Monochrome Lab Pro User Guide

A local-first monochrome workspace with a dedicated Library Worker, complete Library-state backup, built-in migration, and Library, Edit, and Layouts workflows.

> **Core principle:** photographs remain yours, Catalog state remains durable, and rebuildable indexing work stays outside the Editor.

Updated for the Layouts release, September 2026. Library, Edit, and Layouts connect selection, monochrome development, and multi-page presentation.

Library, Edit, and Layouts

Use the top navigation to move between the Library, the single-photograph Edit workspace, and Layouts. Library selects and organizes; Edit develops a photograph; Layouts combines photographs into pages. Framing remains available in Edit for a single finished image.

Create a Layouts project

Start with one or more selected Library photographs. Right-click and choose **Add to Layouts**. From Edit, right-click the photograph and choose **Add to Layouts**. You can also open Layouts and use **Choose Folder** in its photograph tray, then drag a photograph into the canvas.

Select a **Canvas** ratio before arranging the page: 1:1, 4:5, 3:4, 9:16, 3:2, 2:3, 4:3, 5:4, or 2:1. Canvas ratio describes the exported page, independently of the crop of each photograph.

Choose a **Composition**. The selected composition controls placement as you add photographs. Single, Diptych, Triptych, and Grid provide one, two, three, or four positions. Portraits above places two portraits above a landscape; Portraits below reverses that arrangement. Stacked places two landscapes vertically. Spread carries one photograph across two pages. Freeform lets you position and resize photographs freely.

Drag photographs from the tray into the chosen positions. Changing margin or spacing keeps photographs assigned to their positions. Select a photograph to use its **Photograph** card, or right-click it for image-fit and white-frame crop actions. **Auto-crop white frame** helps an already-framed export fit a new composition; inspect the result on very bright photographs so intended pale content is not mistaken for a border.

Pages and appearance

Click **+** beside the canvas to add a page. A new page begins with the first page's canvas size. Select a page to change its own canvas, composition, and appearance. Pages can use different compositions. Drag page labels to reorder; Option-Left/Right moves the selected page. Right-click a page to delete it.

Appearance offers a White or Black frame and a continuous **Margin** slider for the outside border. **Spacing** appears only for compositions with gaps between photographs. The sliders control the amount directly; there are no enable checkboxes.

Right-click the surrounding canvas to choose a viewing background for contrast. That viewing color is separate from the exported frame color. The workspace fits the page sequence automatically. Undo and Redo remain available through the Edit menu and keyboard even though Layouts has no large Undo/Redo buttons.

Projects: save the complete arrangement

A project preserves the page arrangement and its photograph references. The project name sits below the **Projects** header. A new session starts as **Untitled Project**; applying a template never changes that project name. MLP starts fresh when launched instead of reopening the last project automatically.

Use **Save** to name and keep a project in MLP's managed Projects folder. Press Enter to confirm a name. **Open** opens the macOS file picker at the project folder; choose a saved `.mlplayout` file. **Close** leaves the current project and returns to a fresh

one, with unsaved-work protection where needed. The three-dot menu includes Save, Open, Close, Rename, and Delete. **Recent Projects** provides quick access to saved work.

A project file is not a backup of its source photographs. Keep the original photographs available and back them up independently. Reconnect a missing source folder if a project reports an unavailable photograph.

Templates: reuse a page design

The collapsible **Templates** card lists reusable page designs. Use its **+** control to save the selected design and confirm the name with Enter. A template is a starting arrangement for different photographs, not another name for a project containing a finished sequence.

Use a template's three-dot menu for **Set as Default** (or Clear Default), **Save Duplicate**, **Rename**, and **Delete**. Set a default template from its options when you want that design as your starting point. Deleting a template requires confirmation. Save the project separately when the photographs and pages are ready to keep.

Export the finished pages

Use **Export JPEG** at the bottom of the right column. Choose the filename and destination in the save dialog. A single-page layout produces one JPEG; a multi-page layout produces numbered page JPEGs at the chosen destination. Layout export does not create an extra folder and does not offer PDF. Keep the project if you need to revise the arrangement later.

For a single developed photograph, use the **Export** card in Edit and its **Export Presets**. Set a default preset in that dialog to reuse your intended delivery settings. Layouts and Edit have different delivery purposes; selecting a multi-page composition is not necessary to frame or export one photograph.

Frame a single photograph in Edit

The **Framing** card restores the familiar canvas and border choices for a single photograph. Finish its Crop and geometry first, then select a canvas ratio and border treatment. Framing changes presentation; Crop changes which source pixels remain. Page Spread belongs in Layouts and is no longer offered in Edit.

Changing the crop ratio preserves your committed rotation and perspective settings. For example, a 2.8-degree rotation stays in place when you choose another crop ratio. Use the relevant reset control deliberately when you want to remove geometry.

Target Color Response

In **Development > Color Response**, click the small target button. Point at the photograph to see the underlying source color and the sliders that contribute to it. The swatch samples a small neighborhood before monochrome conversion, so it remains useful while viewing a black-and-white photograph.

Click and drag **up to brighten** or **down to darken** that color. The starting color stays locked until you release, even if the pointer crosses another subject. Neighboring color bands blend smoothly. The change affects matching colors throughout the photograph; this is not a local mask. Neutral areas report **Neutral - no color to target** and do not create an arbitrary color adjustment.

For keyboard use, activate the target button and use the arrow keys to move the target. Shift moves it farther. Press **Enter** to lock the color, then **Up/Down** to adjust in single steps or **Shift-Up/Down** in five-step increments. Press **Enter** to apply. **Escape** cancels an active adjustment; another Escape exits the tool. Each completed gesture is one Undo step. Existing Color Response sliders show the values, and the values follow recipes, presets, Copy/Paste Edits, Sync and single/batch exports.

The target follows the working image through crop, rotation, perspective, lens correction, zoom and pan. It operates on the editable photograph, not a read-only reference. Choose Hand, Crop or another image tool to return to its interaction. Closing Development also exits Color Response targeting. The target is unavailable during source preparation, Original comparison and native detail inspection.

Punch and Flat Tone

Punch keeps its established tonal curve. Its preview finishing stage now retains fractional precision through Punch and Tone and applies stable, neutral dithering at the final display conversion. This reduces visible tonal steps in smooth transitions. GPU previews, CPU fallback and generated edit thumbnails share this finishing behavior. Native JPEG, PNG and TIFF rendering retain their existing processing.

M2 - Flat Tone is the same neutral starting path with clearer wording. Stored engine identifiers, existing photographs and the M2 rendering character remain compatible.

Lens Correction and Noise Reduction

Both sections live inside **Development**, below Color Response. They start collapsed. Their headers identify the selected lens treatment and Default, Custom, or Off noise treatment. Expand either section with a click or the keyboard.

Lens correction

Automatic - Apple RAW preserves MLP's existing behaviour: apply the optional lens correction supplied by the RAW decoder when available. The panel reports whether it is active. macOS does not expose a named Apple profile, so MLP does not guess one. For JPEG, TIFF, PNG, and other rendered files, Automatic adds no correction; the photograph may already contain camera or previous-software corrections.

Choose **Lensfun profile** to search the bundled offline database by maker or model. Select the exact lens and calibration sensor size. MLP includes 1,564 calibrated profile records from Lensfun; coverage varies, including for cinema and adapted lenses. The database is credited to its contributors under CC BY-SA 3.0. No online profile lookup or photograph upload occurs.

Focal length, aperture, and sensor crop factor use photograph/camera metadata where available. Enter missing values for unchipped lenses. Use the physical focal length, not the 35 mm equivalent. Aperture is an f-number, not a cinema T-stop. Enter the camera sensor crop factor rather than assuming the profile's calibration size equals your camera. Focus distance is in metres; the default 1,000 m represents distant focus.

The panel identifies available distortion, lateral colour-fringe and shading corrections for the chosen capture settings. Supported models are rectilinear poly3/poly5/PTLens distortion, linear/poly3 lateral colour fringing, and PA shading. Calibrations interpolate within measured focal/aperture ranges; shading uses the nearest measured focus distance, displayed in the panel. Missing calibrations remain unavailable. Fisheye and anamorphic projection conversion are not provided.

Distortion and Shading amounts use 100 as the calibrated strength. Colour-fringe correction has its own toggle. **Manual** provides barrel/pincushion distortion and edge-shading adjustment without a database profile. Positive shading lifts the edges; negative shading darkens them. Scale adds magnification. Automatic edge coverage prevents empty borders from geometric correction.

Choosing Profile, Manual, or Off disables optional Apple RAW lens correction during a fresh decode. MLP does not stack a selected Lensfun profile on top of that correction. Corrections already baked into a raster or a converter's linear DNG cannot be undone. Changing RAW source treatment requires access to the original RAW.

Noise reduction

MLP default preserves the existing RAW treatment: decoder-default luminance reduction and the established colour setting where supported. Rendered files receive no additional noise reduction by default. Moving an available slider selects **Custom**. **Off** disables adjustable reduction; decoders with automatic colour denoising still show that automatic treatment explicitly.

For RAW, Luminance and Colour control only the capabilities exposed by the active decoder. RAW 9 handles colour noise automatically, so its Colour slider is unavailable and marked Auto. For rendered files, Luminance uses local macOS edge-preserving noise reduction; a separate Colour adjustment is unavailable. All processing remains local, using the active macOS decoder and filters.

Reduction happens before monochrome conversion and creative film grain. Raising it can remove fine texture along with noise. Use **Inspect 100%** to examine actual prepared source pixels before monochrome conversion and grain. The native detail view can move around the photograph with its directional buttons.

Compare, reset, save and export

Show uncorrected temporarily disables only lens correction; **Show without NR** temporarily disables adjustable noise reduction. Other edits remain. Click the same button to return. Comparison does not add an undo step, alter the saved recipe, or become an exported treatment. Export returns to the intended correction automatically.

MLP keeps up to two prepared correction variants for the current photograph and prepares the uncorrected lens view in the background. Once ready, comparison reuses decoded previews instead of processing the photograph again. Opening a photograph, selecting a new treatment, or comparing before background preparation finishes can still require a wait. Switching photographs releases these caches. Full-resolution detail and exports retain the same processing quality.

Reset restores that section's MLP default. Changes support Undo/Redo, per-photograph reopen, snapshots, Copy/Paste Edits and newly saved user presets. Built-in looks leave the source treatment in place. Sync Settings includes a separate **Lens correction and noise reduction** group that starts unchecked, so mixed cameras and lenses are not accidentally given one source treatment.

Corrections prepare a full-resolution high-bit source outside the interactive renderer. The settled preview, native detail inspection, single export and background batch export use that same prepared treatment. A processing error is reported and blocks export until resolved. Originals remain unchanged. Lens preparation supports photographs up to 100 megapixels.

Professional workflows

Customize controller commands

Open **Settings > Controllers** and choose TourBox, TourBox Elite, or Logitech MX Creative Console. Existing defaults remain until changed. Click **Record** beside a command and press its shortcut. A conflict message names an existing assignment or explains a reserved application shortcut. Escape cancels recording. **Reset** restores one command; **Reset Profile** restores the selected device profile. **Save** applies changes and updates the Controller menu; **Cancel** discards the draft.

Commands cover adjustments, fine/coarse steps, reset, Presets, Profiles, Crop, Masks, Spot Remove, Histogram, Snapshots, Original, Library, Edit, Filter, ratings, navigation, export, Compare, Reference and Sync. Hold Original to see the source, then release to return. Clicking its native menu item toggles the same view. Text fields and open dialogs keep ordinary typing. Configure corresponding shortcuts in the manufacturer's controller application; MLP does not install device drivers.

Compare and Reference

Select exactly two Library photographs and choose **View > Compare Selection**, its context action, or controller command. The active photograph uses the existing Edit. **Activate Other** changes the editable photograph. Ratings and Previous/Next target the active photograph.

For **Reference Selection**, open the photograph to edit, select a different reference in Library, then invoke Reference. The reference remains read only. It displays the saved recipe and cannot receive active-image edits, ratings or metadata changes.

Available space determines side-by-side or stacked arrangement. **Linked** synchronizes zoom and pan; turn it off for independent inspection. **Swap Sides** changes arrangement. Focus the reference and use arrows to pan, plus/minus to zoom, or Home to fit. **Close** restores the previous photograph, zoom, pan and panel state. The reference is a bounded native-rendered preview, not a second full-resolution editing canvas.

Sync Settings

Keep the source photograph open, select destinations in Library, and choose **Sync Settings**. Review the destination count and groups before confirming. Development, Profiles, Light, EFX, Tone Curve and Finish are selected initially. Lens correction/noise reduction, Crop, Masks, Spot Remove and Layout are opt-in. Ratings, tags, albums and IPTC remain photograph-specific.

Synchronized photographs refresh their Library thumbnails. Sync saves recipes in small batches and coalesces Catalog persistence. Cancel stops new batches; saved changes remain. The completion report identifies failures and unprocessed photographs. Originals remain untouched.

Background Batch Export

Choose **Export Selected** for a Library selection. One photograph at a time uses the same native processing and output encoder as single-image export. Browsing and rating remain available; the open photograph and inspection view stay in place.

Progress shows completed and failed counts and the current filename. **Cancel** stops new items after the current export commits safely. Completed outputs remain. Failures and unprocessed items appear in a compact report; one unreadable photograph does not stop later items. MLP prevents idle system sleep during the queue and releases that request afterward. Unique output names protect existing photographs.

Complete Export Presets

Open **Export Presets** from the Export card. A preset retains format, JPEG quality or 16-bit TIFF, sRGB/Display P3, native size or long-edge limit, enlargement permission, PPI, sharpening, media, filename, metadata policy and destination behavior. JPEG quality and enlargement are controlled here. Choose Long edge, enter the target pixel size and select Allow enlargement when you need a larger file. Native size preserves the source dimensions after cropping and layout.

Use **Create**, **Save / Rename**, **Duplicate**, **Import**, **Export**, and **Delete** for user presets. **Use Current Settings** fills the form from output controls. **Apply** uses the displayed preset for subsequent single and selected exports in the current session. Saved presets remain available after relaunch. Built-ins cannot be overwritten or deleted; duplicate one to customize it.

Choose the default export folder, a folder each time, or a saved folder. Filename tokens are `{filename}` and `{sequence}`. Metadata choices retain supported photograph metadata, creator/copyright only, or no photograph metadata. Required ICC profile and resolution information remain. Single and batch use one preset interpreter.

Culling and Catalog recovery

Default rating commands are Control-Option-0 through Control-Option-5. Enable **Advance after rating** in Settings > Controllers to move forward afterward. Previous/Next retains a zoomed inspection position when dimensions permit. Pick/Reject and color labels are not introduced.

Ratings, tags and IPTC changes are acknowledged after a durable journal write in the existing SQLite index. Catalog compaction is scheduled and serialized in a worker, then atomically committed. Retained journal changes replay on launch. Per-image recipes retain immediate recovery files. Back up the complete Library state: SQLite also carries annotation changes awaiting compaction and must not be discarded as an arbitrary cache.

Relink Missing Folder

Open **Settings > Migration > Relink Missing Folder**. Enter the unavailable folder and locate its replacement. **Preview Matches** reports matched, ambiguous, missing and conflicting records. The old folder must be unavailable. Matching prefers stored sampled-content identity, then relative path with matching size. A unique filename, size and modification-time match is a controlled fallback when stronger evidence is absent.

Review the report before **Relink Matches & Restart**. Only unambiguous matches are applied. Other records remain for another attempt; MLP does not guess between duplicates. No original is moved or copied. Catalog/index paths, recipes, snapshots, ratings, tags, albums, IPTC and edit status keep their relationships. Recovery copies precede the transactional state replacement. Success restarts MLP; an interrupted commit is restored at the next launch.

Supported color-output contract

Tagged rasters use the established color-managed source path. Camera RAW uses the native macOS decoder and a high-bit working source. The bounded interactive preview is separate from native export, which replays floating-point Profiles/LUTs, tone mapping, masks, grain and final geometry.

JPEG and PNG deliver 8-bit channels with monochrome-safe final quantization dither. TIFF delivers 16-bit RGB with an embedded sRGB or Display P3 profile. PPI is metadata and does not alone change pixel dimensions. A 16-bit export cannot recover detail absent from an 8-bit original. Output metadata is rebuilt for the delivered raster. Single and batch interpret identical recipes and presets.

MLP does not certify arbitrary monitor-profile matching. The delivery contract is explicit sRGB/Display P3 ICC output, established working conversion and normal operating-system display handling. Local editing works offline. The bounded update check never

gates editing. Trial and activation checks are separate. Diagnostics remain local and reviewable, with structured state and redacted errors rather than photograph pixels or full paths.

Revert to Original

Choose **Revert to Original** to remove the active Monochrome Lab Pro edit recipe from the current photograph. Any open Masks, Spot Remove, Histogram, or Snapshots panel closes first. When the photograph has a saved Snapshot, Revert proceeds directly because the saved state remains available. Without a saved Snapshot, Monochrome Lab Pro asks only **Are you sure?** before proceeding.

Open Library photographs in another application

Right-click a photograph and choose **Open in...** to select a macOS application. After selection, the command displays the application's name and opens the clicked photograph or the active multi-selection in that application. Change or clear the association under **Settings > System > External Applications**.

Monochrome Lab Pro is a local-first black-and-white photography environment for Apple silicon Macs. Your photographs stay in the folders you choose. Monochrome Lab Pro does not upload your Library to a cloud service.

Start here

Choose one **Library Folder**, then open Library. That folder and everything beneath it become your Monochrome Lab Pro Library. Existing photographs remain in place; choosing an archive does not duplicate it. New imports are copied into `YYYY / MM-DD-YYYY` inside the selected Library Folder.

Two local files preserve different parts of the experience:

- `catalog.json` contains edits, ratings, comments, tags, favorites, albums, Library state, and stable photograph relationships.
- `library-index-v2.sqlite` contains the prepared metadata index used to navigate and filter a large Library quickly.

Use **Catalog > Back Up Library State...** to create one dated backup folder containing Catalog, SQLite index and snapshot/export-preset state.

Library and Edit

Command-1 opens Library. Use it to navigate folders, filter, rate, tag, assign albums, inspect and edit metadata, copy and paste edits, and reveal the photograph open in Edit. Folder View understands canonical year and `MM-DD-YYYY` capture-date folders.

The macOS **File** menu offers **Open Library**, **Import Photos...**, **Print**, and **Export**. Open Library enters Library immediately. Import Photos first enters Library and then presents the import panel so the destination and Library context stay visible. Print retains Command-P and opens the professional output workspace; Export retains Command-E and uses the active Export format. Opening an individual photograph remains available through drag and drop, Finder, and Library workflows rather than a redundant File-menu item.

The Library toolbar offers Grid and List views. **Filter** narrows the current folder, album, tag, or recent import by filename, file type, edit state, rating, camera, lens, capture date, tag, and album. Type any part of a filename in the first field; matching is case-insensitive, updates after a short pause, and can also be committed immediately with Enter or Apply. Its dropdowns are populated from the Library index, selections combine, and the Filter button reports how many are active. **Clear All** resets the choices inside the open panel; the adjacent square **C** button immediately clears the applied filter and restores the full current scope. Focal Length remains visible as photograph metadata where available, but it is not a Filter criterion because phone cameras and EXIF conversions often produce noisy physical focal-length values.

Within ordinary folder browsing, Filter includes matching photographs in every descendant folder. Moving from a date folder up to its year folder therefore displays matching photographs across all dates in that year; it does not require opening each date folder separately.

Command-2 opens Edit. Neutral Monochrome loads automatically. Edit recipes continue saving to the working Catalog; reopening a photograph restores its adjustments, confirmed crop, rotation, and horizontal flip.

The **Development** section immediately above Crop contains one compact **Signal Path** row:

- **M2 - Flat Tone** is the default. It creates a neutral monochrome signal in linear light before Monochrome Lab develops tone, texture, atmosphere, and finish. It behaves like an already-monochrome source.
- **M3** creates a red-filtered monochrome signal in linear light before the same tonal development. Reds reproduce substantially lighter and blues darker, using normalized smooth coefficients rather than a hard channel cutoff.
- **M4** creates an orange-filtered monochrome signal. It lifts warm skin and earth tones more gently than M3 while still separating them from foliage and blue skies.

Changing Signal Path is non-destructive and undoable. The choice is saved with projects and image recipes, included in presets and Copy/Paste Edits, reflected in Library previews, and replayed by full-resolution export. Existing photographs saved with the former color-aware M1 or yellow-filter M3 keep that rendering through hidden compatibility engines. Photographs without saved edits start in M2 by default. Change that new-image default under **Settings > Application > New Images** without altering existing photographs.

Color Response

The eight compact sliders under **Color Response** tune the source colors that form the monochrome image: Red, Orange, Yellow, Green, Aqua, Blue, Purple, and Magenta. Move a band right to render those source colors lighter or left to render them darker. Neighboring bands overlap smoothly, so a hue between orange and yellow responds to both instead of crossing a visible boundary. The remap stays monotonic at strong settings, protecting gradients from hard clipping and false tonal blocks.

Color Response is always available with M2, M3, M4, RAW, and raster sources. Neutral pixels remain neutral. An already-monochrome JPEG contains no hidden hue information, so the controls remain present but cannot invent color separation that is absent from the source. Color Response is included in recipes, snapshots, presets, Copy/Paste Edits, Undo/Redo, Library previews, and native export.

The former Red, Green, and Blue **Channel Contrast** controls are no longer shown in Light. Old recipes that contain those values continue to render exactly through hidden compatibility fields.

The centered bottom toolbar contains Masks, Spot Remove, Histogram, Snapshots, Filmstrip, and Original. Click Snapshots to toggle its chooser, then use the explicit **Save S#** control to store the current complete edit recipe. Hovering or focusing does not open it, and opening the chooser by itself never creates a snapshot. Press and hold the Original icon to reveal the unedited photograph; release it to return to the current edit. The existing **O** press-and-hold shortcut and backslash comparison shortcut remain available. The former recurring Original shortcut notification no longer appears when photographs load.

In Masks, click the **Layer Opacity** number to type an exact value from 0 to 100, then confirm it in the entry dialog. The typed value and the slider stay synchronized and update the selected layer only.

Open **Histogram** to monitor the Levels display. The triangle at the upper left toggles blue shadow-clipping warnings and the triangle at the upper right toggles red highlight-clipping warnings. Press **J** when not typing to switch both on or off together. Closing Histogram also clears the warnings so an overlay cannot remain on the photograph without its controls visible. Clipping warnings affect only the Edit display; they never alter or appear in an export.

The upper-right inspector opens to **Presets** and contains the complete saved-look list plus its Add control. **Default** is always the first row. The bundled **Shep Gallery** group retains its fourteen established looks, including Sculpted Figure and Patience Noir. The **Artisan** group adds ten original recipes: five M2 and five M3, covering documentary, portrait, architecture, high-key, landscape, and wildlife tonal families with individualized curves and grain. Named groups appear directly without a redundant User Presets parent, and Unfiled appears only when at least one preset actually needs filing. Use a group's three-dot menu to rename or delete that group; deleting a group moves its presets to Unfiled.

Choose **Profiles** in the same tab strip to browse the installed tonal profiles directly. The list refreshes its built-in and imported options whenever it opens, and the selected profile is clearly marked. Choose **Info** to see Camera, Lens, Focal Length, Shutter, Aperture, ISO, and File Type. A subdued orange top edge marks the active Presets, Profiles, or Info tab. Use Arrow Left and Arrow Right to move between focused tabs; Home selects Presets and End selects Info. The right inspector itself never scrolls:

the three primary panes, Framing, and Export occupy independent regions, Export stays fixed at the bottom, and long Preset or Profile content scrolls only inside its own pane when needed.

Preset Library

Open **Settings > Preset Library** to manage saved looks independently of the active photograph. The manager follows the same compact structure as LUT Library:

- **Import Presets** accepts one or several `.mlpreset` or compatible JSON preset files.
- **New Group** creates a persistent collection for related looks. Select a group to browse it, then use Rename Group or Delete Group. Deleting a group preserves its presets in Ungrouped.
- Command-click selects individual presets and Shift-click selects a range. Choose a destination and **Move** to organize the entire selection at once.
- Rename, Export, and Delete operate on the current selection. Search filters names and group labels without changing the library on disk.

The Edit and Settings show the same preset library. A change in either place appears immediately in the other, and preset recipes retain their established tone curve, LUT, development mode, lens correction, and processing values. Artisan is installed independently and additively: it does not remove or alter Shep Gallery or unrelated user presets, and it preserves a matching Artisan recipe already present on disk.

Responsive editing

Individual photograph recipes remain durable immediately, but the complete recovery Catalog is now compacted after a short idle period and is also flushed when the photograph changes, the application moves to the background, or it closes. This prevents a large Catalog from being parsed and serialized during every brief slider pause.

Color Response and legacy RGB/Channel Contrast movement reuse the expensive color-science and LAB-LUT preparation. Display grain, Monochrome Finish, and Tone Grade share one GPU finishing pass, with a single-readback CPU fallback. Native-resolution export continues to use the certified high-bit signal path.

Library thumbnails load through Monochrome Lab Pro's protected local protocol so Chromium can cache and cancel them naturally during fast scrolling. The application does not expose a general filesystem protocol, and these changes do not upload photographs or Library data.

If the configured Library Folder or its drive is unavailable, a standalone photograph still opens directly from its current location. Monochrome Lab Pro does not attempt a failing automatic import in that situation. Its edit recipe remains in the system-managed Catalog; reconnect the Library or choose another Library Folder before importing the original later.

When 200 or more selected photographs are added to an album, a centered progress panel appears before the operation starts. It reports preparation, Catalog identity, save, and refresh progress. Existing indexed photographs reuse their Catalog identities, so a large shoot does not needlessly re-hash every original.

Right-click anywhere on the Edit viewing surface - including the empty canvas immediately after launch - to choose **Dark**, **Light Gray**, or **White**. The choice is remembered between launches and changes only the area around the photograph; it never enters an edit recipe or export. The Edit toolbar and Library keep their own interface colors.

Library and Edit use a consistent left-column width. The top navigation controls view changes.

The Edit's top and centered bottom toolbars use the same charcoal color. Active bottom tools are identified by a short orange line at the top of the button; vertical dividers remain neutral and continuous. The macOS window title area stays visually blank so the workspace begins cleanly beneath the traffic-light controls.

Apple-supported camera RAW files become editable from an exact bounded Core Image preview while the full 16-bit source finishes in the background. Preview and high-bit source share orientation and lens-corrected geometry. Export unlocks when 16-bit preparation is complete.

Dedicated Library Worker

Monochrome Lab Pro no longer performs Library metadata discovery inside the main editing process. A separate, lightweight **Library Worker** maintains `library-index-v2.sqlite`.

While Monochrome Lab Pro is running, the worker quietly watches the entire selected Library Folder, including subfolders. It wakes only when the filesystem reports a change:

- a new photograph is added;
- an existing photograph changes;
- a photograph or folder is moved or renamed;
- a photograph is removed.

Files imported by Monochrome Lab Pro are also sent directly to the worker, so indexing can begin immediately without waiting for filesystem discovery. Files copied into the Library through Finder or another application are handled by the same watcher. No Terminal window or separate Dock application appears.

The worker waits for a file copy to settle, coalesces bursts of changes, reads indexable metadata, and commits updates to SQLite in batches. When nothing changes, the worker remains dormant. While Edit is active, noninteractive worker jobs yield more aggressively so RAW development, rendering, masks, and the visible photograph retain priority.

Monochrome Lab Pro does not scan the Library at startup. Launching only confirms the configured Library folder is present and reachable, then starts the watcher. Nothing crawls the archive unless you ask for it.

Software updates

Once every 24 hours at most, Monochrome Lab Pro requests a small JSON release manifest from `updates.monochromelab.app`. It does not send photographs, Library metadata, Catalog contents, or editing activity. If the service cannot be reached, the automatic check remains silent and the application continues normally.

When the manifest names a newer stable version, Monochrome Lab Pro shows the release notes, minimum macOS version, and published SHA-256. Choose **Download** to open the versioned, signed and notarized DMG hosted on the Monochrome Lab Pro Cloudflare R2 release domain, or choose **Later** to keep working. Monochrome Lab Pro never downloads or installs a release without that choice.

Use **Help > Check for Updates...** whenever you want a fresh result. The manual command immediately revalidates the live R2 manifest and bypasses stale local or edge caches; it does not wait for the next automatic check.

Update Library

Library > Update Library... reconciles the Library folder against its prepared index, on demand.

Use it when photographs were added, changed, or removed while Monochrome Lab Pro was not running, or when you suspect the index and the folder have drifted apart.

It compares what is on disk against `library-index-v2.sqlite` and indexes only what needs it:

- Photographs missing from the index are indexed.
- Photographs whose size or modification time changed since indexing are re-indexed.
- Photographs whose size and modification time still match are skipped without being read.
- Index entries whose files no longer exist are removed.

Originals are read in place and are never copied or modified. When it finishes, Monochrome Lab Pro reports how many photographs it checked, indexed, skipped, and removed.

Update Library runs only when you choose it. It does not run at startup, and it does not run when a Library drive reconnects.

If the selected Library has never been indexed, or its prepared index is missing, **Settings > Migration > Batch Index New Drive...** remains the deeper first-time and recovery option for a large new archive.

Background controls

There is no master pause button beside Import in Library. Background controls are separated in **Settings > Library & Catalog** and in the macOS menus:

- **Library > Background Sync** controls nonessential thumbnail pre-caching. Visible Library thumbnails still load when needed.
- **Catalog > Library Worker** pauses or resumes automatic SQLite metadata indexing. Pausing the worker never pauses `catalog.json` saves, ratings, edits, albums, tags, comments, or other user-created state.

Background Sync sleeps while Edit is active. The Library Worker remains separate from the Edit and runs only when it has actual Library changes to process.

Import

Camera media is discovered recursively and importable images are selected automatically. General external drives begin at their root, show immediate folders and images, and load large folders in bounded batches.

Regular Import, mounted-media auto-import, Add to Library, and a photograph dragged into Edit all use the same destination contract: `YYYY / MM-DD-YYYY` inside the selected Library Folder. Embedded capture date is preferred; filesystem dates are used only when capture metadata is unavailable.

Recent Imports keeps the last three import sessions and opens them as virtual Library sets without creating albums or duplicate folders. Imported paths are delivered directly to the dedicated Library Worker for immediate indexing.

Back up Library state

Catalog > Back Up Library State... creates a dated folder containing:

- `catalog.json`;
- `library-index-v2.sqlite`;
- `professional-workflow-3.8.json` - snapshots, variants and user Export Presets;
- `backup-info.json`.

The backup does not copy original photographs. Keep your original Library drive protected through your normal storage and backup strategy.

Internal Catalog version history remains automatic. A manual Library-state backup is recommended after a large import, major album or metadata change, Library remap, migration, or approximately one week without a manual backup.

Backup reminders never interrupt editing. When a reminder is due, Monochrome Lab Pro waits until you attempt to quit. The normal close confirmation is replaced by one choice to keep editing, back up and quit, or quit without backing up. Canceling the backup keeps the application open.

Migration

Settings > Migration carries prepared Library state to another Mac without copying the photographs themselves.

Export Library Migration

Settings > Migration > Export Library Migration... creates a portable folder containing:

- `catalog.json` - edits, ratings, albums, tags, comments, and photograph relationships;
- `library-index-v2.sqlite` - the prepared metadata index;
- `professional-workflow-3.8.json` - snapshots, variants and user Export Presets;

- `migration-info.json` - Library-root information used during import.

Import Library Migration

On the destination Mac, attach the original photo drive and choose **Settings > Migration > Import Library Migration...**. Select the exported migration folder. If the drive mounts at a different path, locate the Library when prompted; Monochrome Lab Pro remaps the root references.

Before replacing local state, Monochrome Lab Pro creates a recovery copy of the destination Mac's current Catalog, SQLite index, snapshots and path settings. Staging and validation precede a recoverable transaction. The application restarts after a successful import.

Batch Index New Drive

Settings > Migration > Batch Index New Drive... runs the dedicated indexing engine in high-throughput mode against a selected drive or photo folder. This is the fastest way to prepare a large archive because it does not load the Edit workload. Originals are read in place and are never copied or modified.

Current SQLite rows are skipped using path, modification time, and file size. Only new or changed photographs require metadata extraction. Use Batch Index for a large newly attached archive, an intentional verification pass, or a rebuilt/missing index; ordinary additions are handled automatically by the Library Worker.

Catalog, index, and moved photographs

The Catalog is the irreplaceable user-data layer. The SQLite index holds metadata and an annotation recovery journal. Back up the complete Library state so pending annotation changes and the prepared index travel together.

Monochrome Lab Pro does not create new per-photo `.monochromelab-id.json` identity sidecars. Existing legacy sidecars remain readable as recovery fallbacks. New identity and index state is stored in SQLite.

If photographs were reorganized and need help reconnecting to their Catalog state, use **Settings > Migration > Relink Missing Folder**. Matching uses stable identities, relative paths, metadata, sampled-content fingerprints, and a unique filename/size/time fallback only when evidence is unambiguous.

Metadata and filtering

When a newly selected folder has no prepared index, filename and culling filters can use its current contents immediately. Metadata options and indexed subfolder coverage become available as indexing proceeds. Canonically equivalent macOS filenames match in both composed and decomposed forms.

Filter uses the local SQLite metadata index, so it remains responsive without analyzing photographs for visual content. Filter menus are populated from values that actually exist in the Library, and ordinary folder filtering includes photographs in descendant folders.

Select one or more photographs and choose **Edit Metadata** to edit Title, Caption, Creator, Copyright, City, State/Province, and Country. When a multi-selection contains different values, mixed fields remain untouched until you deliberately edit them.

Choose **Copy Metadata** to select exactly which IPTC fields and corrected capture time to copy. **Paste Metadata** changes only those selected fields on the destination photographs; ratings, tags, albums, comments, and edit recipes are not silently included.

Choose **Correct Capture Time** to set an exact date and time or shift a group by a relative number of days, hours, and minutes. The correction is non-destructive Catalog metadata: it does not rewrite the original photograph. The Edit **Info** tab opens the same metadata editor used in Library.

Right-click the photograph to open actions grouped by purpose. **Organize** contains rating, Albums, and Tags. **Metadata** contains Edit Metadata, Copy Metadata, Paste Metadata, and Correct Capture Time. **Image** contains Find in Library, Show in Finder, and Open in the application selected under Settings > System. **Edits** contains Revert to Original. Copy Edits and Paste Edits remain in the top toolbar and are intentionally not duplicated here. Right-click the surrounding canvas instead to choose its Dark, Light Gray, or White viewing color.

When metadata is available, exported photographs embed the applicable title, caption, creator, copyright, location, keywords, and corrected capture time in supported EXIF, IPTC, or XMP fields.

Profiles

Profiles are technically 3D LAB LUTs. They shape how source colors separate as monochrome values without changing the adjustment sliders. Light, EFX, masks, Finish, and export continue to build on that tonal profile.

Before the LAB LUT is sampled, a continuous gamut shoulder compresses only colors approaching or exceeding the valid RGB boundary. It scales chroma around a neutral luminance anchor rather than clipping red, green, and blue independently. This preserves hue direction and prevents neighboring saturated colors from becoming identical blocks. Comfortably in-gamut colors pass through unchanged, and the same floating-point spectral transform drives Edit preview and native/high-bit output.

Choose the active response in the Edit's right-inspector **Profiles** tab. Changing it redraws the developed preview without redeveloping the RAW. Choose None to return to the standard response. The application ships only six deliberately distinct included responses: Rollei Infrared 400, Ilford FP4 Plus 125, Fomapan 200 Creative, Ilford Delta 400, Ilford Delta 3200, and Green Filter. Imported compatible 3D `.cube` LUTs remain available through Settings > LUT Library.

A LUT chosen for one photograph does not silently carry into the next. New images start at **None** unless you explicitly select one installed LUT in **Monochrome Lab Pro > Settings > LUT Library** and choose **Make default**. The same button becomes **Remove default** for the current default, returning new photographs to None. Included LUTs are protected; imported LUTs can be exported or deleted.

EFX detail and vignette

Definition is the broad detail control for monochrome structure. Its established adaptive response is strongly Texture-led at low settings, then introduces broader Clarity progressively as the control moves toward its upper end. This keeps ordinary settings focused on fine structure while allowing stronger settings to build wider local contrast. Negative Definition softens/reduces detail; positive Definition increases it. **Sharpen** remains a separate edge-detail control.

Pop combines protected color separation with luminance microcontrast before monochrome conversion. Its lower range remains restrained; the upper range now opens into substantially stronger broad and fine microcontrast while keeping the established color-response curve.

Vignette lives in EFX with exactly three controls. **Strength** controls perimeter darkening, **Feather** controls how gradually the darkening builds, and **Midpoint** moves the radial transition closer to the exact image center or farther toward the edge. Midpoint never shifts the vignette horizontally or vertically; the effect always remains centered. A Midpoint of 50 preserves the established 4.2.4 radius. Film Grain has stronger visible texture while retaining its established size and luminance behavior. Judge the result at both normal viewing size and 100%.

Spot Heal

Open **Spot Remove** from the centered bottom toolbar and click a spot or blemish - a sensor mark, a dust spot, a small distraction. Its draggable card remains available while you work. Monochrome Lab Pro searches nearby for an area whose surround matches, borrows its texture, and blends the tone so the join is invisible. Option-click removes the last spot. The size control, the bracket keys and the scroll wheel all set the spot size.

Healing is stored the way every other edit is stored: as an operation, not as pixels. Each spot keeps a position, size, feather and source location relative to the frame, so it replays at full resolution on export exactly as you placed it on the preview. Your original file is never modified.

This is darkroom spotting, not object removal. Spot Heal borrows texture from elsewhere in the same photograph, so it works on dust, blemishes and small marks against a consistent background. It cannot reconstruct something it has never seen, and a large object against detailed structure is beyond it by design.

Mask Layers

Open Masks in Edit for an ordered local-adjustment stack. The Layers panel creates Radial, Linear, or Dodge & Burn layers, with up to 10 layers per photograph. Layer visibility, opacity, ordering, duplication, inline naming, local Light adjustments and Definition, and Luminance Range are preserved in the Catalog and used by full-resolution 16-bit export.

Luminance Range **Add** forms a union with the layer geometry, so qualifying tones can contribute anywhere in the photograph. The Edit therefore processes the complete photograph for that preview mode, preventing a rectangular edge around radial or linear masks. **Intersect** and **Subtract** remain geometry-bounded. This affects preview coverage only; saved mask behavior and native/high-bit output use the same established mask math.

Multiple linear masks remain independent layers. Every visible layer keeps its own geometry, opacity, luminance range, and local adjustments; layers are applied in stack order, and overlapping masks accumulate their results. Hidden or zero-opacity layers do not affect preview or export.

Mask creation is manual; Monochrome Lab Pro does not add automated subject, sky, people, object, color-range, or depth-range masks.

Profile Strength is no longer exposed as an Edit control. A selected Profile is an intentional technical response, applied at its authored strength. Existing photographs and presets that contain an older saved strength remain compatible.

Hardware controllers

Monochrome Lab Pro provides a stable Controller command surface for **TourBox**, **TourBox Elite**, and **Logitech MX Creative Console**. Open **Settings > Controllers**, choose the device profile, then link an application profile to Monochrome Lab Pro in TourBox Console or Logi Options+.

Controller commands select the previous or next adjustment, move the selected slider in normal or coarse steps, reset it, cycle Presets and Profiles, and open Crop, Masks, Spot Remove, or Histogram. The same assignments also appear in the macOS **Controller** menu. Because these are application commands rather than recorded mouse positions, controller mappings continue to work when panels move or the window is resized.

Tone Curve points

Click the curve to add a point and drag it to shape the monochrome tonal response. Double-click any interior point to remove it. The anchored black and white endpoints cannot be removed. Delete or Backspace remains available for the selected interior point.

Levels histogram

Press **Command-H** or use the histogram icon in the bottom toolbar to open the Levels drawer. The modern luminance graph uses a restrained grid and muted-red fill. Move the pointer across the graph to inspect a luminance value and temporarily highlight that tonal range on the photograph. Press Command-H again to close it.

Crop, geometry, and professional output

The Crop module includes Angle Tool, Rotate, 90-degree rotation, flips, and manual Perspective controls. Vertical corrects converging verticals, Horizontal corrects side-to-side keystone, Amount controls correction strength, Aspect compensates for stretching, and Barrel Distortion corrects barrel or pincushion curvature while keeping the inverse map inside the photograph. Reset Crop restores natural dimensions and returns zoom to Fit.

Crop ratios are composition constraints, not output-size presets. Monochrome Lab Pro maps the confirmed crop back to the full native RAW/16-bit source, so a crop removes only the pixels outside the selected rectangle. Choosing 3:2, 4:5, 1:1, or another ratio does not silently resize the export; only an explicit Layout/output-size operation may change the delivered canvas beyond the crop itself.

On desktop, camera RAW, 16-bit TIFF, JPEG, PNG, HEIF/HEIC, WebP, and other supported raster photographs export through one native-resolution professional render graph. The bounded Edit preview is for responsive editing only; it is never promoted to the authoritative source for a desktop JPEG, PNG, or TIFF when a professional source session is available. Spot Heal, masks, geometry, detail, Black Mist, grain, Finish, borders, split output, and output sharpening are replayed in that graph.

Settings > Application > Export controls persistent export defaults:

- **Default Export** chooses JPEG, PNG, or TIFF. Ordinary JPEG export uses quality 100 at native size; use Export Presets to choose another quality or output size.
- Output enlargement is configured only in **Export Presets**. The former system upsampling preference is ignored after upgrading. Existing export presets keep their quality and resizing settings.

Settings > Print controls final output intent:

- **Output Color Space** defaults to sRGB and can be changed to Display P3.
- **Output Resolution** writes the intended PPI to output metadata.
- **Output Sharpening** can be Off, Screen, or Print. Print sharpening responds to the requested PPI and media surface rather than using one fixed amount.
- **Print Media** distinguishes Glossy / Baryta from Matte / Fine Art for final sharpening behavior.

JPEG export uses Sharp/libvips with selectable 80%, 95%, or 100% quality and 4:4:4 chroma sampling. PNG is lossless. TIFF is a true 16-bit RGB master with lossless Deflate compression and horizontal prediction. JPEG and 8-bit PNG receive full TPDF monochrome-safe dithering only at the final 16-to-8-bit conversion; the Edit uses a matched display-boundary treatment so preview and delivery do not show broad coherent bands.

Professional exports embed the selected output ICC profile instead of blindly carrying the source profile into rendered pixels. Descriptive metadata is rebuilt for the output: JPEG receives EXIF, XMP, and IPTC; TIFF carries ICC, XMP, and IPTC metadata; PNG carries EXIF and XMP, with IPTC fields represented in XMP.

Desktop export files are written to a sibling temporary file, flushed and validated, then atomically renamed into place. A failed encode should therefore leave the previous/final destination untouched rather than exposing a partial photograph.

Original RAW Copy is a separate passthrough format. It copies the camera RAW exactly and never bakes edits into the source.

Print also creates contact sheets, PDF proofs, and native print jobs.

Established professional workflow

The v4 Complete Frame Pack provides Black, Offwhite, and White film borders across the supported ratios. Preview and native export share the same framing, vignette, grain, and detail treatment. Older recipes retain their established rendering, including hidden compatibility values.

Snapshots

Click the **Snapshots** icon in the centered bottom toolbar to toggle the compact chooser. Hover and focus do not activate it. Click **Save S#** inside that panel to remember the photograph exactly as it is now; opening the panel does not save automatically. Monochrome Lab Pro stores the complete non-destructive edit recipe and advances through **S1**, **S2**, and onward without a naming prompt. Click a saved state to restore it or use its trash control to delete it. Restoring a snapshot makes that recipe the live edit, so the next snapshot starts from the state you actually loaded.

Snapshot state is photograph-specific. As soon as another photograph loads, the previous list is cleared; only the newly active photograph's states are then loaded. Delayed data from the former photograph is discarded, preventing its snapshots from leaking into the current image. Deleting a snapshot compacts the automatic S-numbers, so the footer counter, list, and next-save label all reflect the remaining saved states.

Copy and Paste Edits

The existing **Copy Image Edits** and **Paste Image Edits** commands carry reusable tonal treatment together with the active LAB LUT, Spot Heal, masks, lens correction, and finishing controls. Crop and page/output layout remain photograph-specific rather than being copied accidentally across unrelated frames.

100% native detail

Choose **100%** from the existing Edit zoom control to inspect actual source detail from the registered native RAW/high-bit session. Native detail is requested on demand rather than held permanently in memory. Returning to another zoom level closes the native detail surface.

JPEG quality

Open **Export Presets** in the Export card to choose JPEG quality **80%**, **95%**, or **100%**. Apply the preset to use that quality in single-image and Batch Export. All three use the professional Sharp/libvips JPEG path with 4:4:4 chroma sampling and progressive optimized encoding. The JPEG format button has no quality submenu; ordinary JPEG export uses quality 100.

Batch Export

Select multiple photographs in Library and choose **Export Selected**. The background queue uses the native export path and reports progress without replacing the open Edit photograph. See Background Batch Export above.

Print

The Export card is reserved for file delivery and no longer carries a secondary Print button. Contact sheets, PDF proofs, and native print jobs remain available through the established application and Library print commands. Export intent, output PPI, output media, color space, and output sharpening remain configurable in the application's output controls.

If something goes wrong

Monochrome Lab Pro recovers from an interrupted editing window rather than intentionally discarding the session. Catalog edits are persisted independently of Library Worker pause state.

The interrupted-session banner appears only when the previous primary application instance did not complete its safe Catalog shutdown, such as after a force quit, power loss, or crash. Routine launches, normal closes, and attempts to open a second instance do not display it. A normal close is recorded only after the Catalog and pending Library state finish saving.

Use **Help > Diagnostics** when reporting a problem. If a large Library operation is running, let it finish or pause the relevant background category. Repeated interruptions on very large files usually indicate memory pressure; closing other applications gives high-resolution work more headroom. An unavailable update service does not affect editing; automatic failures are recorded only in Diagnostics and retried after the daily interval.

Tethered shooting

Connect a supported camera by USB. In Library Tools, **Tether** stays gray without a connected camera, becomes orange when a camera is ready, and becomes green during an active session. Click Tether, name or choose a session folder, and shoot from the camera. Library opens the destination and shows incoming photographs.

Pause stops intake for the session. **Resume** continues with the same folder. **End** closes the session; starting again asks for a destination, with recent sessions available. Support depends on the camera and its connection mode.

Trial and activation

Choose Start Trial while online to begin the 14-day trial. Activate the same installed app with your purchased code to continue afterward. Trial expiry pauses editing and new exports without deleting originals, saved edits, or Catalog data. An activated license supports up to 30 days offline between successful renewals.