Scalar - Reference Guide

Version 1.0
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greyscalelabs.com

Scalar is an advanced interpolation algorithm that intelligently remaps your color information from your source color-depth to utilize the entirety of DaVinci Resolve's 32-bit color space. This plug-in elevates the color-grading experience from any camera to beyond the feel of a 16-bit source.

The clearest benefits of Scalar are visible when applied to 8-bit or chroma-subsampled sources below 4:2:2, where artifacts such as banding and posterization directly limit your color-grading latitude. However, Scalar has been proven to further expand and improve even on information-rich data from 16-bit, 4:4:4 formats.

Here's informative videos about bit-depth and chroma-subsampling.

Node Structure
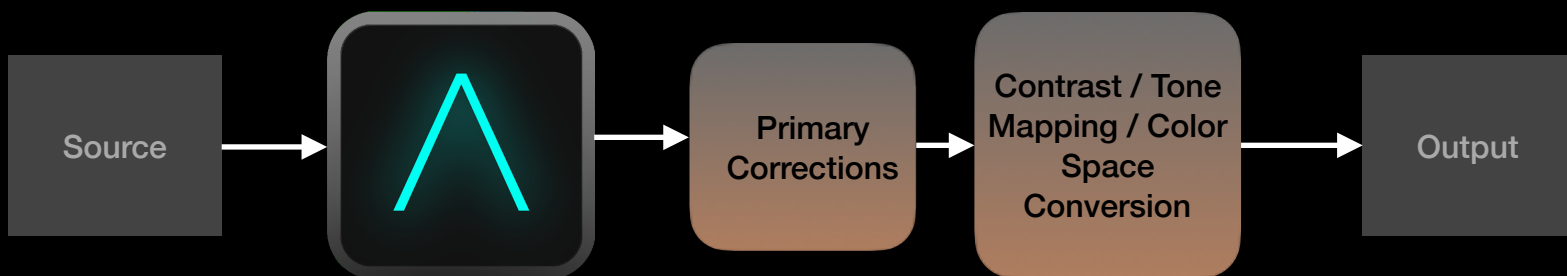
Using Scalar **before** making your primary corrections disrupts how Scalar perceives color distribution by prematurely redistributing your luma values. Grading **after** the Scalar node will preserve color-information and image detail as much as possible. You'll find that no matter the order, Scalar will be effective in improving your color-grading experience but to get the best results, follow our recommended workflow.

Interface

Reach

| Spectral | ——————•———— | 5.000 | ◆ | ↺ |
| Spatial | ————•—————— | 20.00 | ◆ | ↺ |
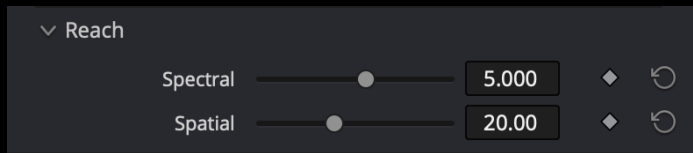
Reach:

SPECTRAL
Controls the color boundaries within which each pixel can interpolate. By adjusting this parameter, you control the spectrum of colors available for each pixel to transition towards. A higher integer indicates a wider range, directly increasing interpolation strength. Too high of a Spectral Reach value will result in loss of detail. Conversely, a narrower tonal range restricts your color spectrum reach, where a too low a value will limit the ability of Scalar to adjust your pixel distribution at all. Increase this parameter until your qualifiers show your desired result, stopping if you see a loss in image detail.

SPATIAL
Determines the spatial range around each pixel that the software considers for color interpolation. A larger value increases the sample size, increasing the accuracy of the upscale. Any increase to the spatial parameter will demand more processing power from the GPU, and should be used sparingly.

Performance Mode | Super | ⌄ | ↺

PERFORMANCE MODE:

Lite:
Designed to fix artifacts only in low-gradient areas such as skies. Best for systems with limited VRAM

Standard:
Significantly more computationally intensive than Lite Mode, but still trades a small amount of accuracy for performance. Systems with 16GB of VRAM can reach realtime performance in this mode.

Super:
For systems where VRAM is no object. This will unleash a brute-force algorithm, with no accuracy vs speed considerations. Will incur slow performance on devices with less than >32GB VRAM.