



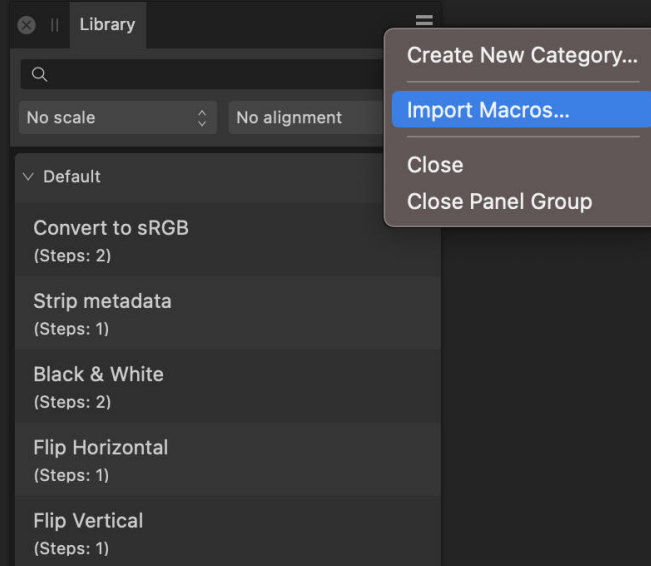
Introduction

This macro pack contains a variety of tone mapping implementations to provide the user with much more flexibility when processing HDR imagery. The tone mapping methods available are a mix of my own adaptations and popular implementations based on industry presentations and papers.

Generally, all methods should produce more natural results compared to the Tone Mapping Persona's Tone Compression and Local Contrast sliders. They also provide a flatter starting point for you to perform further tonal work. Furthermore, they are very quick to apply and are completely non-destructive.

Please note: these macros are designed for use in a 32-bit per channel pixel format—e.g. with HDR merged documents from bracketed exposures, 32-bit 3D renders (OpenEXR, Radiance HDR) or single RAW exposures developed to 32-bit via the option in the Develop Assistant.

If you try and use these macros on bounded pixel formats (16-bit and 8-bit) you may see odd results. The transforms are designed to map out-of-bound HDR values to standard dynamic range.



Installation

1. Extract the *.afmacros* file to a directory of your choice.
2. In Affinity Photo, you will need to expose the **Library** panel. Go to **Window>Library**.
3. Click the small icon at the top right of the **Library** panel and choose **Import Macros**.
4. Navigate to the directory containing the *.afmacros* file and select it, then click **Open** (or double click the file).
5. The **Library** panel will then be populated with the macros from that category. If you are installing any other macro packs, repeat the process for those categories.

Tip: you can also drag-drop the *.afmacros* file onto a blank area of the app and it will immediately import and be shown on the Library panel. You can bulk import multiple *.afmacros* files this way. I prefer this approach as it is much quicker than the above method.



Top: No tone mapping. Middle: Tone Mapping Persona (tone compression). Below: Logarithmic Tone Mapping

Usage

1. Open your existing HDR document, or merge your bracketed exposures together using **File>New HDR Merge**. On the HDR Merge dialog, *make sure you uncheck Tone map HDR image*.
2. Once the merge has completed, you will be in the main Photo Persona with the **Clone Brush Tool** selected. Use **H** to switch to the **View Tool**, and this will hide the **Sources** panel.
3. On the **Library** panel, find the **JR - HDR Tone Mapping** category, and within it you will see the tone mapping macros.
4. Apply any of the Tone Mapping macros for a natural and flat starting point. Use additional adjustment layers for further tonal work (e.g. Curves, Brightness/Contrast, HSL, Selective Colour).
5. Do experiment with expanding the **Tone Mapping** group that is added when you run the macro. For example, you can use the **Base Exposure** layer to adjust the initial exposure and reveal more highlight detail. There is also a **Base White Balance** layer that will allow you to alter white balance pre-tone map.
6. Below the tone mapping macros, you will also find additional helper macros such as **Post Tone-Map Contrast** and **Post Tone-Map Contrast Curve**. Use these to add more contrast into your tone mapped result if required.
7. At the bottom, you will also find **Flatten to 16-bit sRGB** and **Flatten to 16-bit ROMM**. Once you are happy with the tone mapping, you can use these to quickly flatten and convert to a 16-bit gamma corrected format, where adjustments, blending operations and filters may behave more predictably (32-bit linear compositing can often seem trickier and more 'sensitive'). sRGB will provide a regular colour space—recommended for most users—whereas ROMM is better for wide colour space workflows.

Why use these?

A fair question would be to ask what these macros offer compared to Affinity Photo's built-in tone mapping, accessed by switching to the **Tone Mapping Persona** (you automatically enter this after an HDR merge if you leave the **Tone map HDR image** checked).

There are several advantages to using these macros:

- Fast application and completely non-destructive workflow. Tone mapping is achieved via live filter layers and adjustment layers, then presented to the user as a group. You can hide the group to temporarily disable the tone mapping, adjust the base exposure and add more adjustments if you wish. The tone mapped result appears instantly and renders quickly.
- Because of this approach, you do not have to destructively commit any tone mapping settings. Instead, you can apply the macro, then build up your own layer stack above the initial group and fine-tune the tones until you are happy. There is no need to duplicate your image pixel layer just so you have a backup copy.
- Natural tone mapping result: you may often find that for particular scenes, especially strong sunsets over a landscape, Affinity Photo's default tone mapping compresses the foreground tones in a way that is unrealistic. Grass and other foliage can sometimes look slightly 'radioactive'! These tone mapping macros will present a result that is more natural and closer to how the human eye would have perceived the scene.
- Seamless 360 tone mapping: these macros are a great solution for 360 imagery! Tone mapping via the **Tone Mapping Persona** will leave you with a visible seam because the process is not seam-aware. These macros however will let you tone map 360 imagery with no seam when the image is projected.



Above: No tone mapping. Below: Colour Preserving Tone Mapping

Credits

All photography and editing by James Ritson. 3D visualisation scenes from Evermotion and Entity Designer, rendered to OpenEXR 32-bit with blender.



Above: Initial 32-bit 360 image with linear pixel values. Below: 360 seam-aware tone mapping