ACV Curve Parser v2.6

User Guide

Complete reference to every panel, control, and feature in ACV Curve Parser v2.6.

Overview

ACV Curve Parser reads Photoshop .acv curve files and applies them to a reference image using the same monotone cubic spline interpolation as Photoshop. Graded results are exported as three JPEGs (original, social, archive) and one industry-standard 33-point 3D LUT. Multiple curves can be combined into a composite grade by chaining them in sequence.

Toolbar

Control	Description
■ ▣ □ (colour squares)	Sets the viewport background to black, middle grey (default #7F7F7F), or white. Sidebars are unaffected.
SOURCE	Hold to see the unprocessed original image. Release to return to the graded view. No settings are changed.
ZEBRA OFF / ON	Toggles exposure warning overlay. Magenta = blown highlights (FLOW zones, above 252). Lime Green = crushed blacks (EXIT zones, below 3).
CLEAR STACK	Removes all curves from the stack. Image stays loaded. Resets selection and combination name.
RESET	Confirmation required. Clears everything — curves, image, all state — and returns to cold-start.

Header border colour: Blue = READY (no image), Magenta = LIVE (image loaded), Green = EXPORTED (file saved successfully).

Left Panel — Asset Management

Control	Description
1. LOAD IMAGE	Opens file picker for JPEG, PNG, or WebP. Also accepts drag-and-drop onto the viewport. Export prefix auto-fills from the image filename.
2. LOAD CURVE FILES	Opens file picker for .acv files. Multiple files can be selected at once. Also accepts drag-and-drop anywhere on the app.
Drop zone	Visual indicator for drag-and-drop. Any supported file dropped anywhere on the app is routed correctly — images to the canvas, .acv files to the stack.

Left Panel — Curve Stack

The Curve Stack lists all loaded .acv files. No curve is applied to the image until the user explicitly clicks an entry.

Stack Item Controls

Element	Behaviour
Checkbox (left)	Marks this curve for combination export. Checking two or more curves enters Combined Mode. Independent of active selection.
Curve name (centre)	Click to make this curve the active single curve for preview and single-curve export.
⠿ drag handle (right of name)	Drag up or down to reorder within the stack. Reordering changes the chaining order in Combined Mode.
✕ delete button (far right)	Removes this curve from the stack immediately. No confirmation unless it is the last entry.

Selection Controls

Control	Description
File count label	Shows total curves in the stack (e.g. "7 FILES").
Selected count	Shows how many are checked (e.g. "3 SELECTED"). Only visible when at least one is checked.
ALL link	Checks all entries.
CLEAR link	Unchecks all entries.

Combined Mode

When two or more checkboxes are ticked, Combined Mode activates. A yellow " ⚡ COMBINED MODE — CURVES CHAINED" badge appears with a Combination Name input field.

- The canvas previews the combined result live — curves are chained in stack order.
- The Combination Name field, when filled, auto-syncs to the Export Filename Prefix for easy naming of the combined output.
- The export button label updates to show the number of curves being combined: "EXPORT COMBINED (3) — 3 JPEGs + LUT".
- Reordering stack items changes the chain order and immediately updates the preview.
- BATCH EXPORT ALL ignores checkboxes and always exports each file independently.

Centre Viewport

Displays the reference image with the active curve (or combined curves) applied in real time. The viewport background can be changed using the three colour squares in the toolbar. All file types can be dropped anywhere on the viewport.

Right Panel

Curve Integrity Scope

A 260×120px curve display showing the shape of the currently active transform across all channels. Four curves are drawn simultaneously:

Colour	Channel
White (semi-transparent)	Composite — applied to all channels equally
Red	Red channel only
Green	Green channel only
Blue	Blue channel only

The faint diagonal line from bottom-left to top-right is the identity curve — no change. Any deviation above the diagonal brightens; below darkens. The scope shows the combined transform when Combined Mode is active.

Luminance Histogram

A 256-bucket luminance histogram of the current canvas output, updated on every render pass. Uses Rec.601 luminance weights: L = 0.299R + 0.587G + 0.114B. Displayed as a filled gradient area — darker left (shadows), brighter right (highlights). Shows the post-curve tonal distribution of the image.

Export Specification

Control	Description
Export Filename Prefix	Base name for all exported files. Auto-filled from the image filename on load. Syncs from the Combination Name field when Combined Mode is active.
EXPORT ACTIVE — 3 JPEGs + LUT	Exports three JPEGs and one _33.cube for the current transform. Label changes to reflect combined mode.
Progress bar	3px turquoise bar showing export progress across the four output files.

Active Curve Info

Shows which curve is currently active and which of its four channels (Composite, Red, Green, Blue) are present in the file. In Combined Mode, shows the chain order of all selected curves: Curve A → Curve B → Curve C.

Output File Specification

File	Specification
prefix_ORIG.jpg	Full native resolution. JPEG quality 0.95. sRGB.
prefix_SOCIAL.jpg	Max 1200px longest side, aspect ratio preserved. JPEG quality 0.95.
prefix_ARCH.jpg	Max 200px longest side. JPEG quality 0.92. Suitable for thumbnails and archival catalogues.
prefix_33.cube	33-point 3D LUT (33^3 = 35,937 nodes). Standard .cube format. _33 suffix confirms 33-point lattice per Adobe/DaVinci Resolve standard. Colour-only transform — no spatial effects.

ACV Binary Format

Adobe .acv files are big-endian binary. The parser reads:

- Bytes 0–1: UINT16 version (1 or 2)
- Bytes 2–3: UINT16 curve count (typically 5: composite + R + G + B + unused)
- Per curve: UINT16 point count, then point pairs as output(UINT16), input(UINT16)
- Curves with fewer than 2 points are treated as identity (no change)

Curve Rendering — Monotone Cubic Spline

ACV files define curves with 4–10 control points. The app uses Fritsch-Carlson monotone cubic Hermite interpolation to build a 256-entry lookup table from those points — the same algorithm used by Photoshop. This produces smooth, correct curve shapes. The previous version used linear interpolation between control points, which produced incorrect results for all non-linear curves.

Combined Mode — Chaining Logic

When multiple curves are checked, a combined 256-entry LUT is built per channel by chaining the individual LUTs in stack order:

- Channel 0 (Composite): all composite LUTs chained — output of first feeds input of second, and so on.
- Channel 1 (Red), Channel 2 (Green), Channel 3 (Blue): each channel chained independently across all selected files in the same order.
- The chaining is mathematically equivalent to applying the curves as sequential Photoshop adjustment layers.
- The combined LUT is written directly to the exported _33.cube — it is not approximated.

> ⚠ **ORDER MATTERS**
> Applying Curve A then Curve B produces a different result than Curve B then Curve A. Use drag-to-reorder to control the chain sequence.

