Sampling

These settings control the sampling quality of the rendered images. Increasing the sampling rates reduces the amount of noise in the images, but at the expense of increased rendering time.

You will notice that this evolution is not linear, as, for each of these sampling rates, the actual number of samples is the square of the input value. For example, if *Camera (AA)* samples are 3, it means that 3x3 = 9 samples will be used for Anti-Aliasing. If *diffuse* samples is 2, then 2x2 = 4 samples will be used for the GI. The same applies to the other values.

Diffuse, specular, transmission, SSS, and *volume* sampling rates are expressed for each *Camera (AA)* sample. This AA sampling rate can, therefore, be considered as a global multiplier for all the other ones. In this example, the total amount of *diffuse* samples per-pixel is, therefore, 9x4 = 36.

The different per-pixel sample counts are listed at the top of the section.

The distribution of *SSS* samples are lit as if they were a diffuse shading effect after a split, so 1 sample to each direct light and 1 indirect sample at each *SSS* probe/randomwalk that successfully hits a point of the surface. Arnold will only "split" a path once when recursing through the various types of bounces and scattering events. So for example, if you have a diffuse GI sample setting of 3, and the camera ray hits a diffuse surface first, this means that from that moment on there will only 9 GI paths traversing the scene, even if these paths recursively hit the diffuse surface, or hit a transmissive or *SSS* surface with a different sampling rate, no more than the 9 paths will be spawned (with some caveats)

> (i) Further information about sampling can be found here.

> (i) More information about working with sampling and removing noise can be found here.
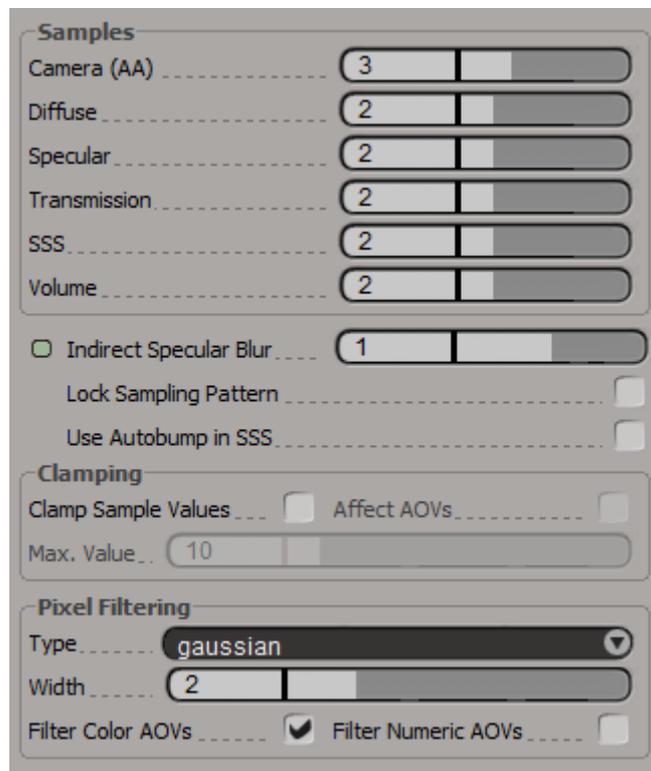
Sampling is divided into the following sections:

- Samples
- Clamping
- Sample Filtering

Extra Attributes

Lock Sampling Pattern

Locks the AA_seed so that the sampling noise won't change with the frame number (avoiding the film grain look).

Use Autobump in SSS

If enabled, Arnold takes into account the effect that autobump has when computing the raytraced BSSRDF's result.
This helps capture the high frequency details of the surface more accurately, at the expense of slightly longer render times.