Exposure Bracketing Series

After loading an exposure bracketing series in HDR projects, you enter HDR creation, consisting of the exposure bracketing series process area on the left side and the process area of HDR algorithms on the right side.

You can see your image during the process always in the centre of the surface.

If you examine the display of an image of an exposure bracketing series in detail, you see numerous notifications, controller and buttons, which should be explained now in detail.



With the check box above you can exclude or reactivate the image of an exposure bracketing series of HDR calculation.

There is also a display of the image of exposure bracketing series below. Just click on it to see it in full size. Click on it once again and you set it back to the HDR result image.

On the right next to the colour display you can find the HDR weighting matrix of the image of exposure bracketing series.

This grey scale image can e interpreted as follows:

- Light pixels mean, that this section is a big part of the HDR result image
- Dark pixels mean, that this section is just a slight part of the HDR result image

The weighting matrix gives clear information about the influence intensity of an exposure bracketing series section on the HDR result.

Tip:
In chapter 3.3.2 the weighting matrix gains significantly importance for the understanding of HDR creation.

Next to the weighting matrix on the right is a rectangular button, the weighting colour (will be more important later – see chapter 5, HDR painting mode).

You can fully remove an image of exposure bracketing series out of a loaded series.

3.2.1 Synthetic Image of Exposure Bracketing Series

Synthetic images of exposure bracketing series are special in HDR projects. Because of these images gaps in exposure bracketing series can be filled up.

Among others this technique is used for the creation *HDR from a single image*. If you load a single image, it will be extended automatically by two images – one with a low exposure time and one with a higher exposure time.

While loading an exposure bracketing series with two shots, an Additional synthetic image of exposure bracketing series will be created, so that there are always at least three images of an exposure bracketing series available for HDR creation.

The button *synthetic* allows to convert a real image of an exposure bracketing series into a synthetic one.

At the bottom of the process area „exposure bracketing series“ you find an additional button *add synthetic image*. With this button you can add an additional synthetic image to the exposure bracketing series. The base image is always marked with „master image“

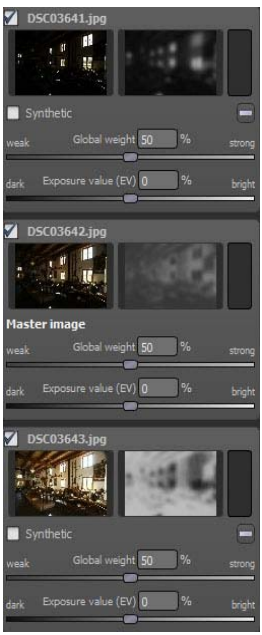
Tip:
Synthetic images of exposure bracketing series can be used as well to adapt particular exposure bracketing areas in the motive.

3.2.2 Global Weighting & Exposure

There are two controller available for every image of an exposure bracketing series, no matter if real or synthetic. You can have a significant influence on the HDR creation with these controllers:

- The global weighting
- The exposure (EV = Exposure Value)

To get a better understanding of the effectiveness, we refer to the following example:

<table>
<tr>
<td> 

Example series 8 in original condition after loading</td>
<td> 

Example series 8 with adjusted global weighting in the first image of exposure bracketing series</td>
<td> 

Example series 8 with adjusted exposure of the middle image of exposure bracketing series</td>
</tr>
</table>

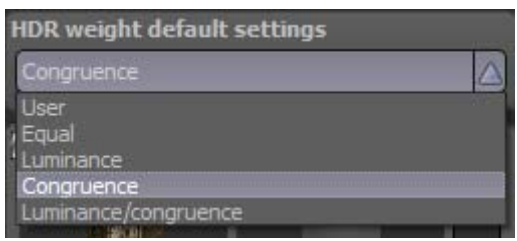
You can see in the left example an exposure bracketing series directly after loading. The controller for the global weighting as well as for the exposure are in the middle position.

The image in the middle of the example shows an increase of the global weighting for the first image of the exposure bracketing series (DSC03641.jpg). This is now stronger in the final HDR image, because of an obviously lighter design of the weighting display.
The final HDR image will be darker in this case, because the shortly exposed image of the exposure bracketing series has a stronger impact on the HDR fusion.

The example image on the right side shows a higher exposure for the second image of the exposure bracketing series (DSC03642.jpg, in this case central image/master image). This has an impact on the final HDR image in two ways.
On the one hand the image of the exposure bracketing series will be enlightened by the exposure. You change the loaded exposure bracketing series in the memory. On the other hand the weighting of the image per pixel will change, because we have now a modified image of an exposure bracketing series.

Tip:
Test some settings to get a better understanding of the effects of both controllers. The final HDR image will be displayed directly after a new modification.

You can find presettings for the global weighting of an exposure bracketing series above of the actual one:



With these presettings you can choose an automatic setting of global weightings out of four algorithms:

- *constantly*: sets all global weightings in middle position, the images of the exposure bracketing series get equal weight for the HDR creation
- *Luminance*: sets all global weightings to one value, which corresponds to the average luminance of the particular image of an exposure bracketing series
- *Congruence*: sets all global weightings to one value, which corresponds to the average coverage of the image of exposure bracketing series to the master image.
- *Luminance-Congruence*: sets all global weightings to one value, which corresponds to the average luminance in relation to the average covering of the image of exposure bracketing series to the master image

Tip:
The choice of the congruence presetting can lead to a decrease in ghosting images in some exposure bracketing series.

3.3 Progress Area HDR Algorithms

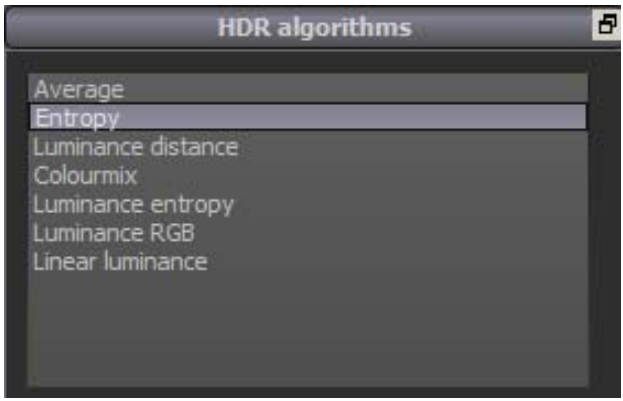
The following chapter deals with the different HDR algorithms in HDR projects. They can be found together with the parameter controllers on the right side of the user´s interface and can be selected without any limitation.

What is an HDR algorithm?
It is a mathematical formula, which defines the weightings (see weightings display in the exposure bracketing series) of the individual images of exposure bracketing series per pixel.

But every algorithm has different effects on the final HDR image and depending on the motive it has weaknesses and strengths.

3.3.1 What kind of HDR algorithms exist?

HDR projects offers seven different HDR algorithms:



Average
The average is the simplest form of HDR creation and calculates the Average value out of the images of exposure bracketing series.

Entropy
The entropy is a measure in information theory for information density. Applied in HDR creation it results to an algorithm, which measures the information density of the images of an exposure bracketing series per pixel and converts it to weightings for HDR creation.
The result is a very stable method, which is set as a default-algorithm for HDR projects.

Luminance Distance
The luminance distance uses the different luminance distances in an image for the weighting in HDR creation. It is as well a universally applicable method, which is qualified for almost every exposure bracketing series.

Colour Mix
The colour mix method uses the colour components per pixel as a measure for weighting and is especially suited for exposure bracketing series with a lower luminance difference in sub areas, like e. g. foggy shots, smoke or cloudy shots.

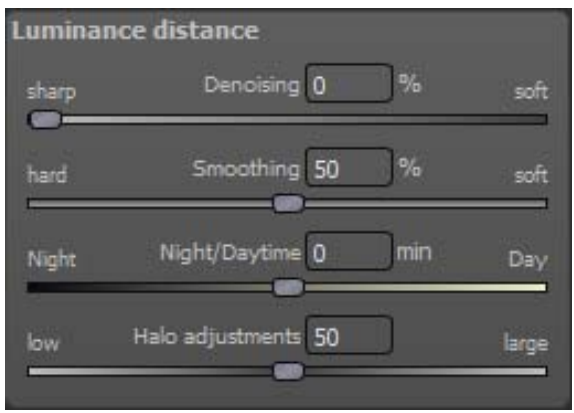
Luminance Entropy
The luminance entropy is a link from the luminance distance and the entropy to a combined method.

Luminance RGB
The luminance RGB method combines luminance distance and colour mix to a new method and is especially suited to landscape shots.

Linear Luminance
The linear luminance uses direct luminance (brightness) for the pixel weighting.

3.3.2 Parameters of HDR Algorithms

The above mentioned HDR algorithms can be parametrised. The algorithms have a lot of different parameters, which results from a mathematical background.



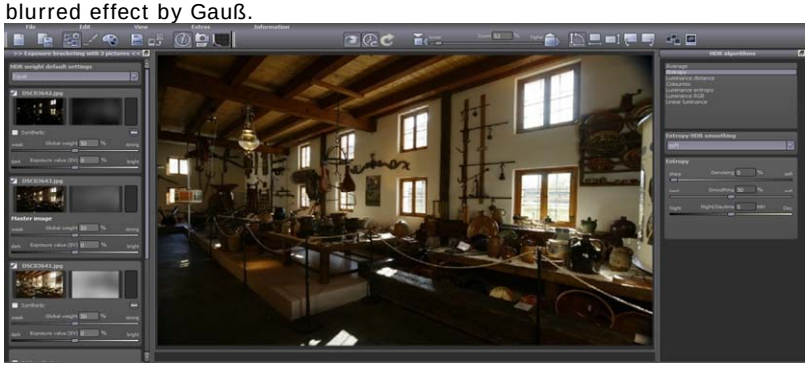
Seen on the example of the luminance distance method you can see in the image up to four parameters of HDR algorithms.

3.3.2.1 Denoising

The denoising has a direct impact on the HDR image and indicates its intensity in percent. A value of 0% states, that no noisy pixels are removed, whereas a high value indicates, that the HDR images is heavily denoised.

3.3.2.2 Smoothing / Presettings

The smoothing has a direct impact on the weighting matrices, which results out of the HDR algorithms. It states the smoothing intensity depending to the image resolution in percent. A value of 50% (as per image above) indicates, that the weighting matrices are smoothed with an extension of 50% of the image resolution. The smoothing works with a blurred effect by Gauß.



(Example series 8 with default values after loading)

(Example series 8 with a smoothing of 2%)

Examine the window pane in the image above. Here you can see a better design of the „window content“ at a lower smoothing (see image below). The HDR smoothing is a very powerful tool to optimize your HDR image. Unfortunately the finding of the optimal smoothing value cannot be automatized mathematically, because the result is strongly dependent of the individual user´s taste.

Tip:
A smoothing of exact 0%, hence no smoothing, only makes sense by using the entropy and luminance distance algorithms. The four algorithms above fit only in exceptional cases for HDR creation without smoothing.

3.3.2.3 Day & Night Controller

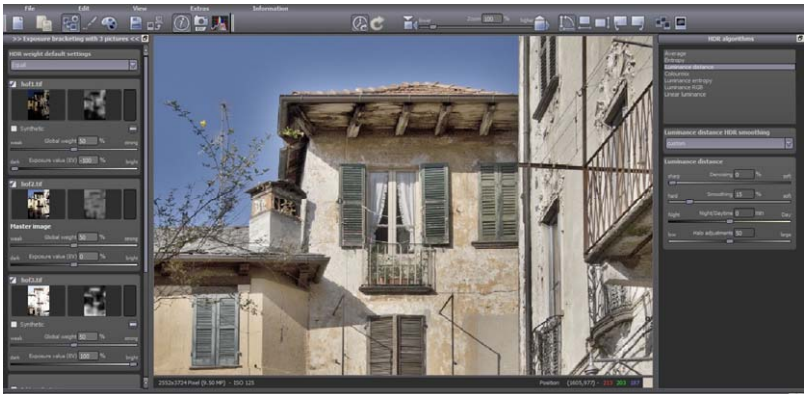
The day & night controller is an adaptation of the HDR algorithms to a day or night shot.

Move the controller to the left (night), if your exposure series equals a night shot or move it to the right (day), if your exposure series equals more a day shot.

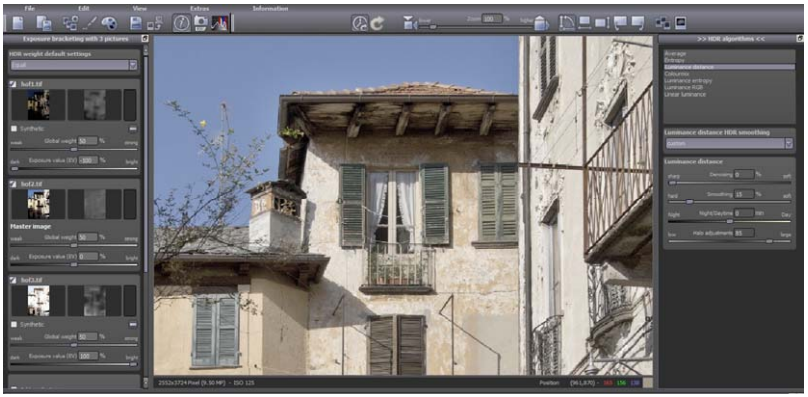
The day & night control is not available under mathematical conditions for the algorithms average.

3.3.2.4 Halo-Adaptation

The Halo-adaptation deals with a typical problem of HDR creation: creation of Halo effects (HDR shadows).



(Example series 11 with a lower smoothing, Halos occur where heaven starts)



(Example series 11 with a Halo-adaptation of 85%, the Halo-effects in the heaven area have been removed)

The Halo-adaptation is not available under mathematical conditions for the algorithms average and entropy.

4. Tone-Mapping / Post-Processing

After creating or setting your image, the next step is tone-mapping (local tonal range compression) related to the post-processing of an image.

HDR projects offers different algorithms in tone-mapping, numerous effects of post-processing as well as different prepared settings.

4.1 Presettings

The presettings are separated into seven different categories. To select a presetting, click on the corresponding preview of the image.

Natural
This presetting is intended for a natural look and the HDR image is not significantly changed.

Landscape
The landscape presettings are specially optimized tone-mapping and post-processing effect chains for editing of landscape shots. Presettings like e.g. „night shot“ and „sunset“ offer solutions for almost every landscape shot.

Monochrome
With these presettings a conversion of your motives in different black/white or grey scale images is possible.

Surreal
Surreal presettings are extreme versions of tone-mapping and post-processing effects.

Architecture
The architecture presettings are special selected tone-mapping and post-processing effect chains for the post-processing of architecture shots like e. g. church, half-timbered building or interior shots.

Artistic
The artistic presettings is a section, where you can try a lot of different impressions. For every taste are special presettings available like „impressionistic“,„old photograph“ or „comic“.

Own
In this category all own set presettings are saved.

All
With this button you are able to display all presettings at the same time.

The presettings contents different functions, which you can find on the right next to the particular image preview.

The two functions above are available for all presettings:

Duplicate Presettings
You create a copy of the presetting and copy it into the category „own“.

Set back to Saved Condition
This function sets the presetting back to the saved condition. Thus you can modify the presettings delivered by the installation and restore it at any time.
This function will be active after you made a modification.

The three functions above are available only for settings made by yourself to protect your installed data. This ensures, that the provided presettings during installation are always available and can’t be deleted or overwritten.

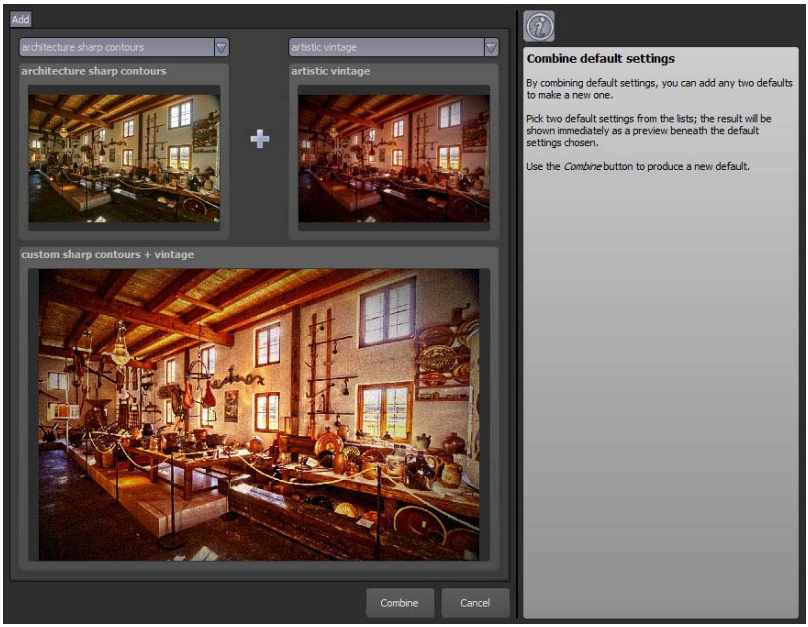
Overwrite Presetting
When you clock on the overwrite function, the presetting will be overwritten with the current settings. The settings, which are saved so far, will be lost with this action. This function will be active as soon as you made a modification.

Re-Title
If you would like to re-title your own setting, activate this function.
Set a new name and confirm it with OK.

Delete
To finally delete a preset, click on the delete button. The presetting will be finally deleted out of your data after the security question.

4.1.1 Combining of Presettings

To combine two presettings together, use the button *combine presettings* directly below the categories:



(Example series 8 – combine settings)

At the top of the screen you can select two of the saved presettings out of the list and combine by clicking the button *combine* to a new presetting of the category *own.*

In the example the presetting „sharp contours“ of the category architecture with the presetting „vintage“of the artistic presetting, turns to a new presetting „sharp contours + vintage“.

Tip:
The way, how you combine two presettings, has a crucial influence on the result. test different versions. This results very often to unexpected image effects.

4.2 Tone-Mapping Expert Mode

The expert mode of tone-mapping and post-processing is located on the right side of the surface. There you can configure the whole image post-processing, test new combinations of effects or adapt a presetting according to your requirements.

There are three different lists:

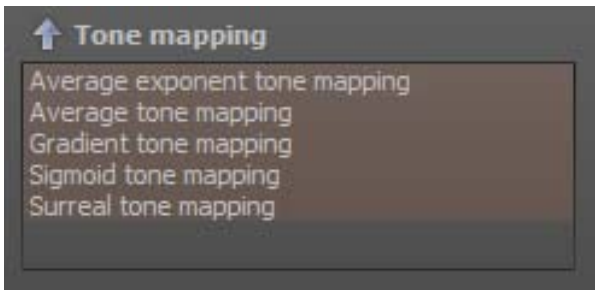
- The tone-mapping algorithms
- The post-processing effects
- The selected filters and ist parameters

The tone-mapping algorithms as well as the post-processing effects are selectable filters, and the selected filters are those, who represent the current calculation. The following chapters (4.2.1 – 4.2.3) deal with the function of filter lists and how you can transfer filters to the list of the selected filters.

4.2.1 Tone-Mapping Algorithms

The tone-mapping algorithms are exclusively to upgrade the quality of the image. HDR projects offers five different tone-mapping algorithms, which can be applied individually or a number of times.

Double click on the required tone-mapping to add a listed tone-mapping to the selected filters. Alternatively a context menu is available with a right-click, which has the correct functionality for this application.



All tone-mappings are working with local tonal range compression and receive an integrated detail booster for details in macro and micro.

Gradient Tone-Mapping
The gradient tone-mapping is a powerful method and convenient for motives with weak original colours and high contrasts.

Average Tone-Mapping
The average tone-mapping is a very stable method and convenient for almost every motive.

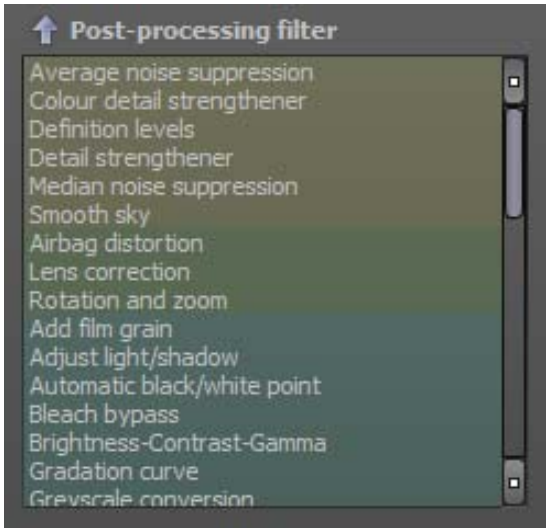
Average Exponent Tone-Mapping
The average exponent tone-mapping is a stable method and is very strong in dark areas. Thus it is very convenient for tunnels and vault shots.

Sigmoid Tone-Mapping
The sigmoid tone-mapping is a very special method, which was optimized for motives with strong highlight sections.

Surreal Tone-Mapping
The surreal tone-mapping is a very intense method and offers a good base for extreme HDR images.

4.2.2 Effects in Post-Processing

The list of effects in post-processing contents 45 different effects, which are separated in six categories.



These effects are related to categories marked with a colour:

- **Yellow**: edge effects
- **Green** : geometric effects
- **Cyan**: exposure effects
- **Blue**: colour effects
- **Purple**: blurring effects
- **Pink**: artistic effects

Within the list are the classic post-processing effects of the HDR area, e. g.

- Detail intensifier
- Filter for denoising and sharpening
- Gradation curves
- Grey scale transformer
- Lens correction, zoom and rotation
- brightness adjustment for lights and shadows
- Scattered light reduction (veiling glare)
- Local and manual white balance per pipette or colour circle
- Correction of the chromatic aberration
- Adaptation of colour per tone, brilliancy, balance and temperature
- Edge-preserving blurring effects
- Colour tone blurring effects (especially convenient for portrait shots)
- Glamour lights (glamour glow)

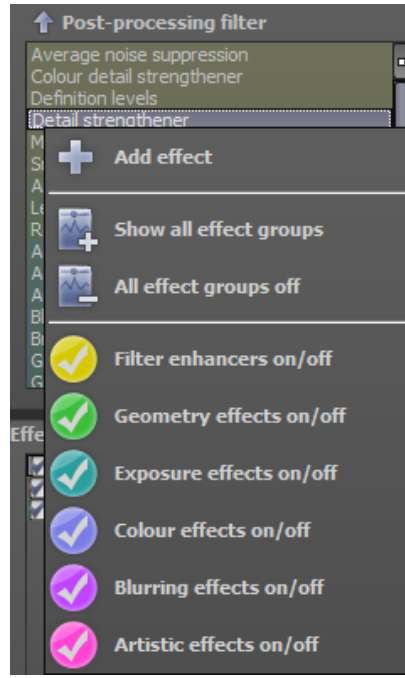
and additionally in the artistic area effects like:

- Comic
- Pencil painting
- Frame
- Wax image
- Thumbnail (Tilft Shift)

As we have seen before in tone-mapping algorithms, you can add an effect by a double-click to your selected effects.

Alternatively there is a context menu available by taking a right-click with several additional functions.

The several functions of the context menu are:



Add Effect
Adds the selected effect to the selected filters

Show all Effect Groups
Activates the display of all six effect groups. You can see now all effects available.

All Effect Groups off
Deactivates the display of all six effect groups. You see now an empty list and can add the effect groups individually.

Edge Effects on/offs
(De) Activates the display of edge effects.

Geometric Effects on/off
(De)Activates the geometric effects.

Exposure Effects on/off
(De) Activates the display of exposure effects.

Colour Effects on/off
(De) Activated the display of colour effects.

Blurring Effects on/off
(De) Activates the display of blurring effects.

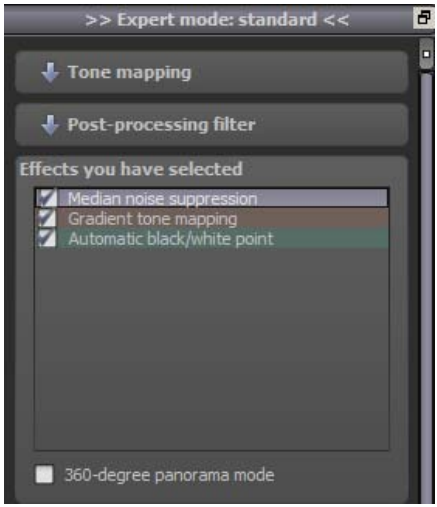
Artistic Effects on/off
(De) Activated the display of artistic effects.

4.2.3 Selected Filters

The list of selected filters ist he centerpiece of the tone-mapping and post-processing section. The whole image post-processing is managed here as well as the parametrisation of individual effects.

The parametrisation will be explained in detail in the following chapter.
But we will have a detailed look on the basic functions of the selected effects before:

The list of tone-mapping as well as the post-processing effects of the expert mode were closed in the example.



The selected effects in our example contents a colour chain with three filters:

- Median noise suppression
- Gradient tone-mapping
- the automatic black/ white point

These three filters are used automatically one after another for the HDR image and result to a tone-mapping final image.

To deactivate an effect temporarily, click in check box in front of the effect name.

A double click on an effect removes it out of the list.

Even in the list of the selected effects is a context menu available with numerous functions.

(De) Activate effects
Activates or deactivates the selected effect.

Activate all effects
Activates all effects in the list.

Activates all other effects
Activates all effects up to the selected one, all above will be deactivated.

Activate only this effect
Activates only the selected effect, all others will be deactivated.

Deactivate all effects
Deactivates all effects on the list.

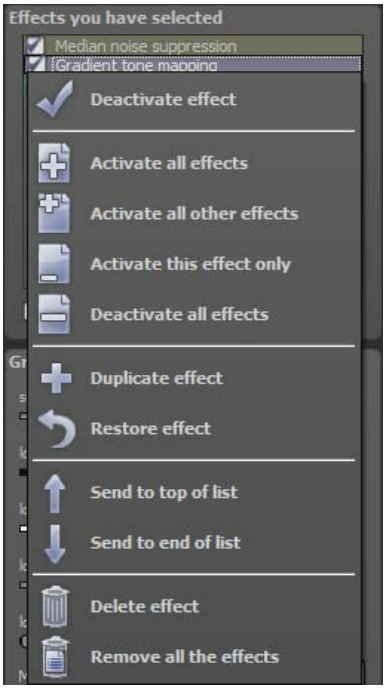
Duplicate effect
Creates a copy of the selected effect and copies it to the end of the list.

Restore effect
Restores the selected effect to the standard settings.

Shift to the beginning of the list
Shift the selected effect to the beginning of the list.

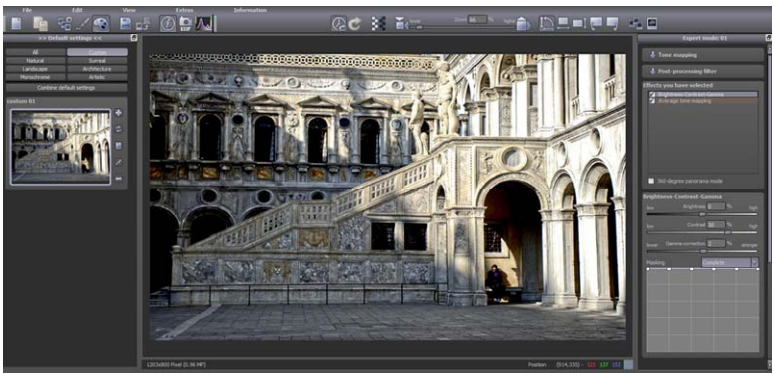
Shift to the end of the list
Shifts the selected effects to the end oft he list.

Remove effects
Removes the selected effect from the list.

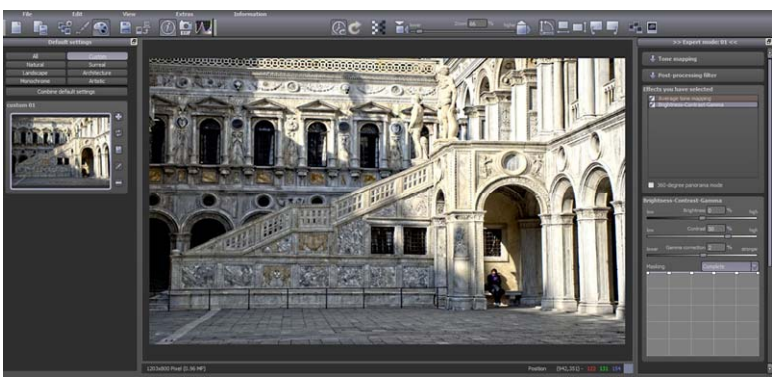


To re-sort effects optionally within the list, they can be moved by using drag & drop.

Tip:
The order within the list of the selected effects can have a significant influence on your final image.



(Example series 3 – Brightness/Contrast/Gamma – Tone-Mapping)



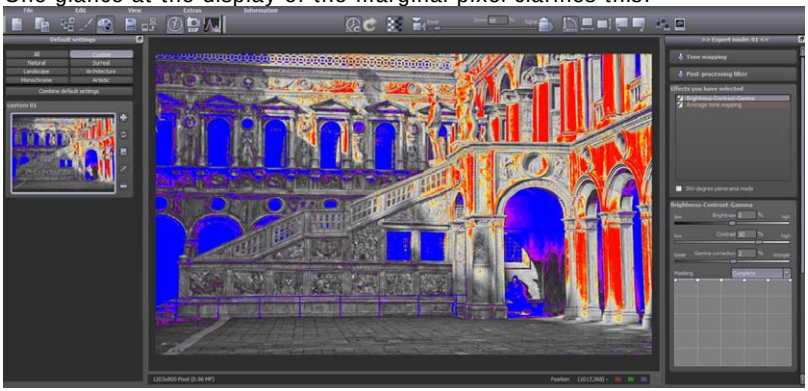
(Example series 3 – Tone-Mapping – Brightness/Contrat/Gamma)

The image above shows significantly less details in the right big archway as the version below.

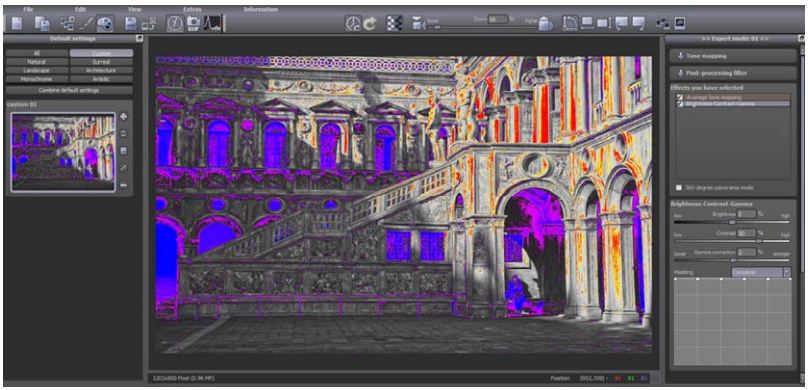
If you use the brightness/contrast/gamma effect at first and darken all already dark sections, it leads to brightness breaks. The following tone-mapping is not able to compensate this effect.

In contrast to it the details in the big archway in the image below are better to see by the used tonal range compression (tone-mapping).

One glance at the display of the marginal pixel clarifies this:



(Example series 3 – Brightness/Contrast/Gamma – Tone-Mapping)



(Example series 3 – Tone-Mapping – Brightness/Contrast/Gamma)

It comes out clearly, that the „risky“ marginal pixels (pixels, which are very dark or very light), are significantly lower in the image below.

4.2.3.1 Parametrisatio

The parametrisation of individual effects takes place directly below the list of the selected filters. Here the parameters of the currently selected effect are usually displayed.

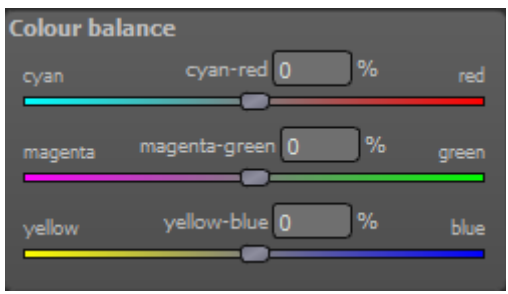
Thus different types of parameters are distinguished:

- Controller (Slider)
- Gradation- and masking curves (Splines)
- Colours & pipettes
- Positions
- Lines

Individual effects can contain up to eight parameters.

Controller

The controller or slider parameters are the simplest form of parametrisation. You can set the value of the influencing factor with a controller from the left (lower value) to the right (higher value). Alternatively you can set the value directly in the numeric array.



In our example you see the parameters of the colour balance effect containing three controllers: cyan-red balance, magenta-green balance, and yellow-blue balance.

By shifting the controller value you start modifications, which are displayed directly on the final image.

Additionally you can see a colour overflow within the controller, which shows how the new value effects the image.

Gradation- and Masking Curves

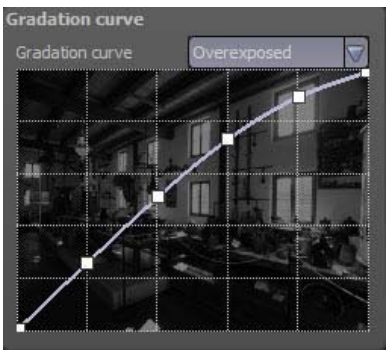
The curves parameters are separated in two types. The gradation curves, which have a direct impact on the brightness of your image, and the masking curves, which define the intensity of the effects on the different brightness areas.

The input of the curve takes place for both types in the same way.

Every curve (spline) contains six control points. These points can be moved within the frame in the height as well as in the horizontal position (not valid for both outer points).

The Gradation Curve:

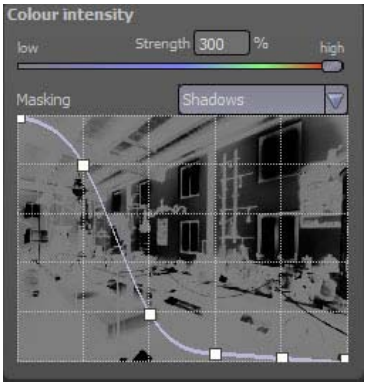
You can see the gradation curve in the example. It is a brightness changing curve. The diagonal line is the default condition, which is creating the original image. Drag one point to the bottom, pixels will be darker with this brightness and vice versa.



Additionally you can find above on the right side a selection box with presettings for curves. In the example we selected the presetting „overexpose“.

In the background you see the preview of the affect of the gradation curve in grey scale (representing for brightnesses). This preview is created in real time, directly during your moving of the control point.

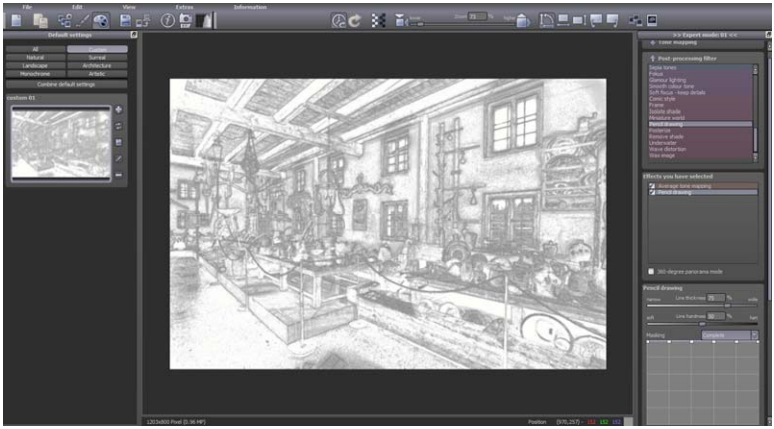
The Masking Curve:
You see the masking curve in the example. This curve determines the intensity of the effects (here colour brilliance) for the individual luminance sections of the image. If you drag down one point, the pixels are less affected by the luminance of the individual effect and vice versa.



You can find here a selection box with presettings above on the right. In our example the presetting „shadow“ was selected. This implies for the colour brilliance in the example, that the increase to 300% for the very dark pixels is fully calculated, for pixels with approx. 30% the colour brilliance is only half active, etc.

The preview of the masking curve shows the intensity of the effect from black (no effect) to white (full effect) directly in real time during curve manipulation.

The following example should clarify the function of the masking curve:



(Example series 8 with Effect pencil painting – masking curve „complete")

(Example series 8 with Effect pencil painting – masking curve "midtones")

The image above shows the effect pencil painting with the masking „complete" used for this image. This means, that the effect for all luminance is calculated with 100%.

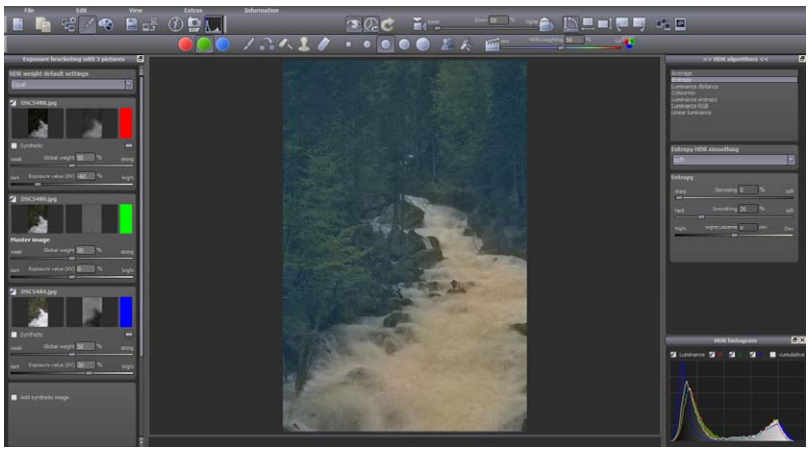
In the image below the effect midtones was selected. Here the effect was calculated with 100% for medium luminance, the effect intensity declines depending to the outer pixels luminance (from black to white).

5. HDR Painting Mode

The HDR painting mode is a complex tool for the manual processing of the final HDR image for individual image sections.

To activate the painting mode, use the button „edit weightings“ in the main toolbar or the button „select weighting colour“ in the exposure bracketing series display.
Alternatively press key F6.

If the HDR painting mode is activated, some sections in the surface will be changed or added by the following functions:



(Example series 14 – image 1,5 and 9 loaded – HDR painting mode active)

You can see in the display of exposure bracketing series (left), that the images of the exposure bracketing series were attributed to the colours red, green, and blue. With more than three images of exposure bracketing series the master image is attributed to green and the following images red and blue.

This colour attribution is both important for the presentation as well as for the painting mode.

Additionally a new function bar appeared above the main toolbar, which indicates the relevant range of functions for the painting mode:

- Select red working colour
- Select green working colour
- Select blue working colour

- Activate paintbrush mode add
- Activate paintbrush mode smoothing
- Activate paintbrush mode delete
- Add stamping mode
- Activate paintbrush mode subtract

- Select paintbrush size very small, small, medium, large, very large

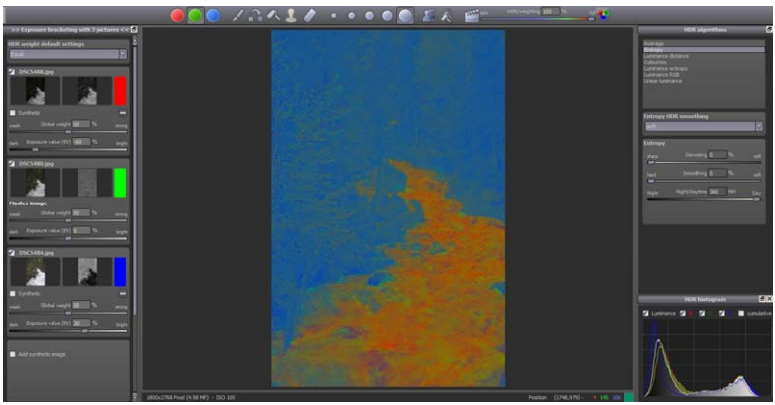
- Conduct automatic ghosting correction
- Delete all paint weightings
- HDR blending mode → HDR image – controller from 0 to 100% -
- weighting display

These buttons as well as the based functions will be explained in the following chapter.

5.1 Weighting Display vs. HDR Display

At first we have a look on the new image display. As soon as you have activated the painting mode for the first time, you will notice a colour modification in your image.

To clarify this effect, we set the controller „HDR/weightings“ to 100%. Thus, there will be only weightings displayed within the image area.



(Example series 14 – image 1, 5, 9 loaded – HDR painting mode – HDR/weightings controller 100%)

Additionally the HDR smoothing has been reduced to 0% in this example, because the weightings can be identified better.

To interpret this display, we have to consider the colour classification:

- The dark image of the exposure bracketing series will be displayed with red
- The medium image of the exposure bracketing series will be displayed with green
- The light image of the exposure bracketing series will be displayed with blue

The display in the middle shows the HDR weightings depending on the selected and classified colour of the images of exposure bracketing series.

In HDR creation the blue sections (the trees in the motive) in the image display will be taken mainly out of the lightest image of the exposure bracketing series, while the red/yellowish sections (the river in the

motive) will be taken mainly out of the darkest image of the exposure bracketing series for the HDR creation (and with a small part out of the image in the middle of the exposure bracketing series).

You can see here the actually invisible step of HDR fusion.

5.2 Select the Working Colour

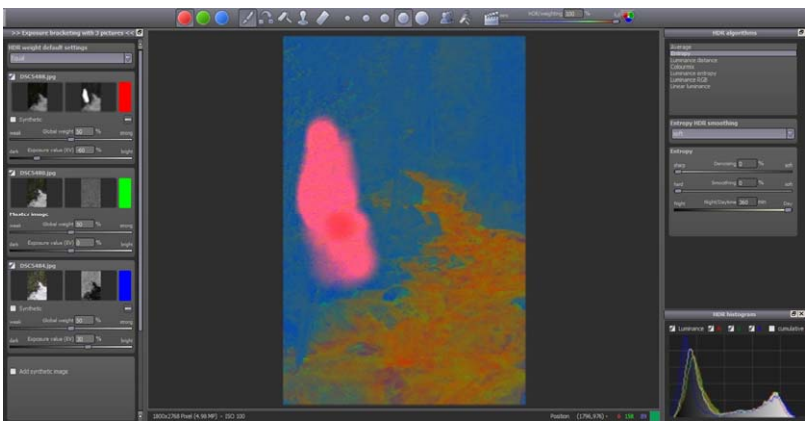
The first step to intervene manually in HDR image creation is the selection of the working colour.

In our example a selection can be made between three working colours red, green, and blue – each colour represents the assigned image of exposure bracketing series.

If you want to step into the weighting of the dark image of the exposure bracketing series, select in our example the working colour red.

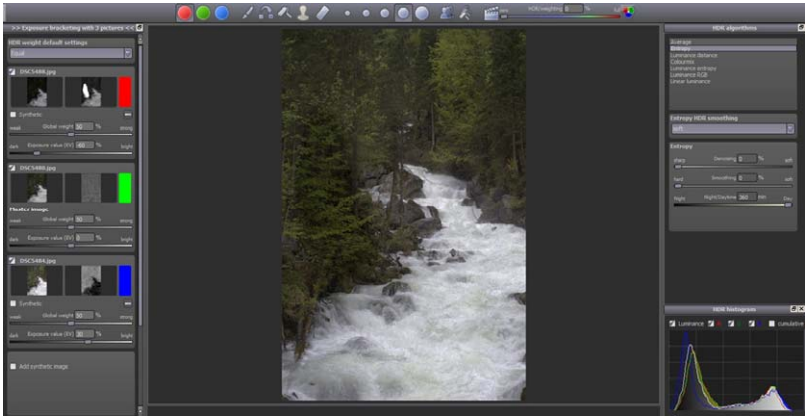
5.3 Add

The add function increases each selected weighting according to the working colour. You can easily paint with the selected colour on the image by using the mouse.



(Example series 14 – image 1, 5, 9 loaded – HDR painting mode – HDR/weightings controller 100% - add)

You can set your HDR/weightings controller to 0% to see the effect on your painting of the HDR image.



(Example series 14 – image 1, 5, 9 loaded – HDR painting mode – HDR/weightings controller 0% - add)

It is now visible in your HDR image, that the indicated red area is darker now, because of he increased weighting of the darker image of the exposure bracketing series in this section.

You can drag several sections of the HDR image in the required direction, e. g. to accentuate or to weaken certain structures.

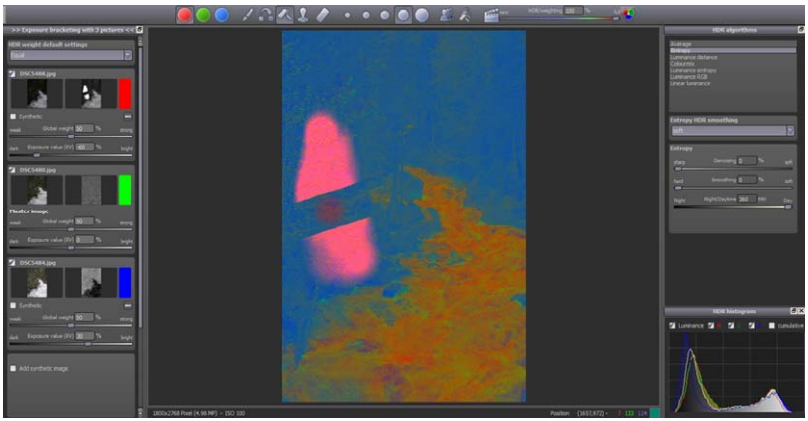
5.4 Blurring

The blurring function smooths specific sections in the weightings for each selected working colour. After selecting the working colour red, smooth only the weighting of the image of exposure series with the classification red.

Tip:
You can only use the blurring effect, if you used the painting mode before. The weightings occurred by HDR algorithm cannot be smoothed. Please use the controller „smoothing“ in the section of HDR algorithms to smooth the weightings.

5.5 Delete

It is possible to set back already drawn sections to the original situation by using the delete function. The original situations are the weightings calculated by the HDR algorithms.



(Example series 14 – image 1,5, 9 loaded – HDR painting mode – HDR/weightings controller 100% - deleted)

In our example the section drawn in red before is now deleted in the middle by using red. Now the original HDR algorithm is visible again (the red spot in the image is the paintbrush of the mouse cursor).

Tip:
It makes sense, to recreate the edges in HDR weightings with the blurring function which occur by deleting, to avoid unwanted borders in the HDR image.

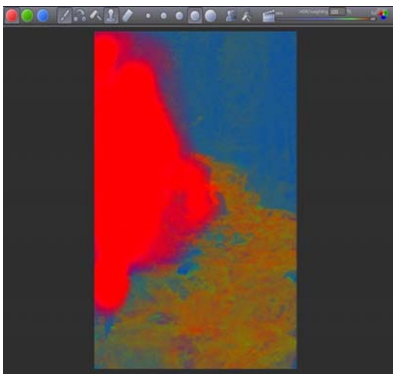
5.6 Stamping Mode

The stamping mode is available for the explained functions adding, blurring, and deleting in chapter 5.3, 5.4 and 5.5 and can be activated to it. The stamping mode is not available for the subtract function and will be switched off automatically. The above mentioned functions work on the selected weighting and on all other weightings of all images in your exposure bracketing series, if the stamping mode is activated.

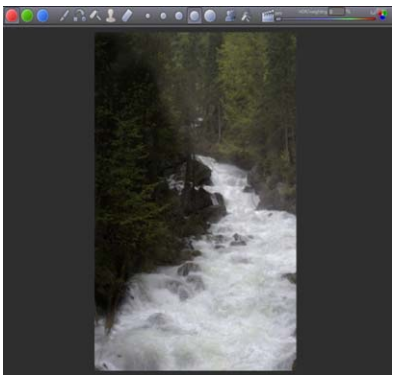
This is influencing as follows:

Add with stamping mode
The weighting of the selected colour classification in the image of exposure bracketing series will be increased and reduced intensively in all other images of the exposure bracketing series.

If you have (same as example) an exposure bracketing series with three images and add the weightings in red to the darker image, the other images of the exposure bracketing series will be reduced by the same amount (two in our example, and each half of the addition).



(Example series 14 – with working colour red and stamping mode paint4ed weightings)



(Example series 14 – final HDR image)

Resulting out of the addition with the activated stamping mode, one image one image section will be highlighted on a special image of the exposure bracketing series. In our example the trees in the front are transferred out of the darker image of exposure bracketing series to the HDR image.

Blurring with stamping mode
Activating the stamping mode together with the blurring function create a result which is easier to understand than in the add function.

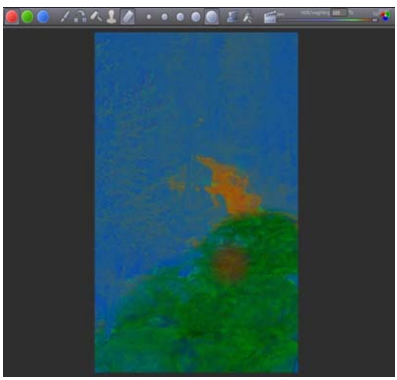
In this case the blurring takes place in all images of the exposure bracketing series in the painting section and is qualified to smooth edges resulting of the stamping mode while adding or deleting.

Delete with stamping mode

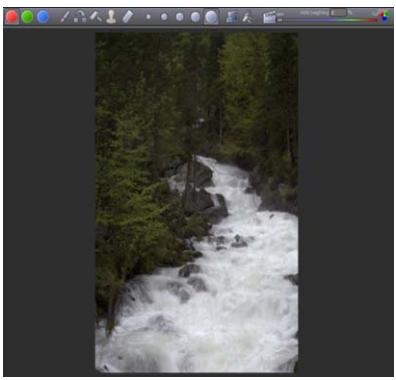
The delete function in the stamping mode is basically the same like the blurring function and will be applied on all images of the exposure bracketing series in the painted area.

5.7 Subtract

The subtract function decreases each selected weighting according to the working color. Just paint the selected colour on the image by using your mouse.



(Example series 14 – with working colour red sub tracting section)



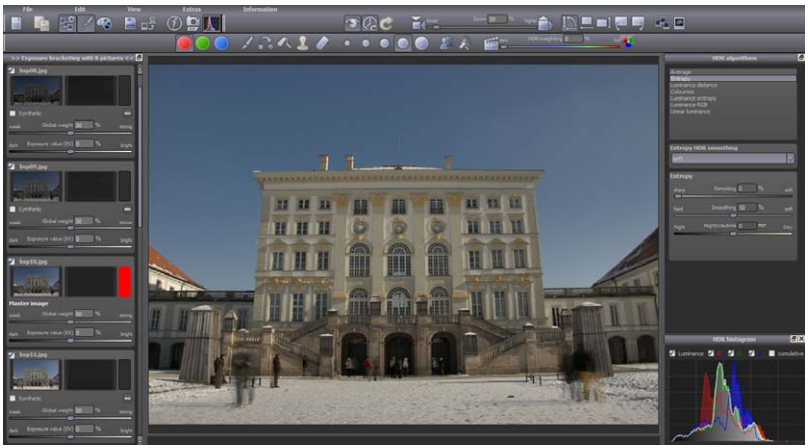
(Example series 14 – resulting HDR image)

The influence on the image of the exposure series with the classification colour red has been subtracted out of the river section shown in the example. Here the dark image of the exposure bracketing series has no influence anymore on the HDR result.

5.8 Manual Ghosting Image Correction shown on an example

The following example explains a frequently occurring problem how you can remove persons who moved within an exposure bracketing series by using the HDR painting mode.

Let us have a look on the example series 10 after loading without automatic ghosting image correction:



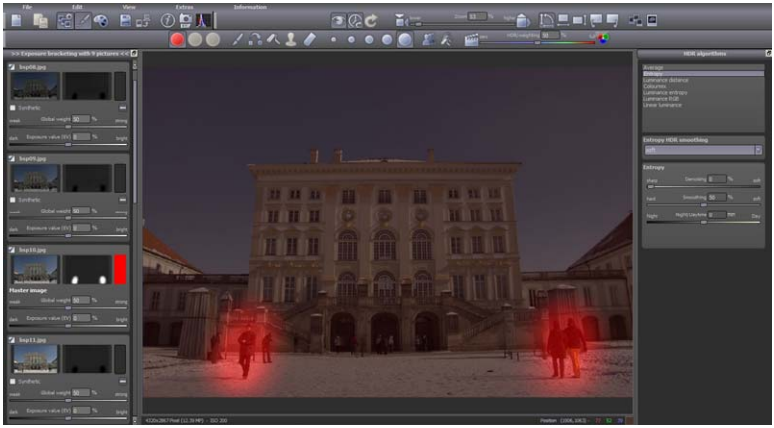
(Example series 10 – without ghosting image correction)

While having a look at the image you recognize directly the persons down on the left and the two persons down to the right as a ghosting image. We will remove it as follows:

- Select the image of the exposure bracketing series on the left, which Is most similar to the HDR image concerning brightness (most of the time is tthe master image or one above/below).

- Click on the button of the colour classification for this image, HDR projects will assign the red colour to this image and open the HDR painting mode automatically

– Select the „add“ function and stamping mode as well as the second largest paintbrush size

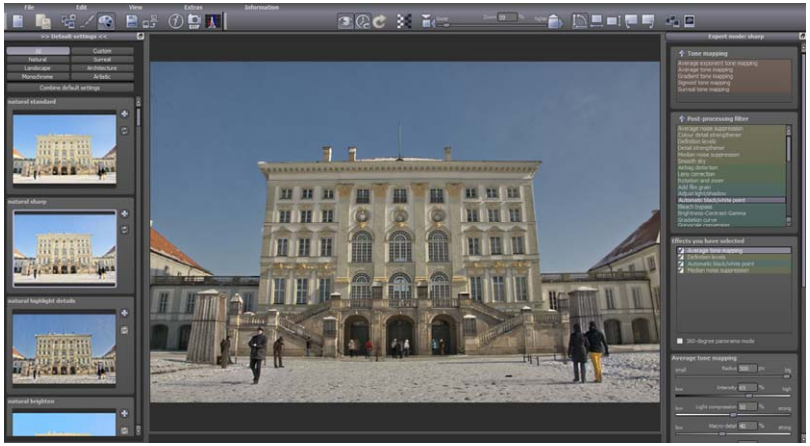


– Paint over the persons carefully by dotting and use the addition-paintbrush

– Select the „blurring“ function and the stamping mode as well as the largest paintbrush size

– Paint over the edge areas of the correction carefully by using the blurring paintbrush

– Switch to tone-mapping and select the presetting „naturally sharp“



(Example series 10 – with tone-mapping after manual ghosting image correction)

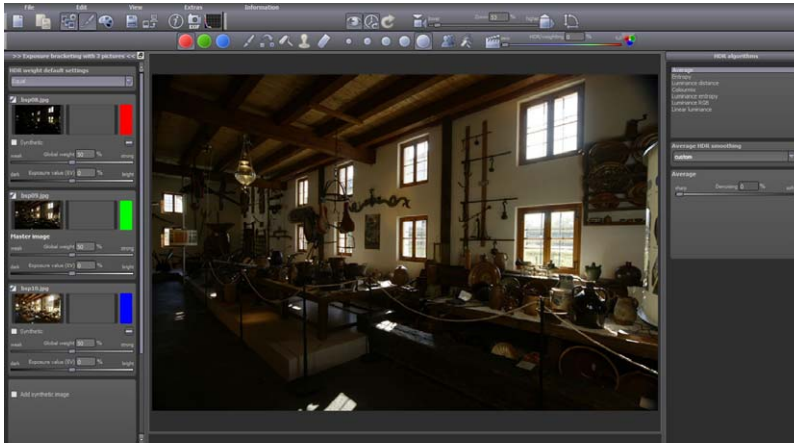
The ghosting image was corrected successfully!

Tip:
You get the best results by using the „dot“ method.

5.9 Manual HDR shown on an example

Manual HDR is a common method to create an HDR image. HDR projects equally offers a simple method in the HDR painting mode.

Each step during the process is shown in example series 8:



(Example series 8 – HDR algorihms average)

- Load the exposure bracketing series and select the average for the HDR algorithm

- Select the image sections and image of exposure bracketing series you want to display in your HDR result

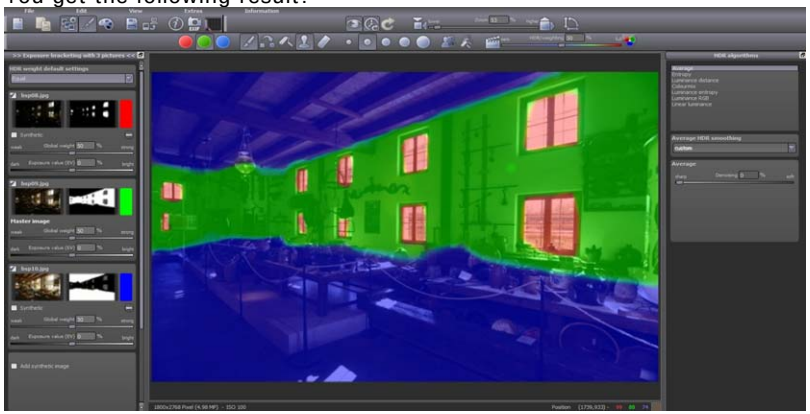
- The best painting takes place in the window of the darkest image of exposure bracketing series, these areas should be painted over with the red paintbrush in stamping mode

- The floor and the ceiling will be painted at its best within the lightest image of the exposure bracketing series, these areas should be painted with the blue paintbrush in the stamping mode

- The walls are painted at their best within the middle image of the exposure bracketing series, these areas should be painted with the green paintbrush in the stamping mode

- Optimize individual parts by using the blurring mode

You get the following result:



(Example series 8 – manually painted weightings)

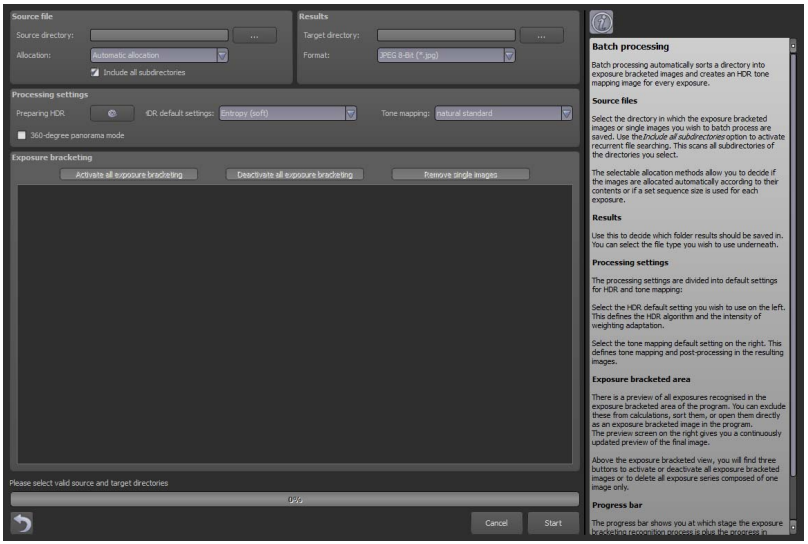
(Example series 8 – HDR final result of the manually painted weightings)

In the image above you can see the painted weightings of the individual images of the exposure bracketing series. The windows appear in red, the walls in green as well as the floor and ceiling in blue, representatively to the individual images of the exposure bracketing series.

In total the HDR result in the image above shows a better result in the floor and ceiling area as well as the window.

6. Batch Processing

The batch processing can be found by using the menu „extras“ or the corresponding keyboard short cut.



Separated in the following sections

- Source Data
- Output Data
- Processing Settings
- Exposure Bracketing Series
- Progress Bar

as well as in the dialogue above the buttons „set back to standard values“, „cancel“ and „start“.

6.1 Source Data

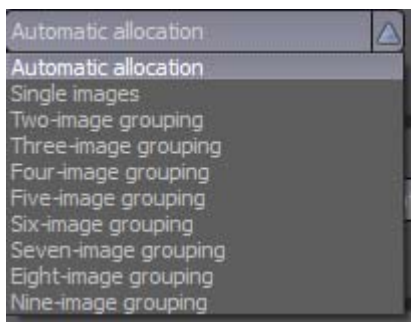
Start with the selection of a source file, where the single images (HDR from a single image) and/or the exposure bracketing series are located. These data can be mixed, which will be arranged by the exposure bracketing identification.

You can search for images by using the check box „involve all sub directories“ in the selected file as well as in all sub files (recursive file search).

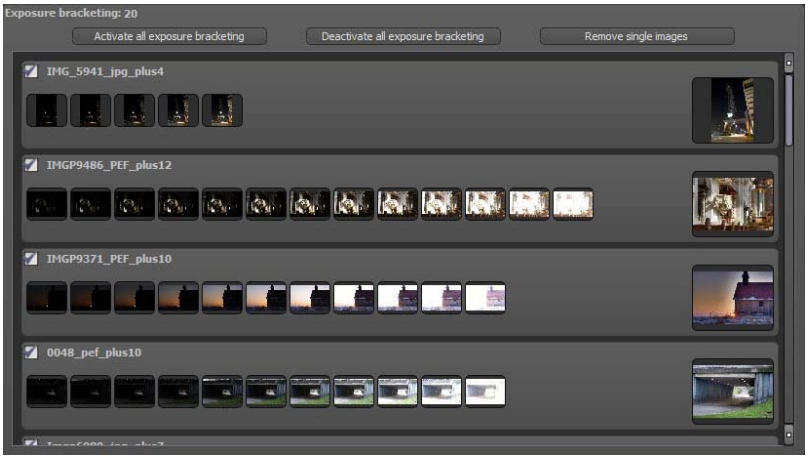
Tip:
Please take under consideration, that a search through files and sub Files can be time consuming. We don´t recommend to select “C:\”.

6.1.1 Classification / Automatic Identification of Exposure Bracketing Series

The classification and automatic identification of exposure bracketing series realizes the whole process of image sorting for you. Thus you can select between different modes:



Automatic classification
The automatic classification loads all images and search for the images, which belongs to an exposure bracketing series because of their image content. Here the correlated brightness and image congruence are considered and lead to a very good automatic identification.



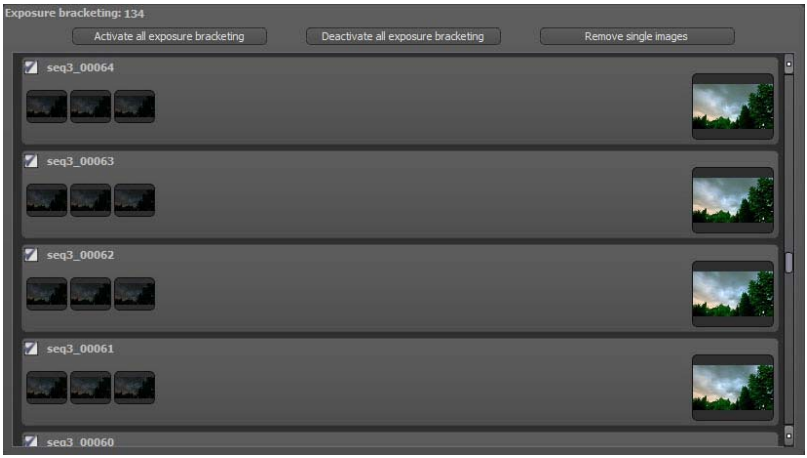
(Example series – automatic classification)

As shown in the image above, HDR projects has detected and classified 20 exposure bracketing series of the example material. (The individual elements of the exposure bracketing series areas will be explained in chapter 6.4)

Single images
The option „single images“ arranges every image in an exposure bracketing series. This mode is suitable for the processing of the sequences of images, created e. g. out of a shooting.

2-images up to 9-images arrangements
Choose this option if you have taken HDR movies or if you are sure, that only exposure bracketing series with the same amount of images per series are in your file.

The file names of the final images will be created automatically, so that you are able to use the processed images in a video editor.



(Example of a 3-image arrangement)

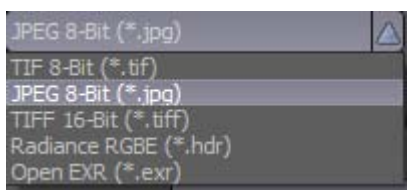
In this example the present image sequence with 402 images in 134 exposure bracketing series has been allocated to three images.

6.2 Output Data

In the output data section it is defined, where the final images of the batch processing will be saved. Select the corresponding file by using the button „select destination folder“ or enter the the destination folder directly in the text box.

6.2.1 Saving Formats

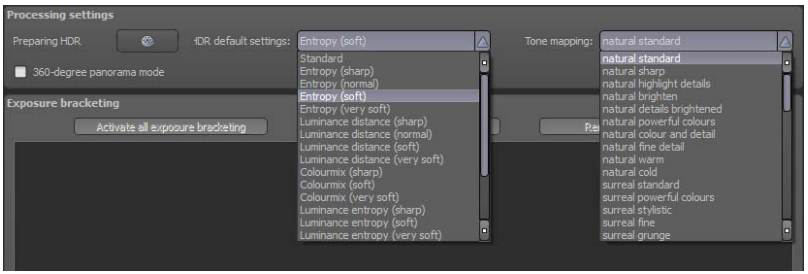
You can select out of five formats to save your final images of batch processing:



There are two 8-bit (LDR) formats in .jpg and .tif as well as three 16-bit (HDR) formats available. Jpg images are saved in the highest quality possible and .tif images are saved uncompressed and without any losses.

6.3 Processing Settings

Select the presetting in the processing settings for HDR creation as well as for tone-mapping. This will be valid for all exposure bracketing series in batch processing.



HDR Presettings
The HDR presettings offers for each HDR algorithm 3-4 presettings. Select the required presetting out of a list.

Tone-Mapping
The tone-mapping presetting is a list of all tone-mapping presettings out of the tone-mapping/post-processing area. Here you can find all of your own selected presettings. Hence you can prepare and use your own special presetting (as selected in the example of the image above).

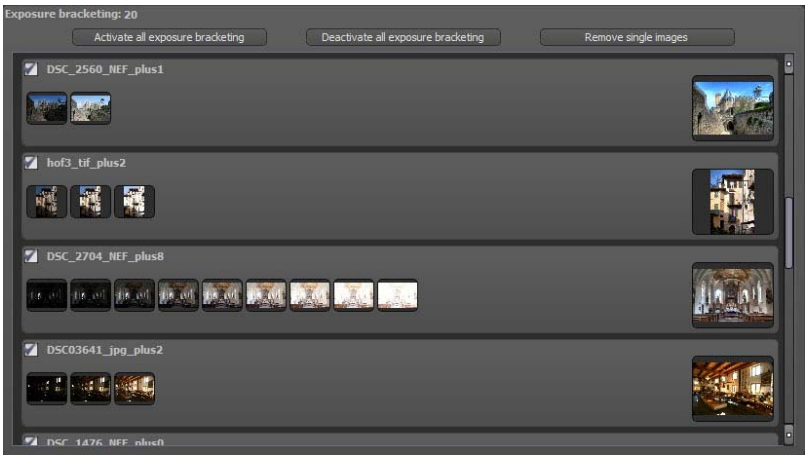
Once you change the HDR presetting and tone-mapping, all display images of the exposure bracketing series will be recalculated again, so that you have always a real display of the result.

HDR preparation
The HDR preparation opens the dialogue (under Windows conditions) to set the loading option like colour space, blurring, image alignment, etc.

A Macintosh opens the dialogue already before the batch processing window because of the system.

6.4 Display of Exposure Bracketing Series

The display of the exposure bracketing series shows information about the exposure bracketing series found:



In the display above you can find the number of assigned exposure bracketing series. Directly under this section are three buttons for the global (de)activating of exposure bracketing series.

Activate all exposure bracketing series
Activates all assigned exposure bracketing series for calculation - this is the default condition.

Deactivate all exposure bracketing series
Excludes all assigned exposure bracketing series from calculation

Remove 1-image exposure bracketing series
Removes all exposure bracketing series consisting out of one image from the display and calculation. This option can be used, in case of a misinterpretation regarding to a ve3ry light or very dark image during classification.

6.4.1 Classification Exposure Bracketing Series

Each exposure bracketing series found has numerous functions are available.

You can exclude or allow an exposure bracketing series from calculation by using the check box above on the left side. The file name will be created automatically to save the image:

In the example DSC_2704_NEF_plus8, this means that the first image is named DSC_2704, the image format is .NEF and „plus8“ is the original image plus 8 other images, resulting to a 9-image exposure bracketing series.

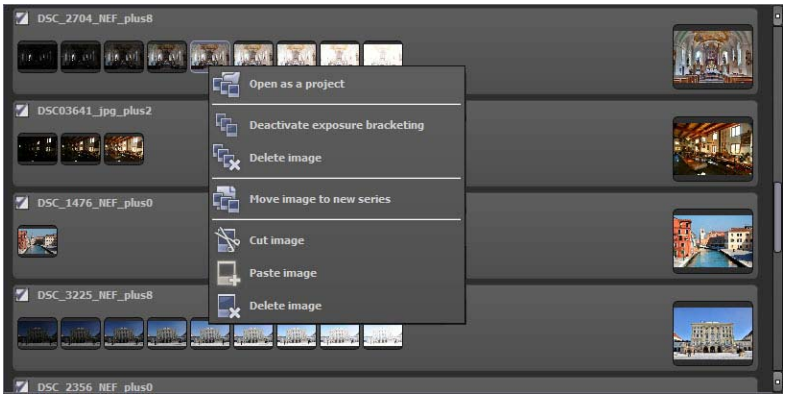
(Preview display of an exposure bracketing series in batch processing)

If you move your mouse cursor over a desired mini-display in the exposure bracketing series, you get a larger preview display.

For the HDR/tone-mapping preview on the right side you get a large preview display of your image.

Tip:
All preview displays will be recalculated again after every single modification in your settings. You can directly trial these HDR settings as well as the tone-mapping settings.

Besides it is possible to open a context menu by using the right click out of an exposure bracketing series and the images of an exposure bracketing series, which contents the following functions:



open as a project
opens the exposure bracketing series as a project in HDR projects. You can use the batch processing as a browser for exposure bracketing series too.

(de)activate exposure bracketing series
(de)activates the exposure bracketing series for batch processing

Remove exposure bracketing series
Removes exposure bracketing series out of batch processing

Move image into a new series
Moves the selected image (example image 5 of the series) into a new exposure bracketing series.

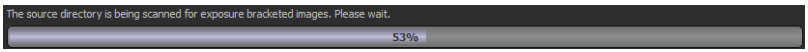
Crop image
Copies the image of an exposure bracketing series to the cache

Insert image
Insert image out of the cache into the exposure bracketing series attention: only images with an identical image resolution can be inserted in an existing exposure bracketing series.

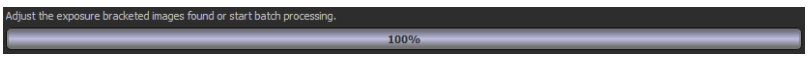
Delete image
Removes the image out of the assigned exposure bracketing series.

6.5 Progress Bar

The progress bar informs about the progress within the exposure bracketing series classification. This procedure can vary depending of the number of classified images.



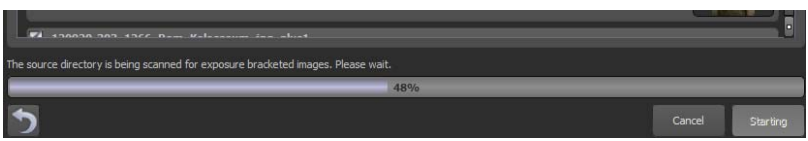
After finishing the current activity, you find a notification above of the progress bar, about the next step which should be made.



6.6 Preferential Start Instruction

The „start“ button below on the right side has a special function – the preferential start instruction.

If you already set all settings before selecting the source data, you can already use the start instruction while classification of the exposure bracketing series. HDR projects starts automatically the batch processing after finishing the classification of exposure bracketing series.

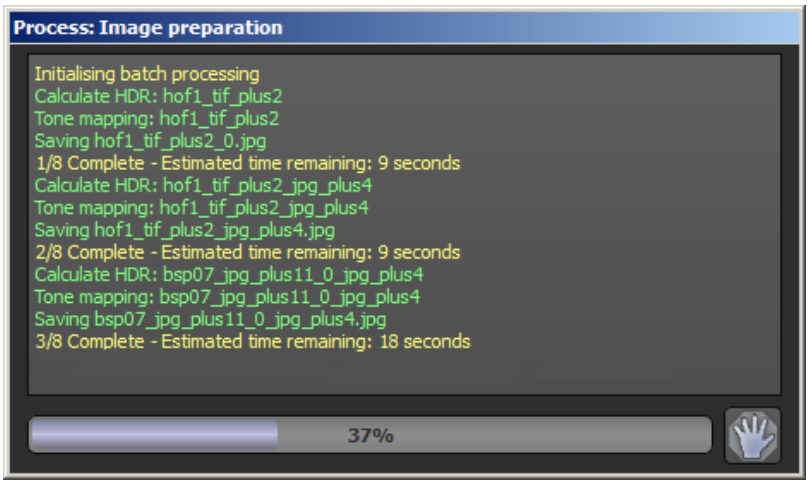


(Preferential start instruction in batch processing)

As seen in the example above, the „start“ button, will be marked as already pushed and the calculation starts automatically, as soon as the progress reaches 100% in classification of exposure bracketing series.

6.7 Display during Calculation

During batch processing you receive a detailed output of the calculation process.



The information per image in batch processing contents HDR calculation, tone-mapping as well as image saving. Additionally the remaining calculating time is given as well. This time is an estimation, which results out of the needed time of the already processed exposure bracketing series.

7. Example of Exposure Bracketing Series

You find on the DVD- version of HDR projects two additional data files. These files contain the example of exposure bracketing series as well as completed project data, where working processes alignment, manual ghosting image correction and adaptation of tone-mapping/ post-processing were executed.

- DVD: \\Series\01 to DVD: \\Series\20
- DVD: \\projects\01 to DVD: \\projects\20

We recommend to copy these data on your hard drive, if you want to work with these data, because loading will be faster by using the data from your hard drive.

The HDR project Team hopes that you enjoy the program!

Hotline / Support
In case of questions concerning installation, problems or failures concerning this software product, please contact our **FRANZIS Customer-Support-Team**

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via Telefax:+49 (0)0180 300 26 45 (0,09 EUR per minute German landline. Network, mobile can be different)

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- Operating System of your PC
- Configuration of your PC and all peripheral devices

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