

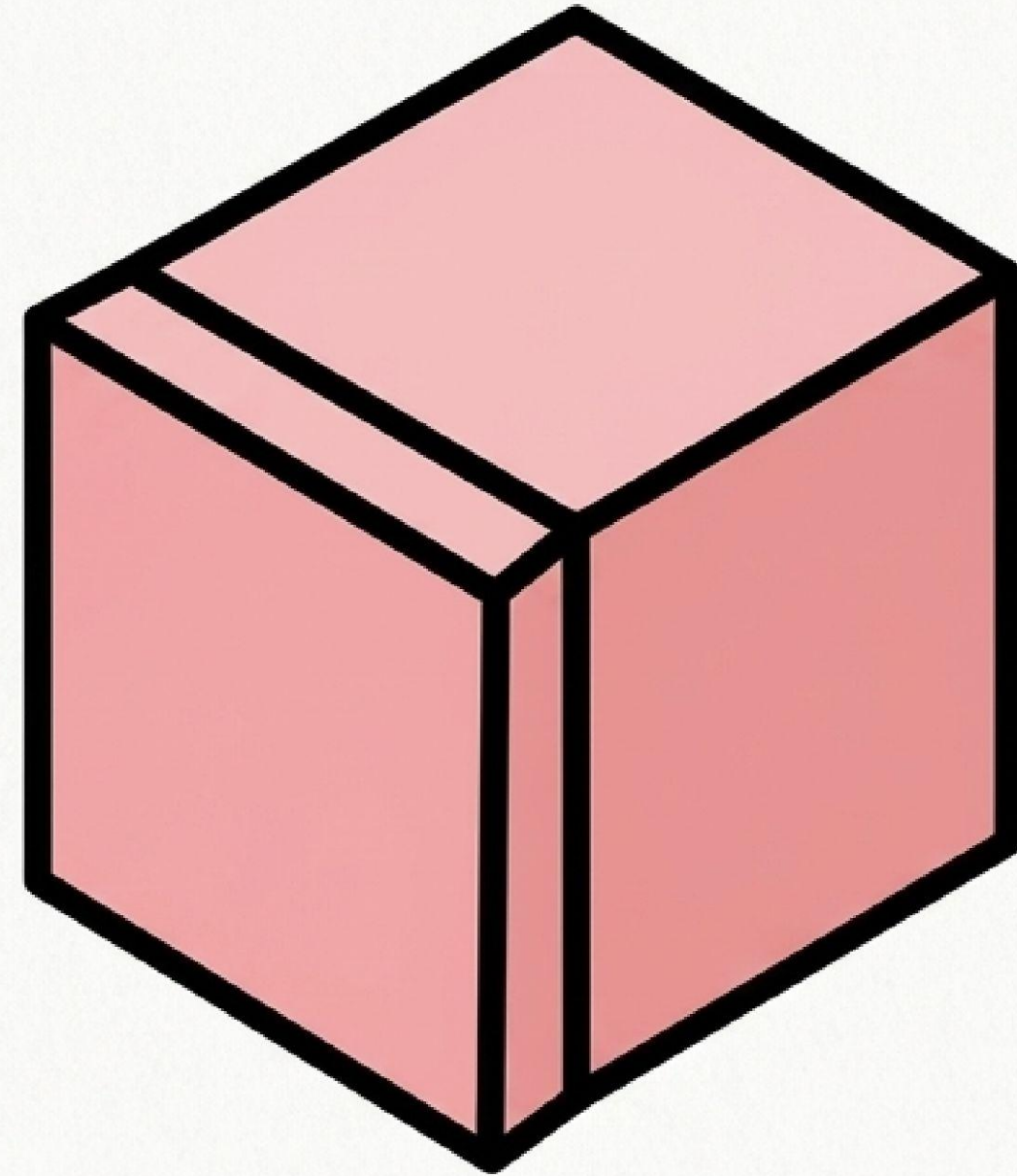
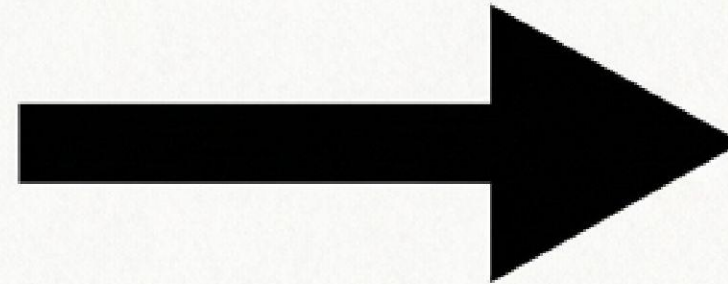
100% Free

Local Processing

No Login Required

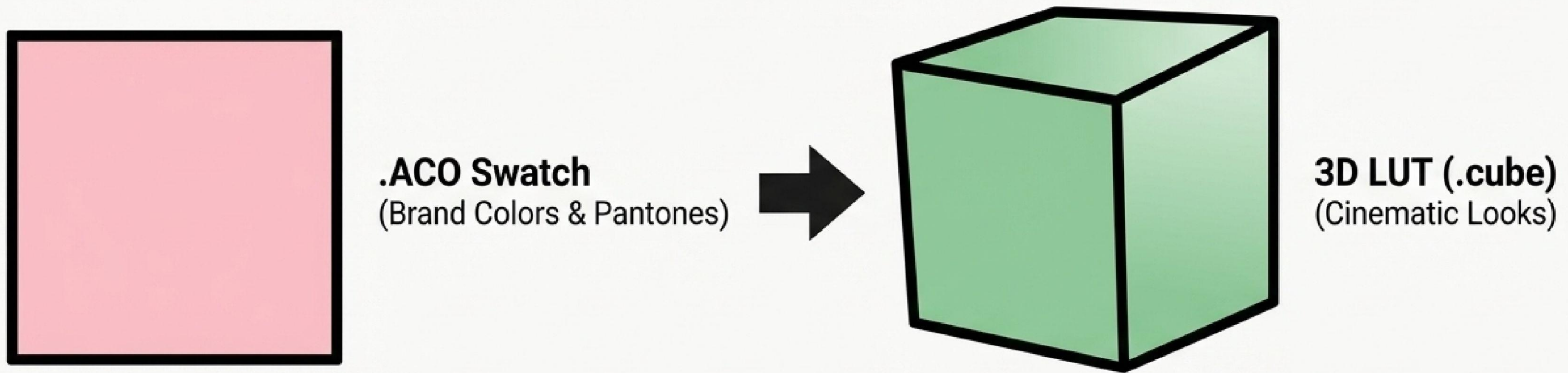
LUMATIC LAB ACO Converter: User Guide

Turn static design palettes into dynamic cinematic looks instantly.



A bridge between design palettes and video grading

The tool has one specific job: it takes a single Adobe Color Swatch file (.aco) and turns it into a 3D LUT (.cube). Instead of painting a flat color over your photo, it maps your chosen swatch to the exact highlights, midtones, and shadows of your image. You get a professional cinematic tint while preserving all original detail.

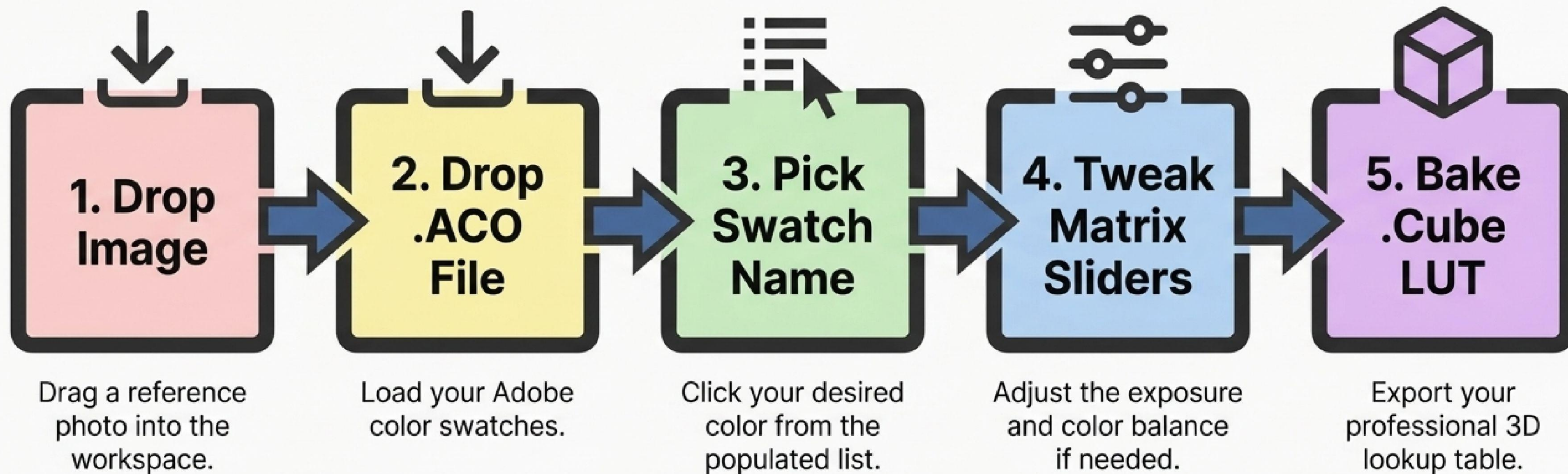


ADVANCED / TECHNICAL NOTES

Monochrome Grading Engine: By treating a single swatch as a Target Primary for a luminosity map, the app calculates a linear ramp from absolute black to 100% swatch color, entirely bypassing destructive blend modes.

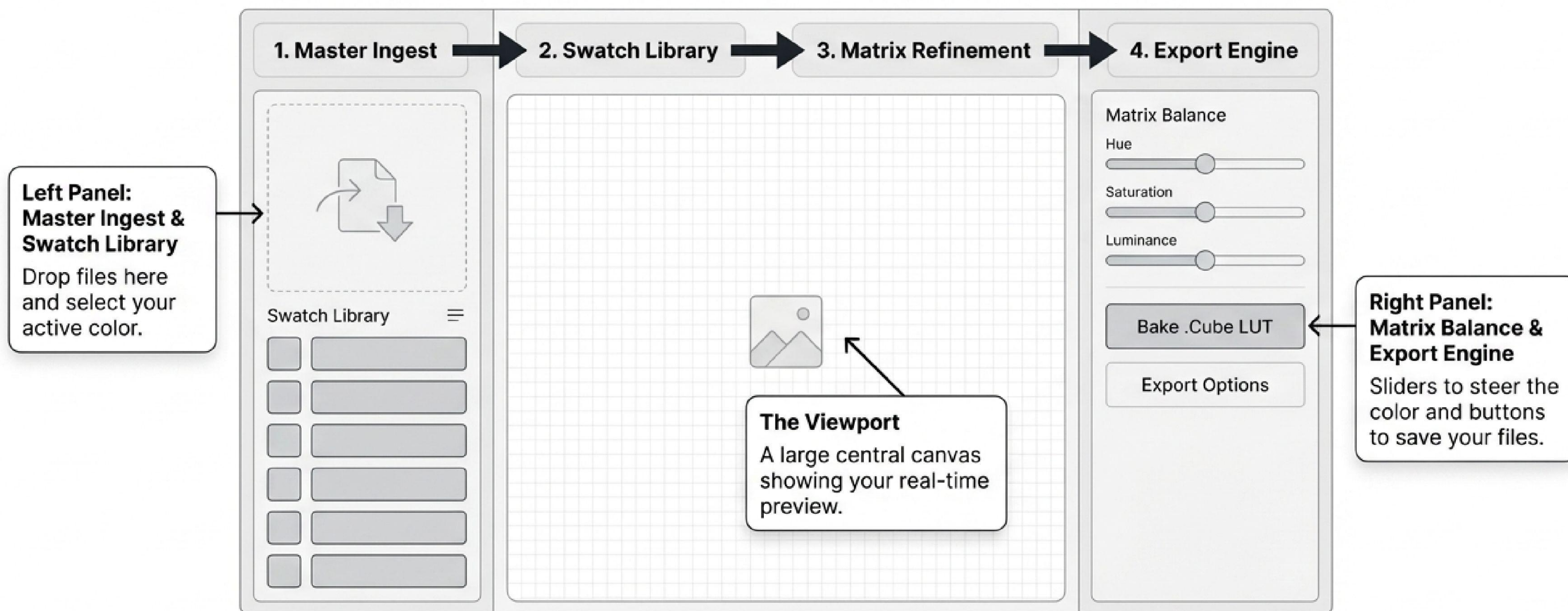
Quick Start: Your first look in 60 seconds

Follow this path to get your first result immediately. You don't need prior color grading experience.

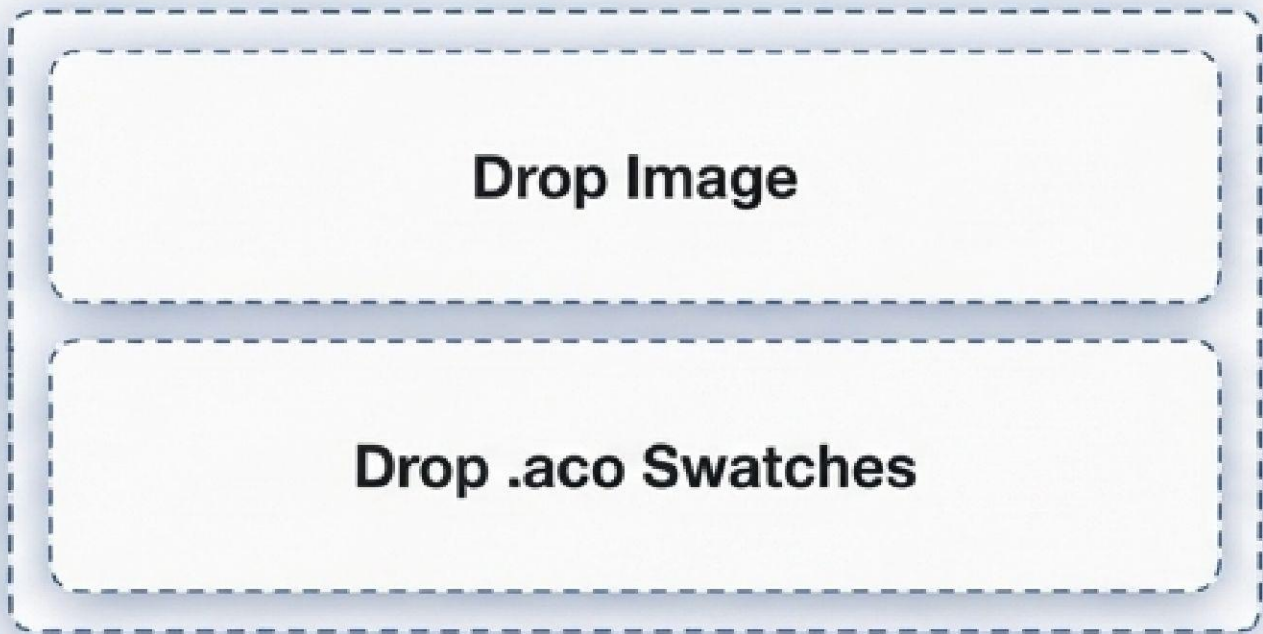


Workspace Interface Overview

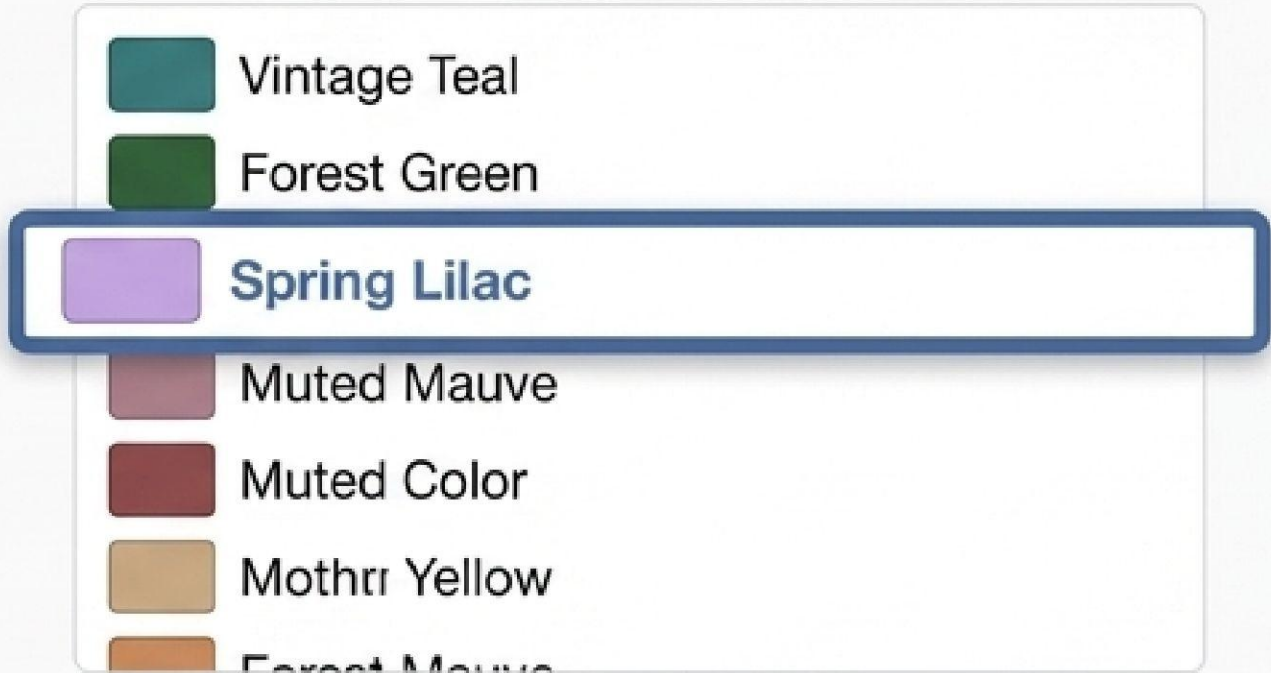
A streamlined, 3-column layout built for high-speed extraction and baking.



Steps 1 & 2: Master Ingest & Swatch Selection



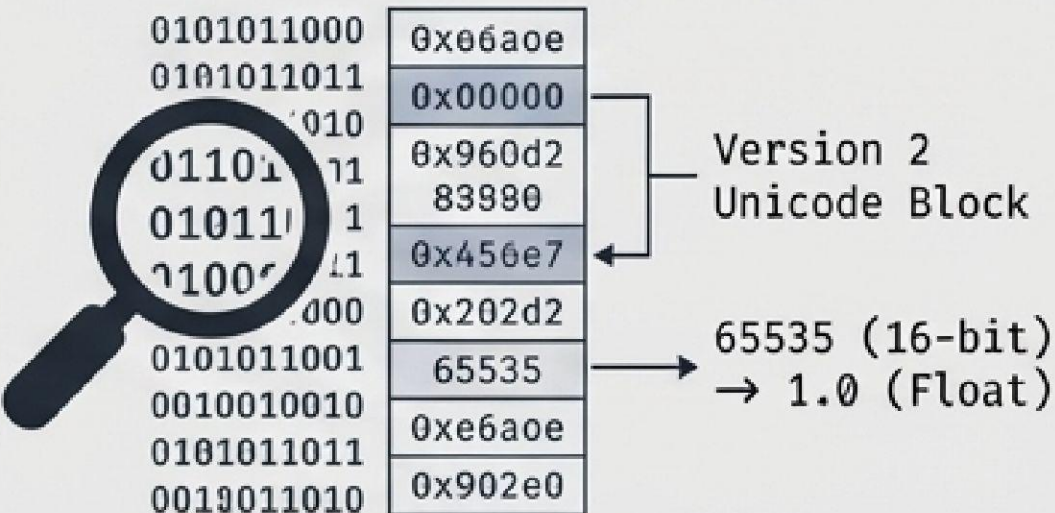
Input: Drag your reference image into the left panel, followed by your .aco swatch file. The zones light up for instant tactile feedback.



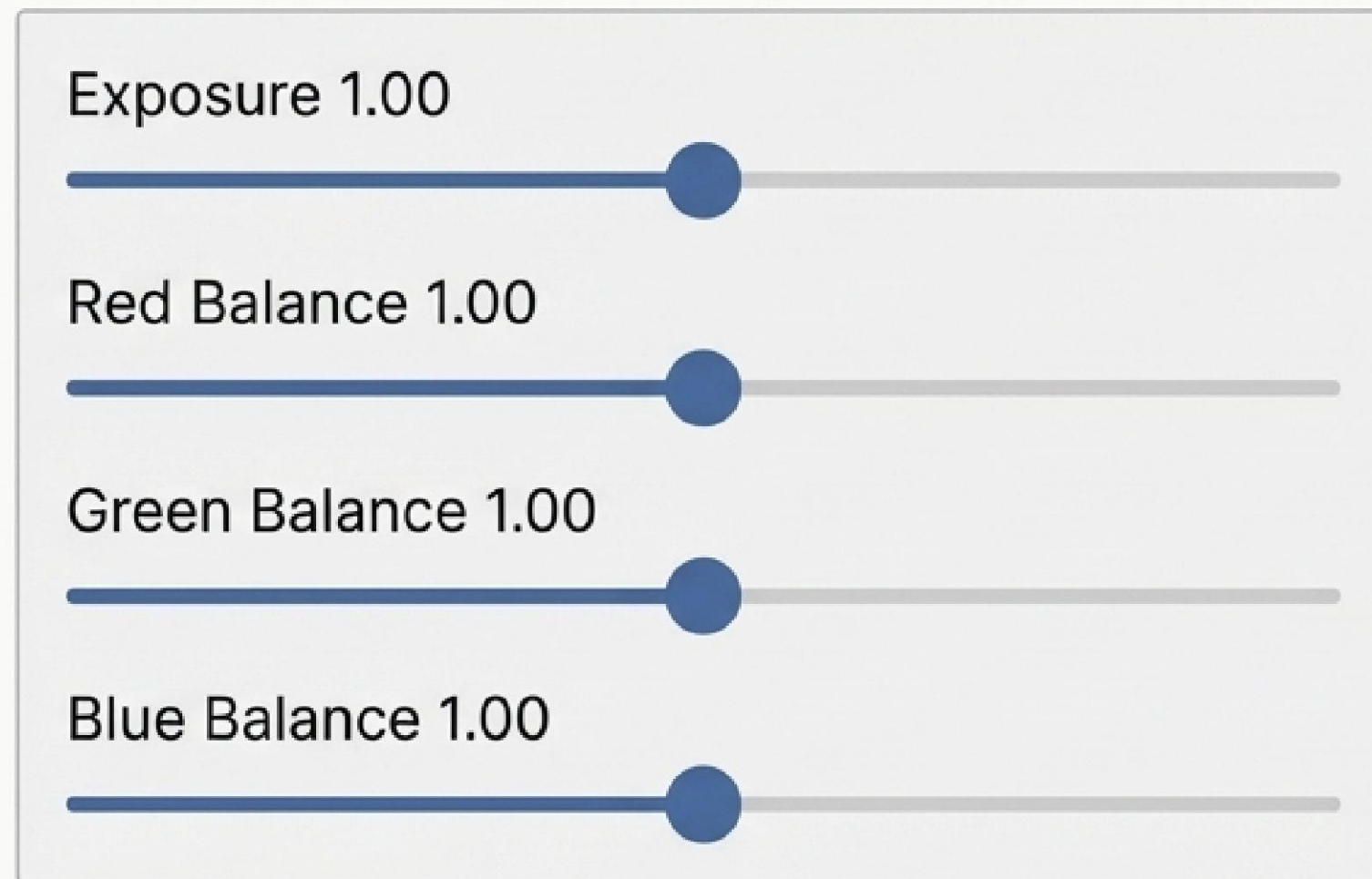
Action: Click your desired color from the auto-populated list.

ADVANCED / TECHNICAL NOTES: The Binary Signature Hunter

Adobe .aco files are 'Big Endian' binary structures. Standard parsers often fail or grab messy V1 data. Our engine navigates these structures to target Version 2 Unicode blocks. This normalizes 16-bit color data (0-65535) into high-precision float values and perfectly extracts original swatch names (e.g., 'Vintage Teal').



Step 3: Steer the color balance



Adjustment: Use the Exposure and RGB sliders to fine-tune your swatch's response.

Why it matters: A perfect design color might feel too heavy when applied to a photograph. These sliders let you “steer” the density and color temperature to perfectly match your reference image before generating the final file.

ADVANCED / TECHNICAL NOTES: The Rosetta Stone Mathematics

$$(L) = 0.285R + 0.557G + 0.114B$$

The rendering engine calculates baseline luminosity via this formula. Matrix sliders are multipliers applied to this baseline state. At unity (1.00), the image reflects the exact numerical value of the .aco file. Pushing sliders alters the multiplication mapped against the unified Luma calculation.

Step 4: The Export Engine

You have two output options. Save a quick snapshot for an email, or trigger the bake engine to build your actual grading tool.

Save Preview .JPG

Use Case: Send to clients for quick look approval.

Output: 1200px and 200px reference images.

Bake Swatch .Cube

Use Case: Final professional asset.

Output: A mathematical LUT ready for editing software.

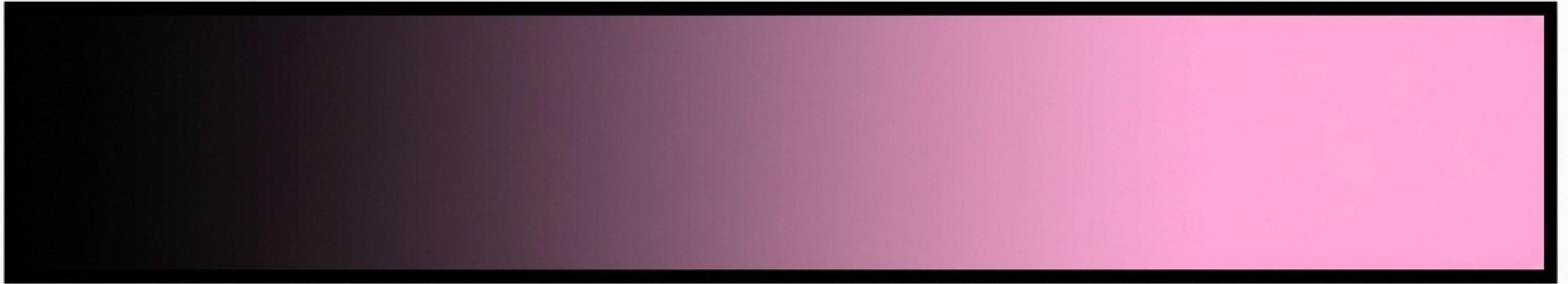
ADVANCED / TECHNICAL NOTES: Lattice Generation & Sanitized Naming

The engine generates an industry-standard 33x33x33 3D lattice point cloud. It automatically utilizes a Regular Expression (Regex) to sanitize Unicode swatch names, ensuring every single LUT exports as a unique, safe, filesystem-friendly filename.

Spring Lilac



The Secret Sauce: Dynamic Luminosity Mapping



0% Swatch

100% Swatch Color

- **What it does:** Maps your color strictly to light values.
- **What to expect:** Pure whites in your photo absorb 100% of the swatch color. Pure blacks remain 0% untouched.
- **When to use it:** It happens automatically. This is why your shadows stay rich and deep, and your highlights don't blow out into a solid, unreadable mess.

ADVANCED / TECHNICAL NOTES: Interpolation Physics

By anchoring the swatch color strictly to the highlight end of the luminosity ramp, the tool behaves less like a standard opacity overlay and more like a high-end optical glass filter placed in front of a camera lens.

Experiment without fear of breaking your image

Test radical color shifts, push sliders to the maximum, and try dozens of swatches. If you get lost, just click “Reset to Center” or “Clear All.” The app never damages your original photo.

Reset to Center

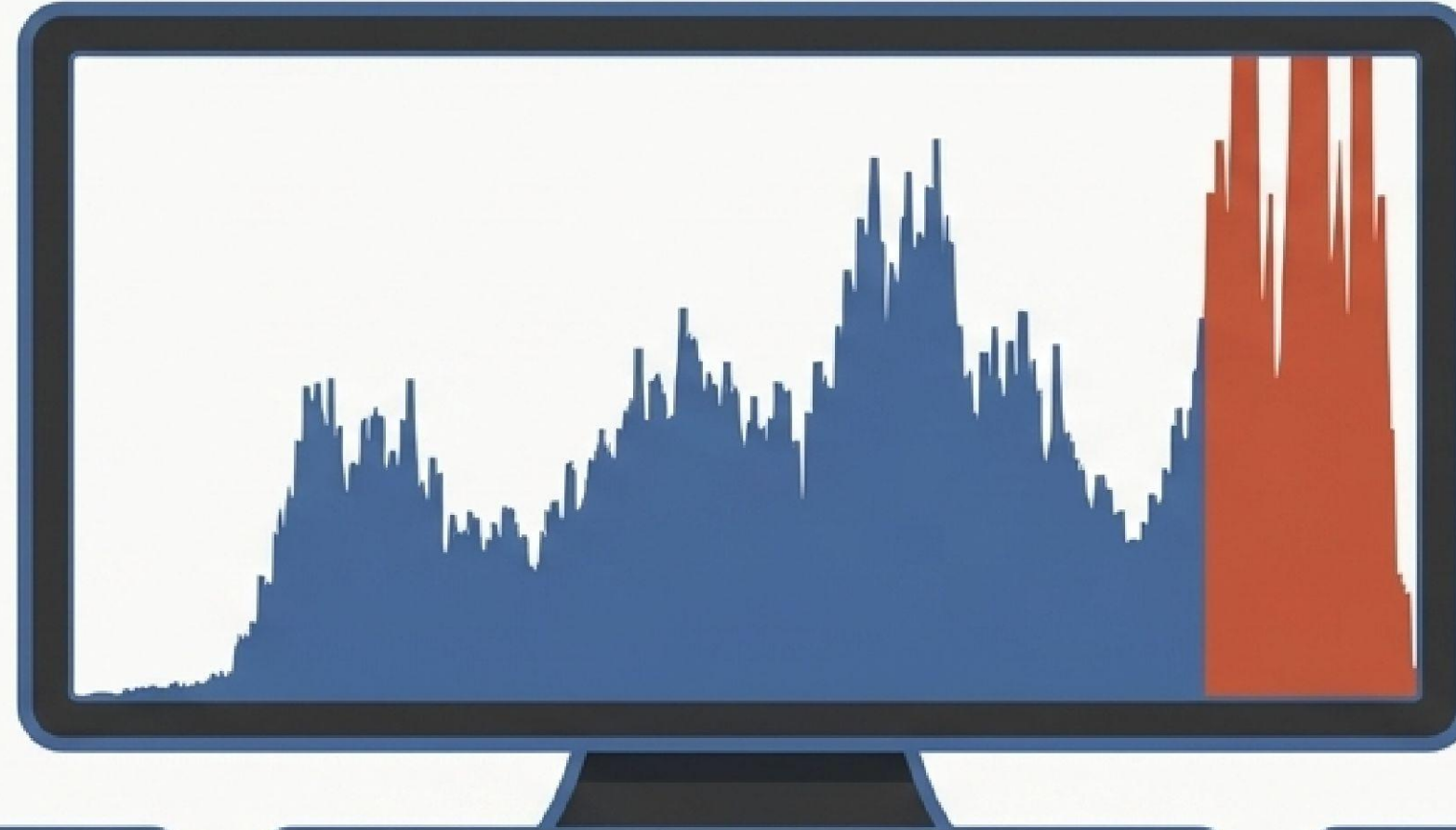


ADVANCED / TECHNICAL NOTES: Absolute Buffer Integrity

To prevent “data ghosting”—where micro-changes stack over time and degrade pixel quality during high-speed slider redraws—we utilize an immutable hidden `Uint8ClampedArray` named `pristine`. Every canvas update pulls mathematically perfectly from this untouched memory block.



Beginner Pro-Tips for Perfect Looks



Watch the Histogram

This live graph tracks your light. If the bars smash into the right wall, your highlights are “blown out” and losing detail. Lower the Exposure slider.

Use Neutral References

When testing swatches, drop in a photo with balanced, normal lighting. Starting with an image that is already heavily tinted will skew your results.

Clear the Stack

When switching between different design campaigns, click the red “Clear All” text in the library to empty the workspace and start fresh.

Real-World Scenarios

Scenario A: Brand-Accurate Grading

Your client gives you a corporate Pantone file. Drop it in, bake a LUT, and instantly apply their exact brand identity to all your video footage.



Scenario B: The Monochrome Darkroom

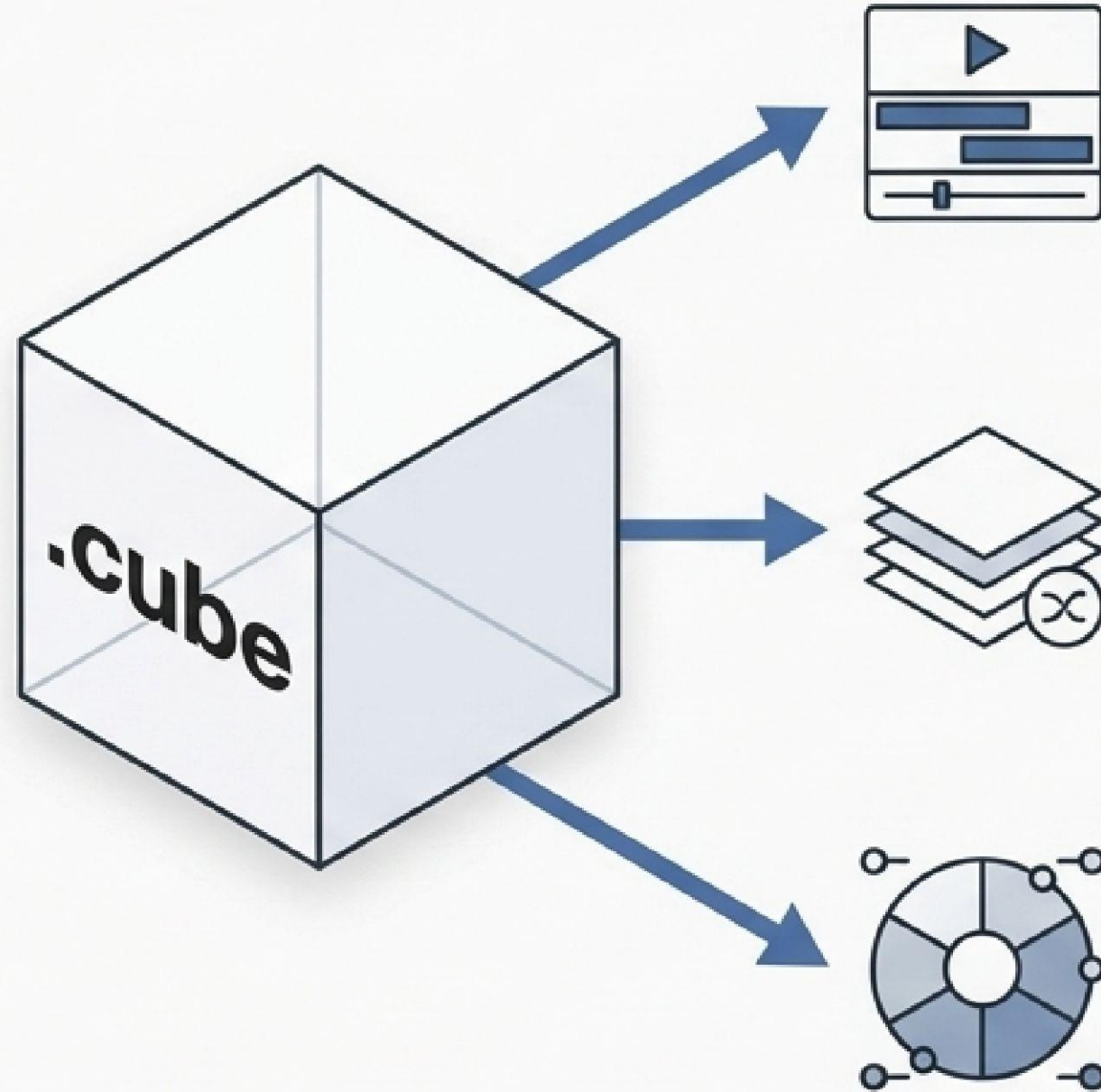
Because the engine maps light mathematically, pulling the Red balance slider down simulates putting a physical red glass filter on a camera—dramatically darkening blue skies for powerful B&W split-tones.



Export & Pipeline Compatibility

The Output.

The Lumatic LAB engine generates an industry-standard 33-point .cube file.



Where to use it.

This is the universal language of color grading. It is natively supported by Adobe Premiere Pro, DaVinci Resolve, Final Cut Pro, Photoshop, and After Effects.

Zero Lock-in.

No proprietary formats. Once you bake the look, it belongs to you forever to use in any pipeline.

Troubleshooting & Quick Fixes

Common Issue



Quick Fix



My Export buttons are grayed out.

Make sure you have dropped a reference image into the app first. The engine needs a canvas to calculate the math.

My image turned completely white or blown out.

Your exposure slider is pushed too high. Click "Reset to Center" in the right panel.

No colors are showing up when I drop my file.

Ensure you are dropping an Adobe .aco file, not a .ase or standard image file into the swatch zone.