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The settings changed in the Group settings are only valid for the current group.

These settings are not saved for other groups; each group can be configured independently.

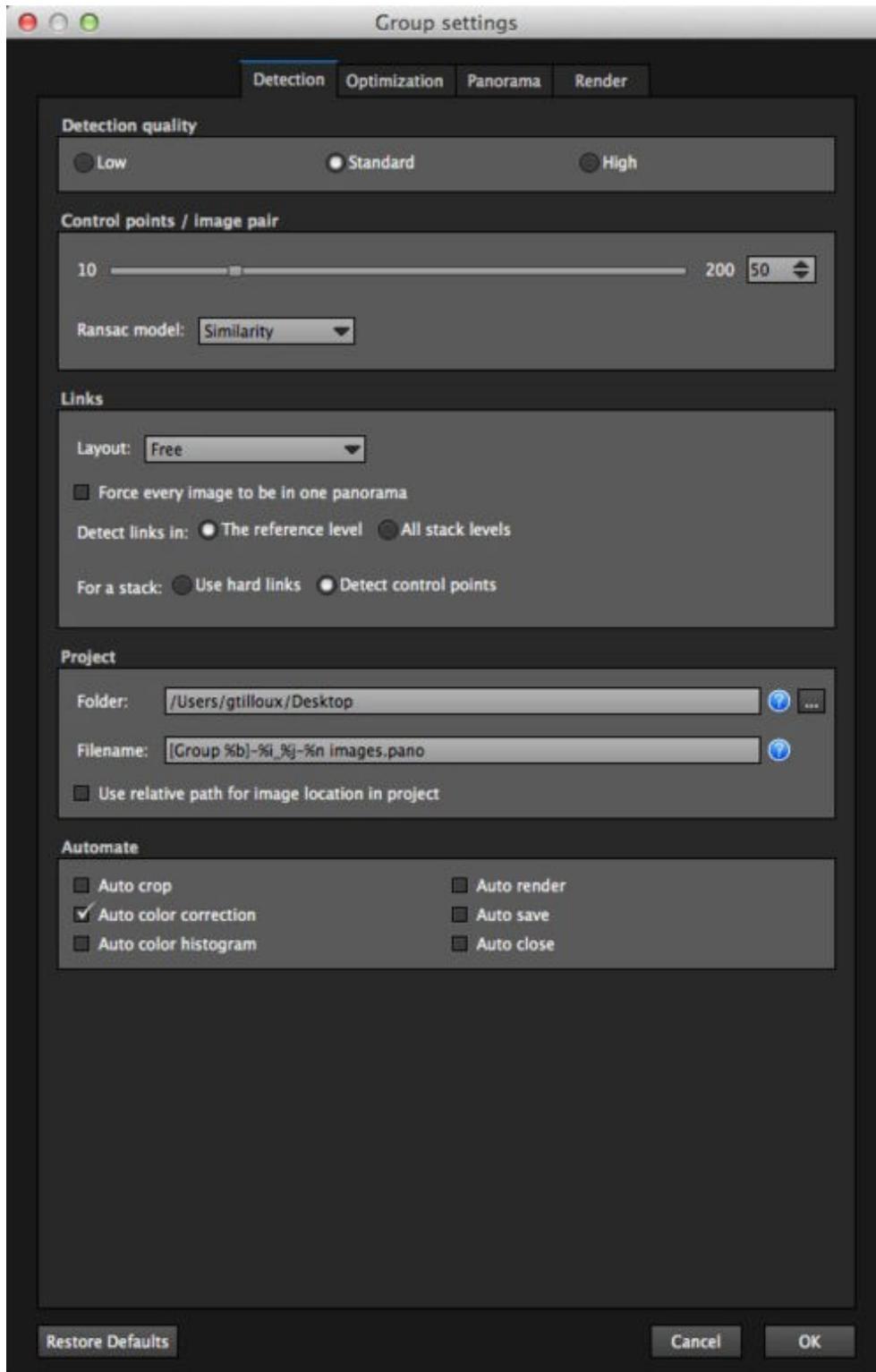
DETECTION TAB

These options affect the way in which the pictures will be linked to each other. The detection step corresponds to when Autopano analyzes the images and assigns links to them with the use of significant points called control points.

If you make a mistake, you can use the "Restore defaults" button.

Detection quality

- Low: Good compromise between the quality of the control points and the detection speed.
- Standard: (default) Increases the density of the points at the expense of the detection speed.
- High: Useful if one, several or all images are ignored. Very slow, reserved for desperate cases.



Control points / Image pair

- Affects the number of control points exported to Panotools as well as on the detection quality. 50 (default value) seems to be the best choice in the majority of cases.
- **Ransac** model: Lets you to select the detection algorithm.
 - ◆ Similariy:
 - ◆ Homography:

Links

- Layout:
 - ◆ Free: (default) Autopano calculates all the possibility of links between the images. This does not exclude the false links that could be created if your images contain many similarities (images linked by their similarities

but in reality are not close to each other).

- ◆ Single row or column: This can be used if the images were taken consecutively and on a single row. This method avoids the false links caused by the similarities of images.
- ◆ Templates: Here you will find the templates that were previously saved with the **Save as model** feature.

- Force every images to be in one panorama: All the group images will appear in the panorama. This option is useful when one or more pictures are ignored in certain panoramas. This will not improve the quality of detection but will

force the image(s) to be reflected in the resulting panorama even if these images have no connection with the images of the panorama.

- Detect links in:
 - ◆ The reference level: (default)
Looks for all the possibilities of links between the images with the same bracket level.
 - ◆ All stack levels:
Looks for all possibilities of links between the images.

- For a stack:
 - ◆ Use hard links: Lets you precisely superimpose the different images of the same stack without assigning

control points to them.

- ◆ Detect control points: This uses the control points as a reference to superimpose the different images in the same stack.

Project

- Folder: The ... button lets you select the directory of your choice.
- Filename: Name of project file (.pano). Click on the  icon for a description of the symbols that make up the models (syntax) of the file name.
- Use relative path for image location in project: This is useful if you want to transfer the completed project to a third support (USB key, hard disk, CD, etc.) so that it can be opened on another machine.

Automate

- Auto crop: automatically frames the panorama.
- Auto color correction: (default) Automatically standardizes the panorama's colorimetry.
- Auto color histogram: Automatically applies a color level.
- Auto render: Automatically launches the rendering.
- Auto save: Automatically saves the project (.pano).
- Auto close: This automatically closes the project window. We recommend that you check ?automatic save? when using this option.

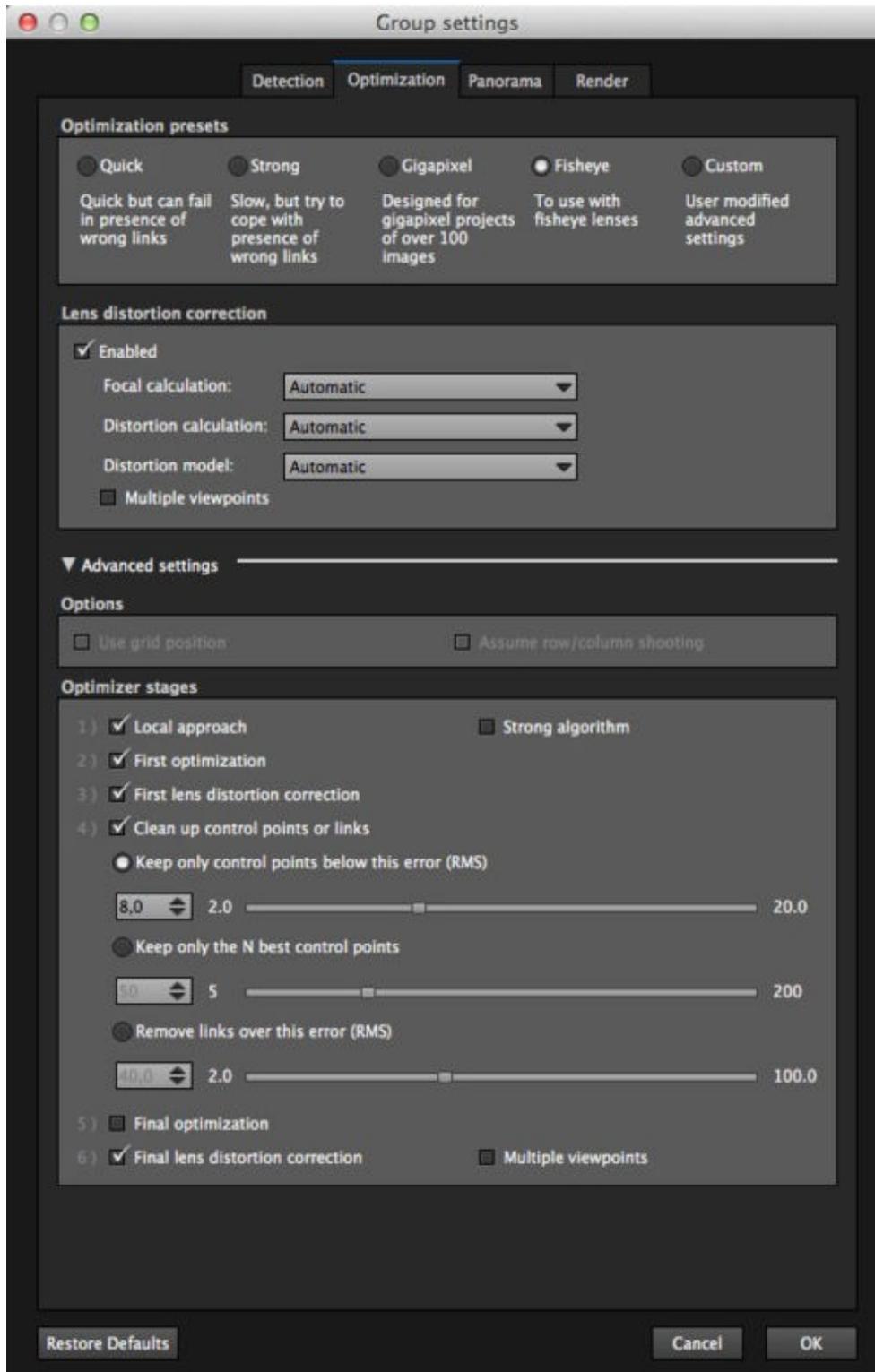
OPTIMIZATION TAB

During the optimization step, the images are positioned based on their control points that are calculated during the detection.

Autopano offers 4 optimization presets adapted to your needs without having to change them yourself.

Autopano works perfectly with default settings and the hazardous changes of these options may damage the operation of Autopano.

If you make a mistake, you can use the "Restore defaults" button.



Optimization presets

These presets correspond to the pre-configurations of different optimization stages that can be viewed in ?advanced settings?.

By default, the most appropriate profile is automatically selected depending on the content of the group of images.

- **Quick:** Simple optimization. The result may be disappointing if the panorama contains a lot of images or bad links.
- **Strong: (default)** This is the best choice in the majority of assemblies. It has a good calculation time/assembly quality compromise.
- **Gigapixel:** Suitable if your panorama contains a large number of images (more than 100 images).
- **Fisheye:** Select this profile if your image was taken with a fisheye lens.
- **Custom:** This is enabled when you manually change the parameters and they no longer correspond to a profile.

Lens distortion correction

- **Enabled:** Turns

distortion
correction to be
applied to each
photo of the
panorama.

- Focal calculation:
Sets the method for
calculating the
focal length.
 - ◆ Automatic:
(default)
Autopano
decides by
itself what
kind of
focal
calculation
to apply,
depending
on the
content of
the group
of images.
 - ◆ Force
different:
Allows to
force a
different
focal
length for
each photo
of the
panorama.
Useful if
the
panorama
contains
photos with
different
focal
length, or if
the
focusing
has moved.
 - ◆ Force
identic:
Allows to

force an identical focal length for each photo of the panorama.

- Distortion calculation: Sets the method for calculating the distortion of the lenses.
 - ◆ Automatic: (default) Autopano decides by itself what kind of distortion calculation to apply, depending on the content of the group of images.
 - ◆ Force different: Allows to force a different distortion calculation for each photo of the panorama. Use in case you change your lens during the shot (if the group contains photos taken with

different lenses).

- ◆ Force identic:
Allows to force an identical distortion value for each photo of the panorama. Use when shooting was made with the same lens.

- Distortion model:
Sets the distortion model of the lens(es).

- ◆ Automatic: (default)
Autopano decides by itself what kind of calculation to apply, depending on the content of the group of images.
- ◆ 1st order: common distortion, Barrel distortion or Pincushion distortion
- ◆ 2nd order: more complex distortion, Barrel

distorsion,
Pincushion
distortion
or mix of
Barrel/Pincushion
(mustache).

- ◆ 3rd order:
Further
complex
distortion.
Few lenses
still get this
type of
distortion
(not very
useful in
practice).
- ◆ 1st order +
optical
axis:
commom
distortion,
Barrel
distorsion
or
Pincushion
distortion +
calculation
of the
optical axis
(the
difference
between
the center
of the lens
and the
center of
the sensor).
- ◆ 2nd order +
optical
axis: more
complex
distortion,
Barrel
distorsion,
Pincushion
distortion
or mix of
Barrel/Pincushion
(mustache)

+ calculation of the optical axis (the difference between the center of the lens and the center of the sensor).
◆ 3rd order optical axis:
Further complex distortion. Few lenses still get this type of distortion (not very useful in practice) + calculation of the optical axis

- Multiple viewpoints:
Tolerates variations in the nodal point and detects changes in viewpoint to provide a satisfactory result, whatever the shooting conditions.

Options (Advanced settings)

- Use grid position:
This is only available if you

have imported pictures taken with the help of a pan head via a Clauss or Papywizard import plug-in. This option re-uses the coordinates provided to pre-position the images.

- Assume row/column shooting: Active for panoramas coming from a Gigapan head. This method requires high precision in the shooting matrix.

Optimization stages

(Advanced settings)

1) Local approach:
Lets you pre-position the images locally.

Strong algorithm: Intelligently validates the local approach calculations. This changes in the assembly if the calculations seem wrong (false links).

2) First optimization:
Looks for the ideal position of each image simultaneously.

3) First lens distortion correction: Corrects lens distortion (very useful for short and medium focal lengths).

4) Clean up control points or links:

Keep only control points below this error (RMS):
Useful in cases where quality counts.

Keep only the N best control points:
Useful in cases where only the number of control points per image count.

Remove links below this error (RMS):
Useful in

cases
where the
quality of
the links
counts.

5) Final
optimization: This
is the same main
optimizer as in step
2 that is retrieved
(if it has not
already been) or
retrieved again (to
account for
deletions of step 3).

6) Final Lens
distortion
correction: Corrects
lens distortions
again if Step 4 was
performed
(cleaning
links/control
points).

Multiple
viewpoints:
Tolerates
variations
in the
nodal point
and detects
changes in
viewpoint
to provide
a
satisfactory
result,
whatever
the
shooting
conditions.

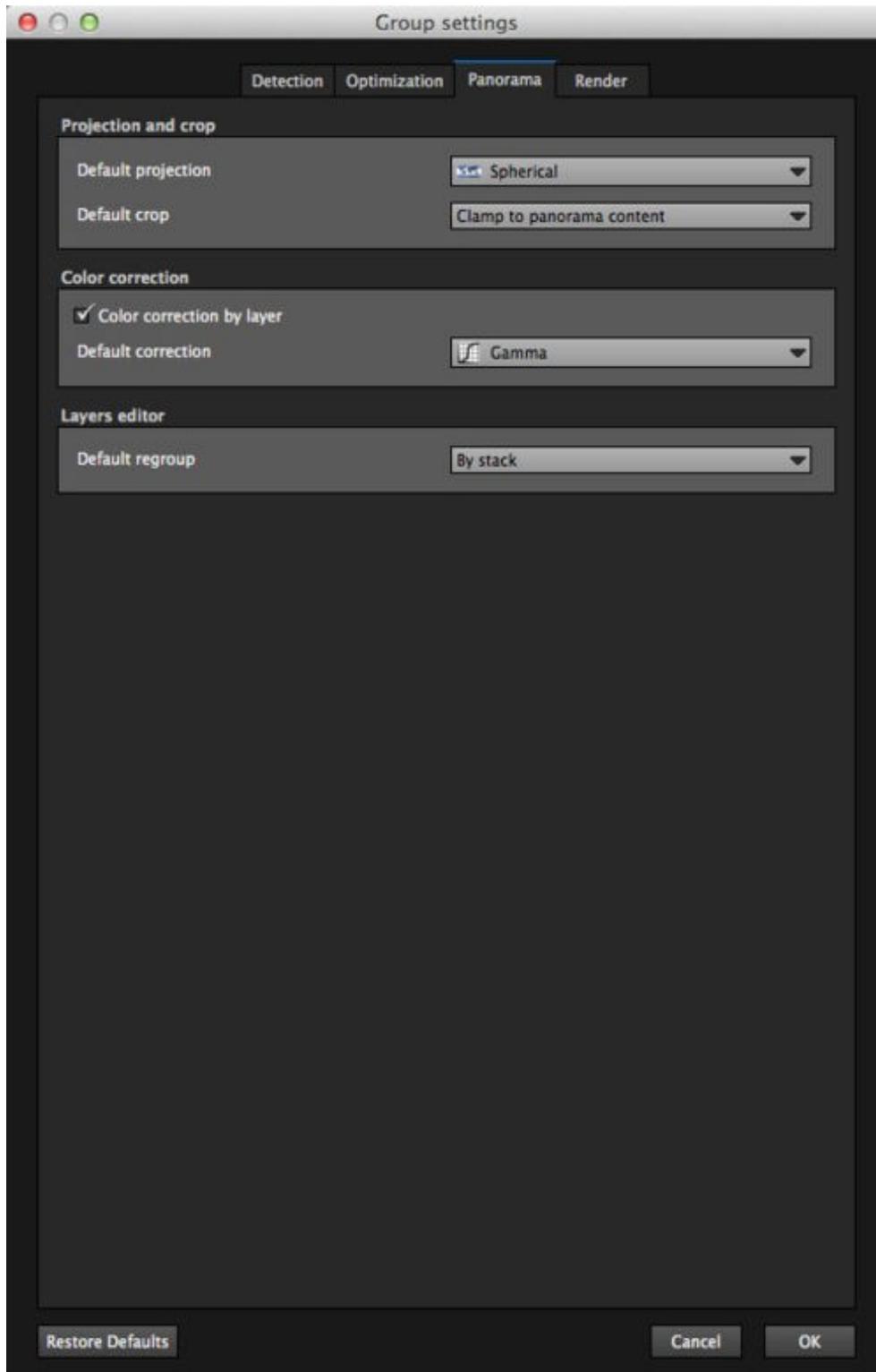
PANORAMA TAB

These properties are applied to the panorama just after the assembly.
If you make a mistake, you can use the "Reset default values" button.

Projection and crop

- Default projection:
Lets select the default type of projection by either selecting the automatic option or to force one of the projection available.
 - ◆ Automatic:
Automatically chooses the most suitable projection based on the panorama's FOV.
 - ◆ Other projections:
Lets force the projection selected there.

- Default crop: Lets you select the default crop of the panorama.
 - ◆ Clamp to panorama content:
The panorama will have a size that corresponds



to the span of the area where the pixels are actually found.

- ◆ Maximum projection range: The panorama will have a size that corresponds to the projection range. For example, this option is useful to generate 360°x180° as well as partial panoramas that do not cover the whole span.

Color correction

Lets you choose the default type of color correction when the auto color correction option is activated.

- Color correction by layer: This limits the color correction to each group of images within the panorama.
- Default correction:
 - ◆ Gamma: Only corrects the

- gamma.
- ◆ Exposure:
(default)
only
corrects the
exposure.
- ◆ Gamma
and
exposure:
Corrects
the gamma
and
exposure.
- ◆ Gamma
and color
tone:
Corrects
the gamma
and tones.
- ◆ Exposure
and color
tone:
Corrects
the
exposure
and tones.
- ◆ Gamma,
exposure
and color
tone:
Corrects
the gamma,
exposure
and tones.

Layers editor

- Default regroup:
This lets you chose
how to group the
images in the
Layers editor of
the panorama
editor. You can
rearrange them
later if needed.

RENDER TAB

The ?Render? tab is in all respects identical to the one found in the general settings or in the editing window. It is a default parameter for the rendering options that will also be visible and modifiable at the time of the final rendering.

If you make a mistake, you can use the "Restore defaults" button.

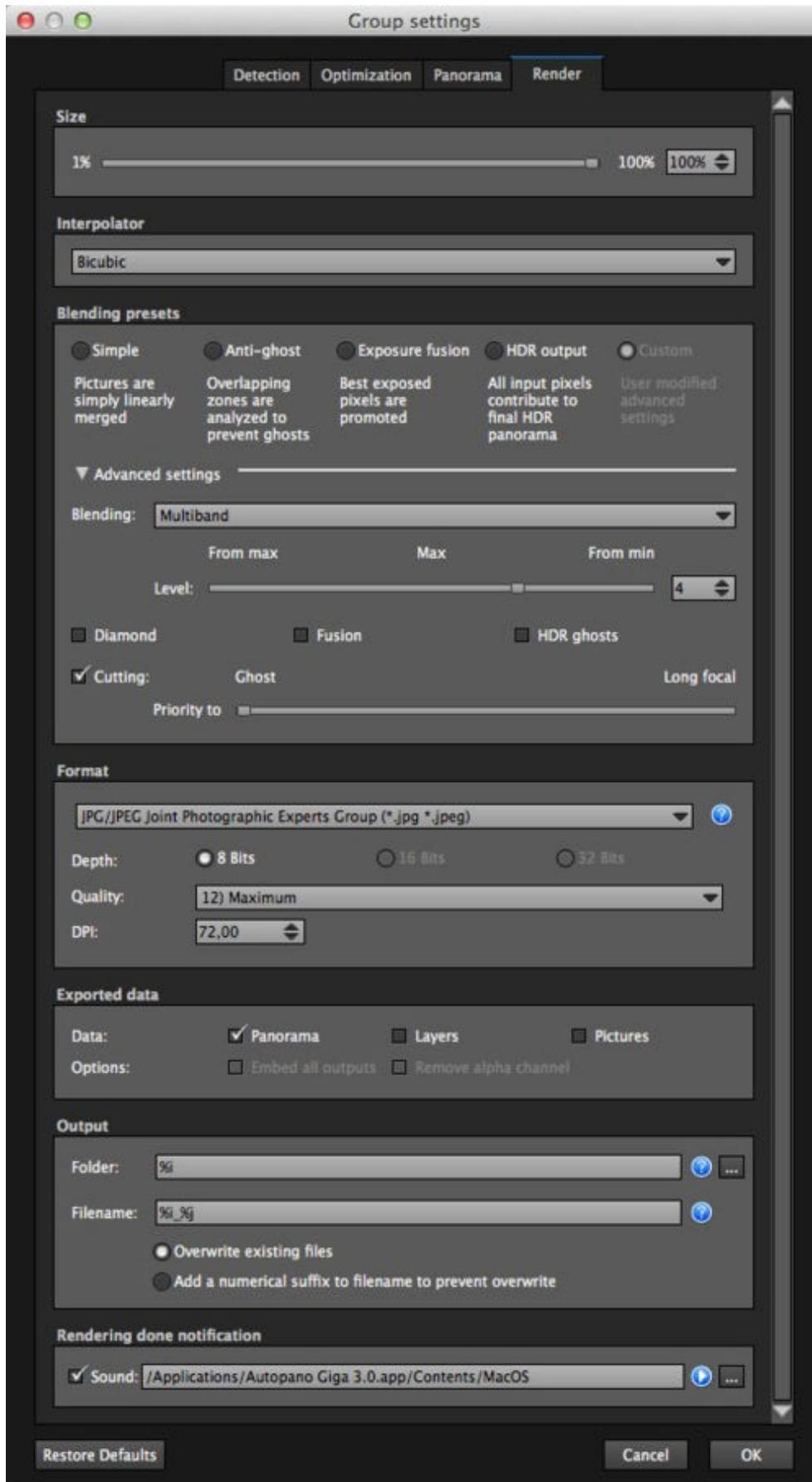
Size

This lets you adjust the panorama's export size in percentage of the maximum size.

Interpolator

The interpolator is used to project the pixels of the source image on the panorama. Its quality often depends on the sharpness of the panorama.

- Nearest Neighbour: Reserved for testing, because of the numerous and very visible artifacts created. In return, this is the fastest.
- Bilinear: This is a correct quality/speed ratio choice.
- Bicubic: (default) Use it if you do not know. The difference with the bilinear is almost imperceptible to the naked eye but can be seen in the lines with strong contrasts. Its default use is recommended.
- Bicubic sharper: This is the same



thing as the bicubic but it is stronger (the fortification level corresponds to the same settings as in Photoshop when changing the size of an image).

- Bicubic smoother: This is the same thing as the bicubic but it is softer (the softening level corresponds to the same settings as in Photoshop when changing the size of an image).
- Spline36: This powerful method of interpolation is to be used when extreme or high post-rendering is necessary. The difference with the bicubic mode is not noticeable to the naked eye.
- Spline64: Works in the same way as the Spline36, but stronger, slower and usually better (experiment to sample results).

Blending settings

The purpose of the blender is to combine the overlapping zones without it being noticeable, to obtain a perfect stitching of the panorama's images. Autopano offers 4 optimization presets adapted to your needs without having to change them yourself.

These profiles correspond to the pre-configurations that can be seen in the ?advanced settings?.

- Simple: This is fast but it is possible that defects are seen where the areas overlap.
- Anti-ghost: Conserve the image's strong characteristics (stops, lines, curves) when mixing while automatically removing objects that have moved.
- Exposure Fusion: To be used if the panorama was created with a bracket shot. Keeps the best of different exposures.
- HDR output: To be used by users who wish to create a .hdr format file in order to create post-production or special effects.
- Custom: This is enabled when you manually change the parameters and they no longer correspond to a preset.

Advanced 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. Consult the following page

Understanding and using the rendering engine for more information.

Format

Lets you choose the output format, encoding, compression quality and resolution.

Exported data

Lets you define how and what data needs to be exported:

- Data:
 - ◆ Panorama:
Lets you export the panorama.
 - ◆ Layers:
Lets you export the image groups.
 - ◆ Images:
Lets you export the images used to create the panorama.

- Options:
 - ◆ Embed all outputs:
Incorporates all the data in the same file.
 - ◆ Remove Alpha channel:
Deletes the

alpha
channel of
the
exported
files.

Output

- Folder: Lets you specify the file in which the image will be saved.
- Filename: Default syntax of the file name. Click on the  icon for a description of the symbols that make up the models (syntax) of the file name.

Rendering done notification

Lets you specify a sound that signals the end of the rendering.