Contents

The following tools are used to correct the colorimetry:

ANCHORS

This tool regoups the global color correction and color corrections of individual images functions. Enabling it displays:

- Settings of the tool, in the tools zone:

• Correction anchors, on each image on the panorama editing zone:

Color modes

No Correction

In this mode, the mechanism to equalize the brightness or color of pictures against each other is not used. In fact, in certain cases, the color correction is not needed. For example, when the picture is shot in manual mode. Warning, surprises could arise with the manual mode (automatic ISO, light conditions could change due to passing of a cloud, etc.).

LDR Correction (standard correction)

This mode is active by default. The purpose of this adjustment is to align the small differences in brightness, contrast and color in the series of pictures that make up the panorama.
For the most part, this is the correction that you will use.

HDR Correction

This mode is used when a subject requires a large margin of exposure. The algorithm is different from the LDR mode and allows for the harmonization of panoramas when the differences in brightness are much larger. This method of correction directly calculates the luminance for each pixel; Autopano no longer works with the pixel values, but works with the real values of the scene. In practice, you will not see the difference on a scene with low dynamics but everything changes when the exposure differences are very large.

When passing to the HDR mode, the produced image often has a very large dynamic and we need to reduce this dynamic to have something that is displayable. The levels are available in the HDR mode and they let you make certain global changes on the panorama in order to reduce this dynamic.

Color correction anchors

The correction anchors are used for seamless image stitching (colour, exposure, contrast, etc.).
An anchor represents how the corresponding image will be changed by the color correction algorithm.

Type of anchors

- **Reference image:** It is the reference for the correction of other images. The anchors of the other images will therefore be influenced by the contrast, exposure and tone of this anchor.

- **Adjust gamma:** Only corrects only the gamma.

- **Adjust exposure:** Only corrects the exposure.

- **Adjust gamma and exposure:** Corrects the gamma and the exposure.

- **Adjust gamma and color tone:** Corrects the gamma and the color tone.

- **Adjust exposure and color tone:** Corrects the exposure and the color tone.

- 📊⚡
  - 🔴 **Adjust gamma, exposure and color tone:** Corrects the gamma, exposure and color tone.

To change an anchor, right click on the image to open a contextual menu so that the desired anchor can be selected from the list.

Contextual menu

A right click on the image opens the contextual menu:

- The right part lets you change a single anchor (the anchor for the selected image).
- The bottom part lets you change all of the anchors at the same time (a right click on an anchor opens only this part of the contextual menu).
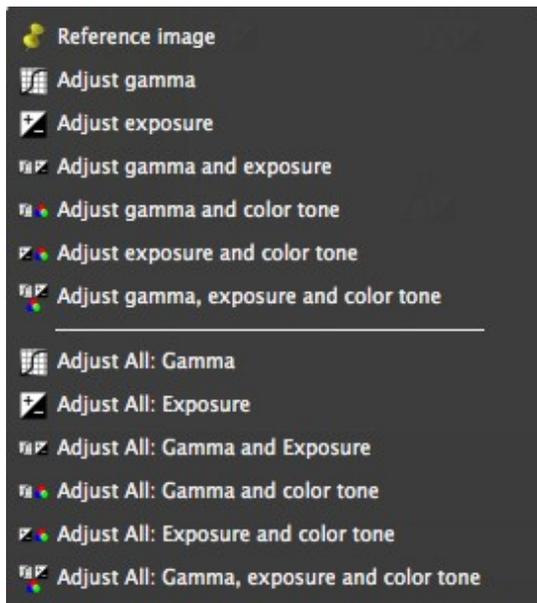
Settings

Optimize by layers
If your panorama has **layers** (brackets, etc.), the changes will be applied to all the layers of the panorama.

Color level after update
The Level histograms will be adjusted according to changes

Optimize on any anchor change

Type of anchors   4

By default, this option is enabled to view the results after each change.
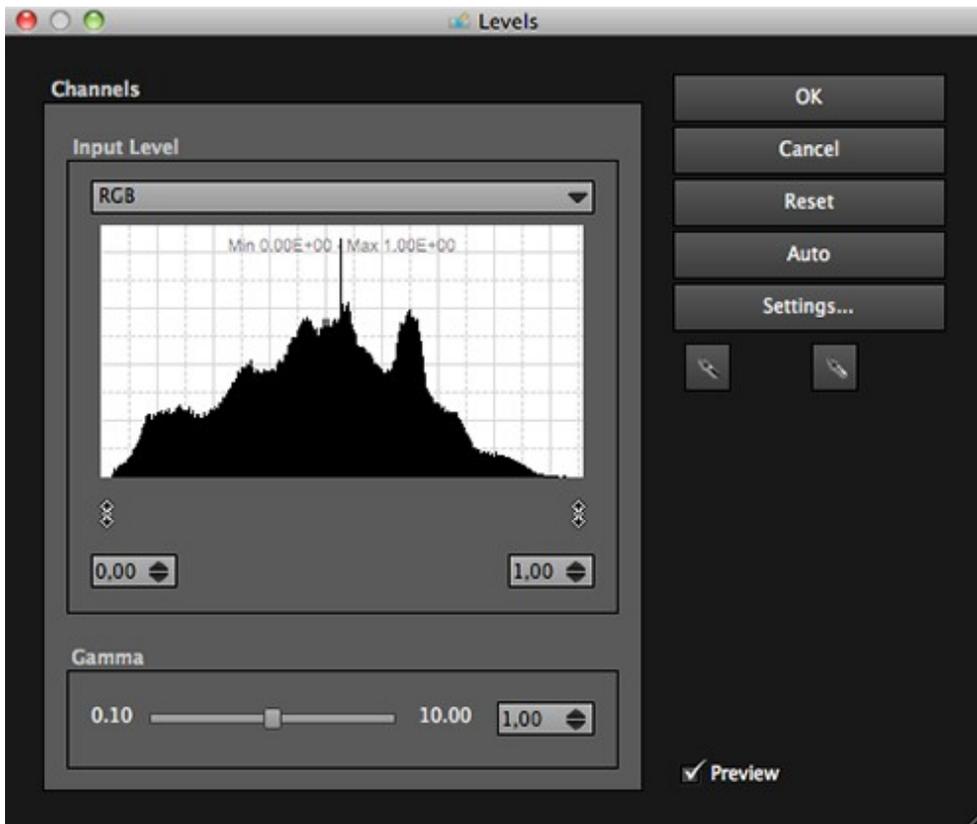
Optimize color
If the "Optimize on any anchor change" option is unchecked, clicking on this button will let you confirm the changes so that the result can be seen.

LEVELS

Levels

This window lets us adjust and change the entries and exits in terms of light intensity.

Input level

- Pull-down list: Lets you select the image layer on to which the histogram is to be displayed.
  - ♦ RGB: Displays the complete histogram (of all the layers).
  - ♦ Red: Displays the histogram for the Red layer.
  - ♦ Green: Displays the histogram for the Green layer.
  - ♦ Blue: Displays the histogram for the

Blue layer

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- Histogram:
  - ♦ Lets you view the current curves and amplitude, displayed as Min. /Max.
  - ♦ The sliders let you adjust the dark tones (black) and the light tones (white).

Gamma
The slider adjusts the contrast ratio of the selected channel.

Buttons

- OK: Enables the changes.
- Cancel: Undoes the changes.
- Reset: Resets the previous state of the histogram.
- Auto: Automatic correction.
- Settings...: Opens the Level Options window for automatic correction.
- Eyedroppers:
  - ♦ Black point: Lets you define the black
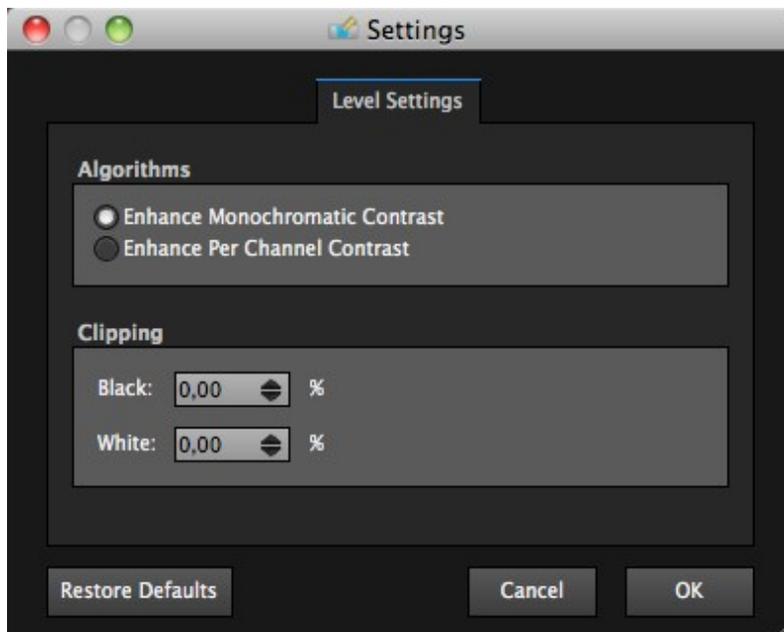
point value directly on your image.

♦ White point: Lets you define the white point value directly on your image.

Preview
Check or uncheck the box to show/hide the preview of the Level tool changes on the panorama.

Level Options

The window lets you set the applicable automatic correction mode via the Auto button.

Algorithms

- Enhance monochromatic contrast: Applies the Min and Max values of the RGB layer to maintain the balance of the tones in the separated layers.
- Enhance per channel contrast: Applies the Min and Max values for each layer separately, it could cause an imbalance of the colors and tones may disappear.

Clipping

- Black: Sets a tolerance threshold (in %) from the Min. value on the RGB layer or on separate layers according to the selected algorithm.
- White: Sets a tolerance threshold (in %) from the Min. value on the RGB layer or on separate layers according to the selected algorithm.

FUSION

Closely related to the use of a bracketed shooting, with this tool you can obtain a perfectly exposed panorama when mixing different exposures (also familiarly called HDR).

There is no real rule about the use and configuration of the Exposure fusion tool (based on images, the desired result, etc.), except that it can only be used with bracketed images.
This part of the documentation only describes the technical aspects of this tool.
For more information, see the page dedicated to its use: **Use the exposure fusion**

The tool is divided in 2 parts:

- The **Exposure weights** part allows to set the global exposure, and pixels weighting on both dark and light tones.
- The **Blend settings** part allows to view the fusion result depending on the setting defined, that lets check the settings to apply or not when rendering.

Note : Enabling this tool combines the activation of the Preview tool, allowing to view the final result before to process to the final rendering.

Exposure weights

Enable
Check this option to enable the fusion. This will display the fusion.
This curve represents the exposure of the fusion or the importance of each pixel in the final mixture according to its exposure. By default it is set at an average exposure target.

Exposure target
It lets you set the principal exposure value. Slide the bar until you reach the most important desired value (to the left for dark exposure, to the right for bright exposure).
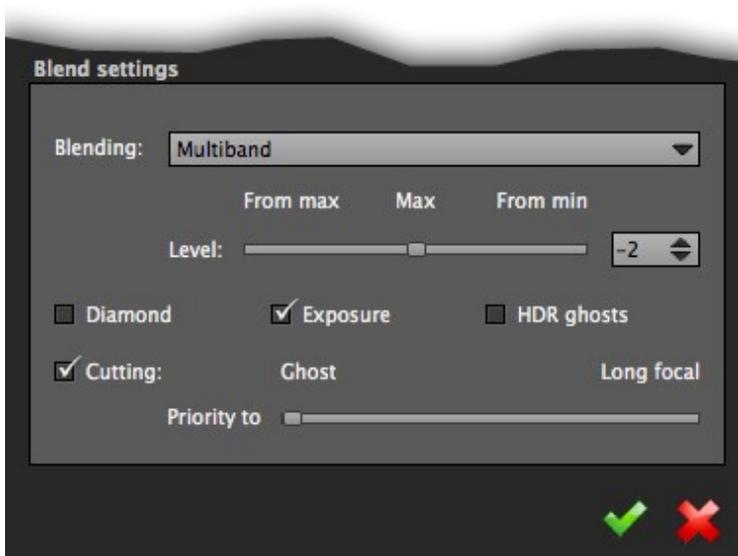
Dark enhancement
Lets you give more or less importance to dark exposure areas.
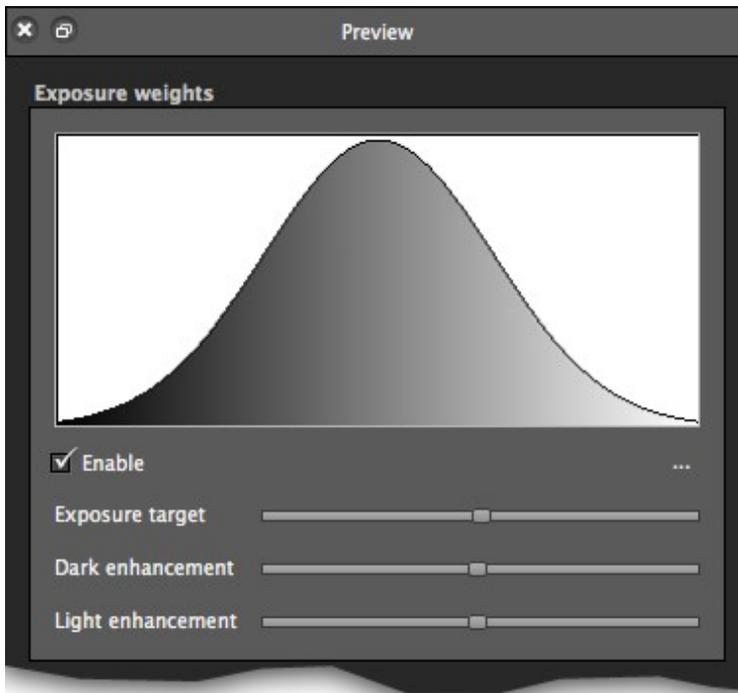
Light enhancement
Lets you give more or less importance to bright exposure areas.

Blend settings

- Blending:
  - ♦ None: For each position, the algorithm uses the pixel with the greatest importance according to the required weight.
  - ♦ Linear: The rendered pixels are the result of a weighted average of input pixels.
  - ♦ Multi-band: Lets you mix the average value (color trend) of the images while maintaining their details.
    - ◊ Multi-band level: Lets adjust the influence zone for each input pixel. Consult the following page **Understanding and using the rendering engine** for more information.

- Diamond: The pixels in the centre of the images are more important than the pixels on the edges of the images.

- Fusion: enable/disable the tool.

- HDR ghosts:
    - ♦ Avoid mixing the superimposed pixels that do not have the same information and that come from different levels (moving object on the same bracketed image).
    - ♦ At least 3 different information (layers) are needed to determine the information to exclude. It is advisable to get more for a greater reliability of matches (warning, a layer that is entirely over-exposed or under-exposed can not be used).

- Cutting: Lets define the cutting choices of the blender according to the desired result (ghost removing or long focal preservation) thanks to the priority's definition slider:
    - ♦ Ghost: (default) all moving objects will be retained or removed according to their positions in the overlap areas. The anti-ghost himself makes this choice.
    - ♦ Long focal: Used to promote the details of the images of long focal length.

      The left side of the slider bar enables the Ghosts removing at 100% and makes the Long focal preservation inactive.
      The right side of the slider bar enables the Long focal

preservation at 100% and makes the Ghosts removing inactive.
Move the slider bar allows to play on both settings (ghost removing or long focal preservation) at the same time, ie giving more priority to one of both settings leads to a lower priority for the other.

Apply

Click on this button to confirm the modifications or push the Enter button.

Cancel

Click this button to ignore the changes and return to the previous state.

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