

DarkRoom, shown

The DarkRoom manual · <https://pages.tourolle.paris/dtourolle/darkroom/>

CONTENTS

Opening a library	4
The library	6
Rating and flagging	6
Getting about	8
Selecting several.....	9
Collections.....	10
Bursts.....	12
Duplicate originals	13
Developing a photograph	15
Light.....	16
Looking closer	17
AI denoise	18
Moving between photographs.....	20
White balance from the photograph.....	20
Composing.....	21
Local adjustments.....	23
Repair	25
Film	26
History, snapshots, presets.....	28
Copying settings.....	30
Merging a panorama.....	31
Export	34
Settings.....	37
People	38
Where things are written down.....	39
How this page is made	40

DarkRoom, shown

A tour of what the application does, one picture per thing. Every image on this page was captured from the desktop build driving itself — nothing is a mock-up, and nothing has been retouched outside DarkRoom. Where a feature is better seen moving, it moves.

The requirements behind each feature are in [requirements.md](#); the reasoning is in the design documents linked from each section. This page is only about what you see.

The photographs are the author's. None show a person.

Opening a library

DarkRoom opens on a library: a folder on this machine, a folder a sync client keeps, or a Nextcloud account. A folder needs no password and uploads nothing. **Choose folder...** opens your desktop's own folder dialogue, which can make a new folder too; the folder used last stays on the screen with **Open folder** beside it, and **Choose another...** in place of **Choose folder...**. On a Nextcloud account the library folder is chosen in a browser of the server, whose **New folder** makes one there. (The browser is not pictured: these recordings have no server behind them. Nor is the folder dialogue, which is your desktop's rather than DarkRoom's.)

DarkRoom
Connect a Nextcloud account, or open a folder

SERVER
https://cloud.example.com
Sign in

Sign-in happens in your browser. DarkRoom never sees your password.

or

USERNAME
your Nextcloud username

APP PASSWORD
xxxxxxxxxxxxxxxxxxxxxxxx
Connect directly

Create one in Nextcloud under Settings > Security > Devices & sessions. It is device-scoped and can be revoked on its own.

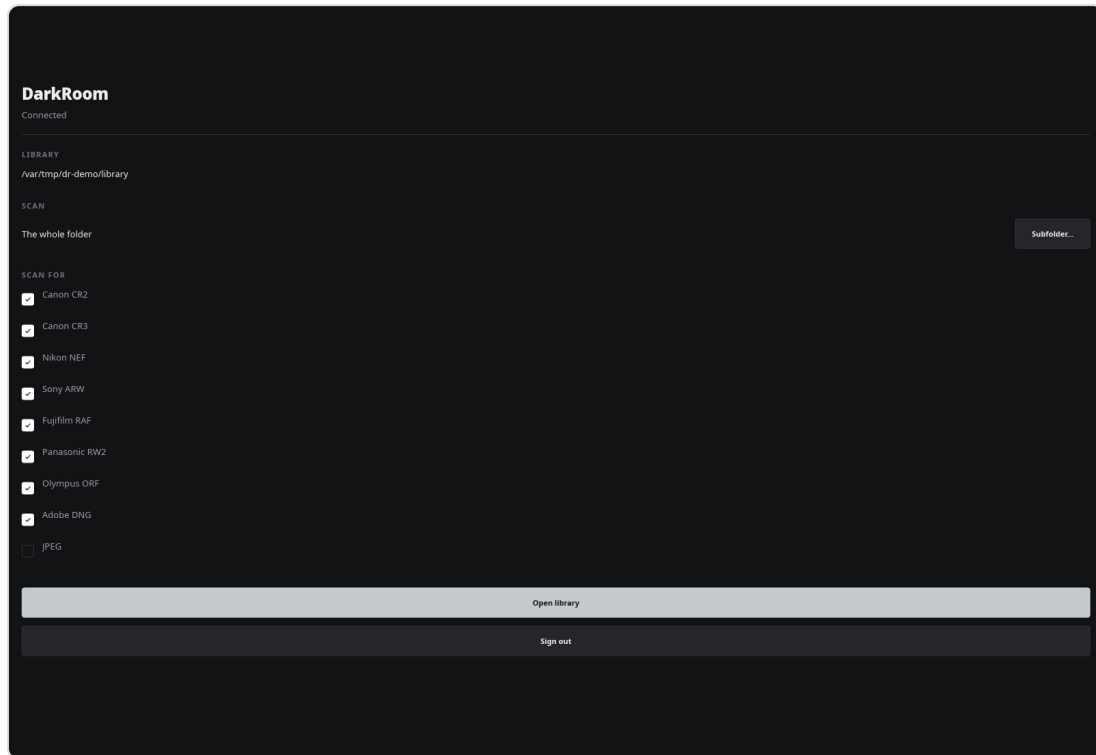
or

FOLDER
/var/tmp/dr-demo/library
Choose another... Open folder

Any folder this machine can read: a local disk, a network mount, or one your Nextcloud client already syncs. Nothing is uploaded and no password is needed.

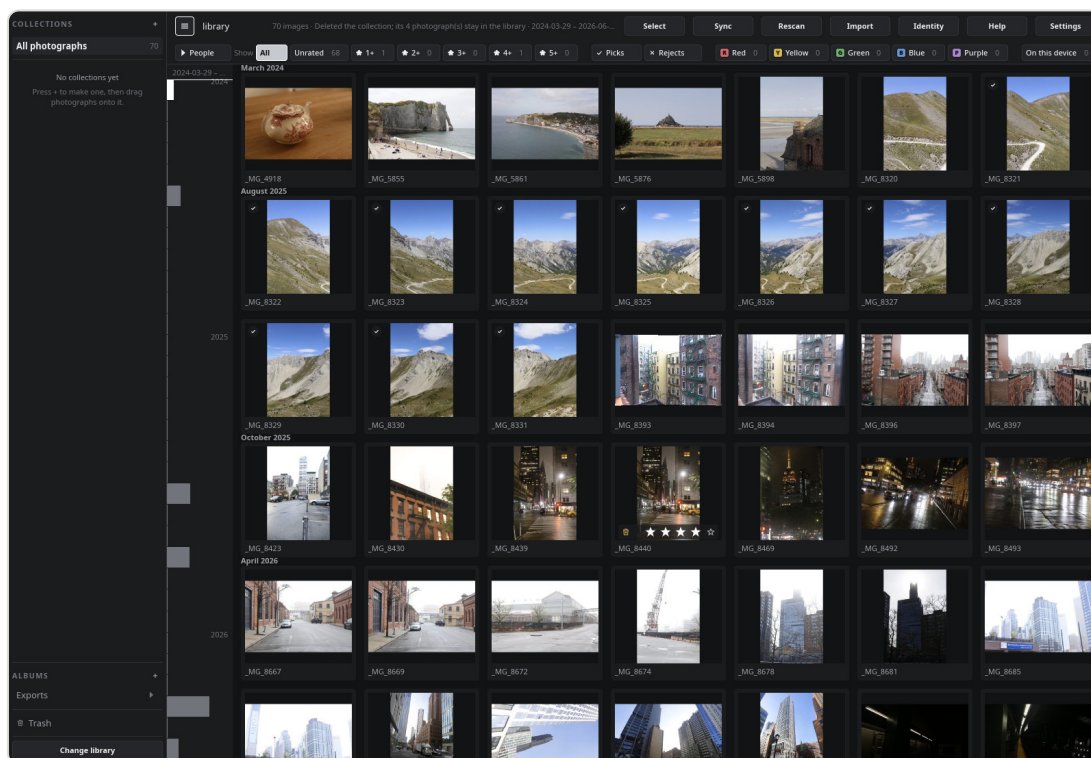
The launch screen: a Nextcloud server or an app password, or the folder used last with **Open folder** beside it

Once a folder is named, it is the library — you are not asked for it again, and **Open library** opens it whole. **Subfolder...** narrows the scan to part of it. The formats ticked are what the scan looks for; RAW is on and JPEG off by default, because a RAW editor's sensible default is the file the camera wrote first. **Change library**, at the foot of the sidebar, comes back here.



A folder chosen: the library, whether to scan a subfolder, and the formats

The library

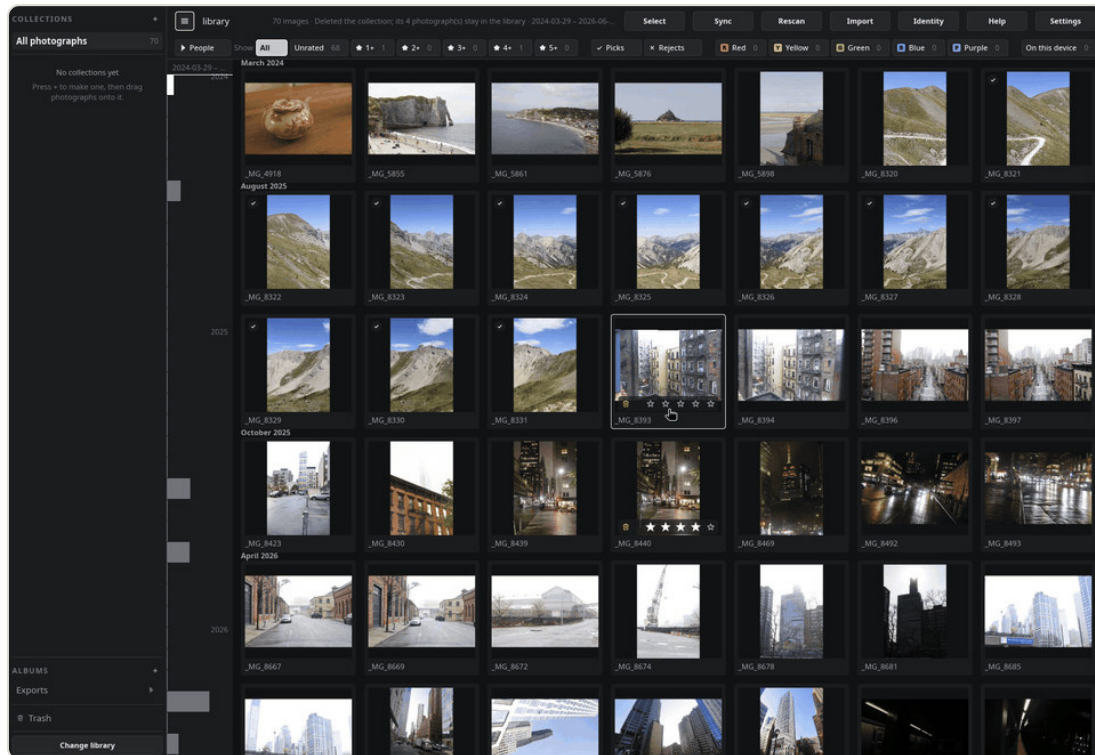


The grid: collections on the left, the timeline beside it, the roll of thumbnails, and the filter bar above

Photographs are ordered by capture time, with a month heading where each begins. The strip on the left is the timeline — drag it to jump to a year. The bar above the grid filters by rating, flag, colour label and where the file is (on this device, or only on the server).

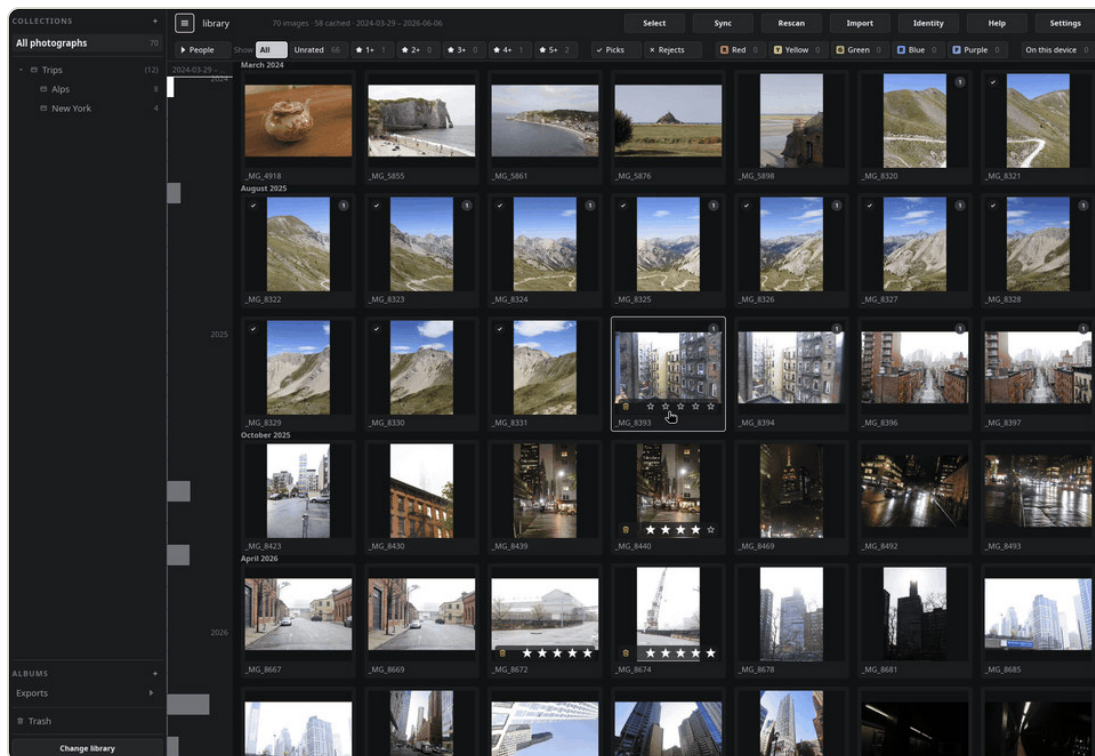
Rating and flagging

Hover a cell and the stars appear; click one. The filter chips above the grid count what each rating holds, and clicking **3+** shows only those. From the keyboard, **0** to **5** set the stars on the photograph under the pointer or on the selection; **P** picks, **X** rejects and **U** takes the flag off, and **Flag** on the selection bar does the same with the pointer. In develop the same keys judge the open photograph and stay on it, and the top bar carries its stars and **Pick** and **Reject**; the roll marks each frame's flag and stars.



Rating two photographs, then filtering the grid to three stars and more

Colour labels work as Lightroom's do: **6** red, **7** yellow, **8** green, **9** blue, on the photograph under the pointer or on the selection, and the same key again takes the label off. **Label** on the selection bar offers all five, purple included, and **None**. Each label is drawn with its initial on it, so it reads without telling the colours apart, and the filter bar has a chip for each. In develop, the top bar names the open photograph's label and sets it, and the same keys work there.



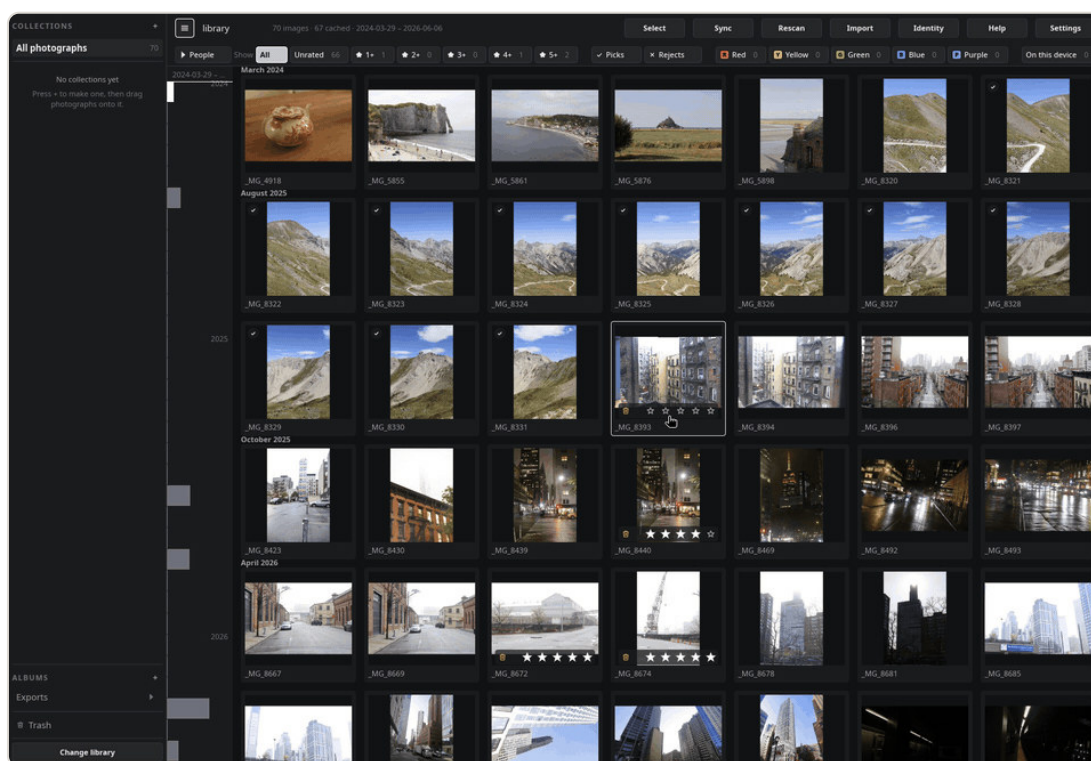
Labelling four frames with 6, 7, 8 and 9, taking one off with the same key, and filtering the grid to green

Getting about

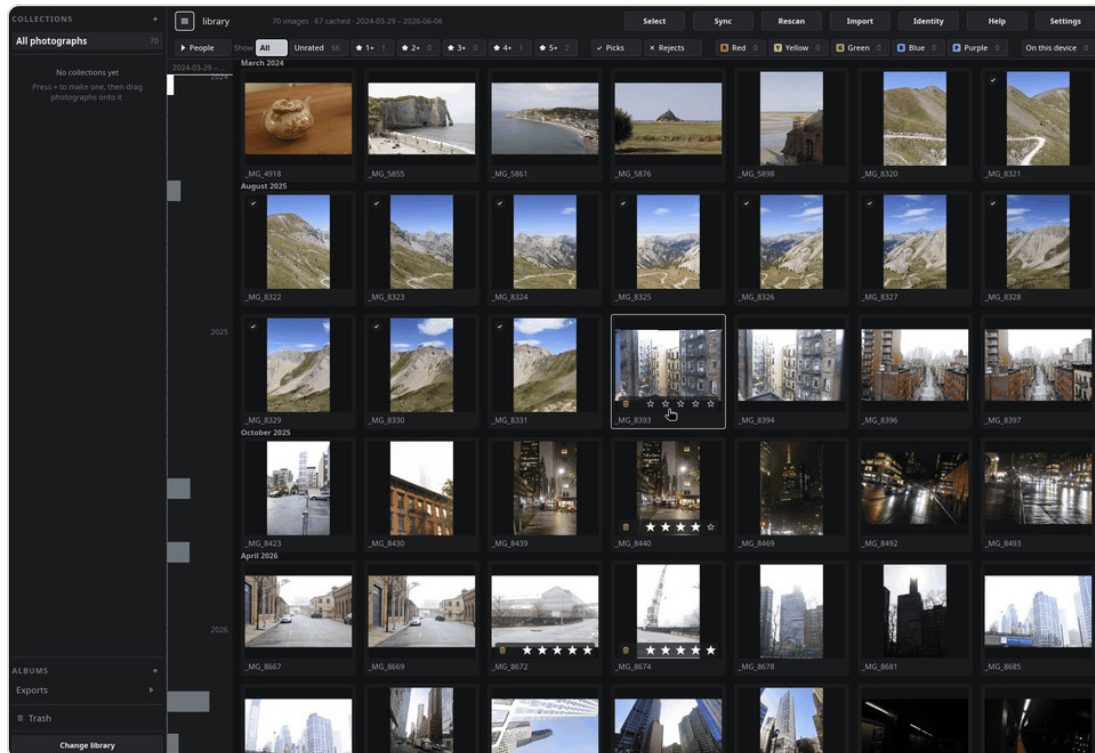
Drag the timeline to scrub through years; Ctrl and the wheel resize the thumbnails. On a desktop a scrollbar beside the grid says how far through the library the view is — drag its thumb, or click the track to move a page — and the sidebar, the develop column and Settings have one too whenever they run past the window. On a tablet they scroll by flick alone, and a thin line at the right-hand edge shows where the view is while it moves, fading once it stops; it is only a picture, and a flick that starts on it scrolls the list.

A panorama gets a wider cell: about twice as wide as it is tall and it spans two columns, then three, then four for the widest — whichever leaves the least of the cell empty — with a thumbnail made for that width. One that would not fit in what is left of a row starts the next, so the grid still reads in the order the photographs were taken; the arrows walk it in that order, and up and down go to whatever is above or below. On a tablet, or with too few columns to put it beside anything, a panorama takes the whole row.

Help in the header, or **F1**, opens the controls and shortcuts: every key and gesture, screen by screen, with **See it** beside those this page shows, and **Manual** to open this page. In develop it is the **?** beside **Settings**.



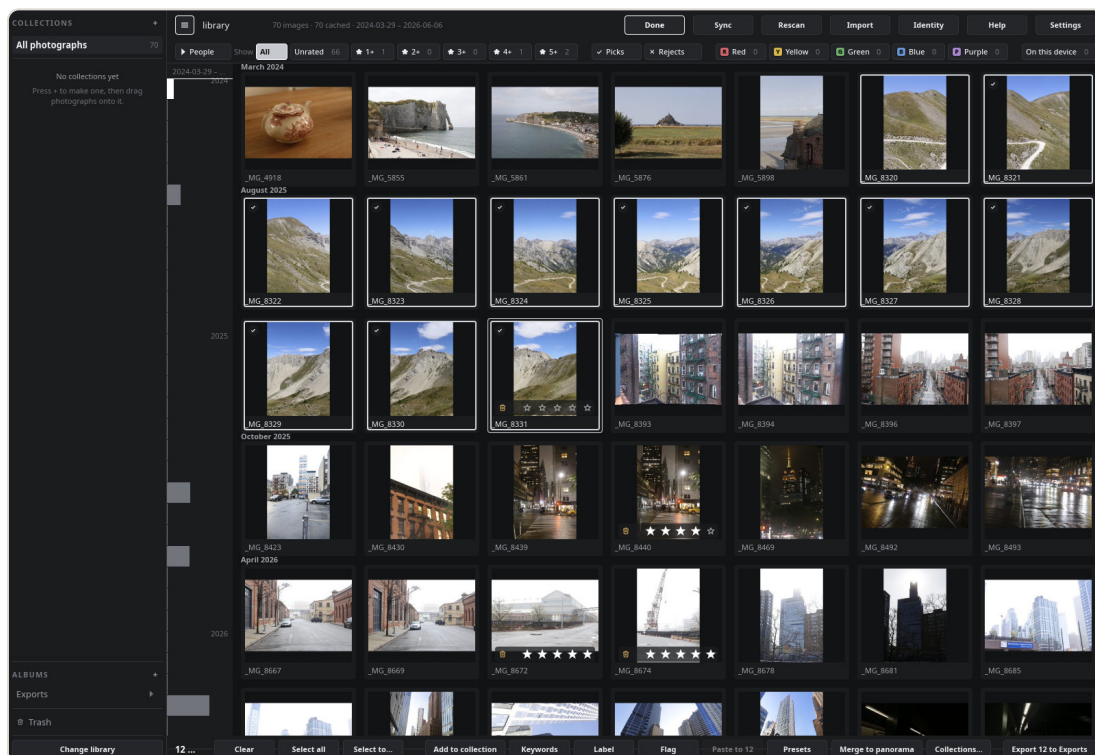
Scrubbing the timeline



Resizing the thumbnails with Ctrl and the wheel

Selecting several

Select in the header — or Ctrl-click — starts a selection. Shift-click picks a range. The bar at the foot of the grid is everything a selection can be done to: collections, keywords, presets, export, and merging to a panorama.



Twelve photographs selected, with the selection bar along the foot of the grid

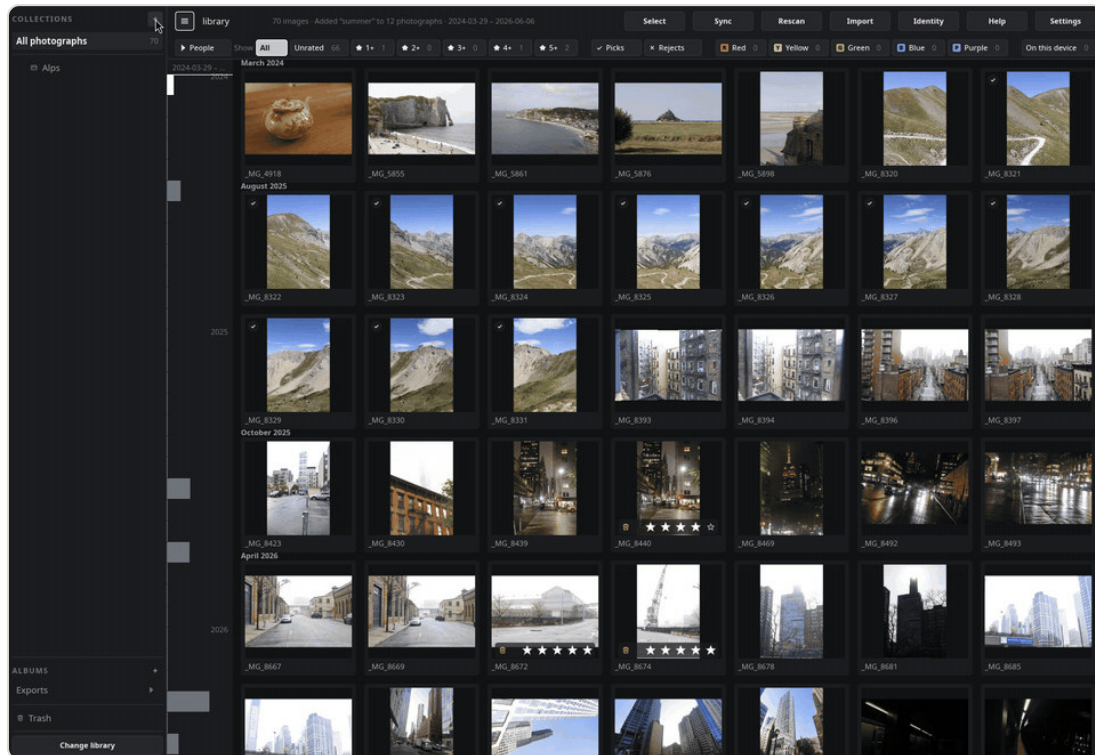
Keywords on that bar opens a sheet; type a word and press return, and it is on every photograph selected. The list below the field is every keyword the library has, ticked where the selection carries it.



Keywording twelve frames

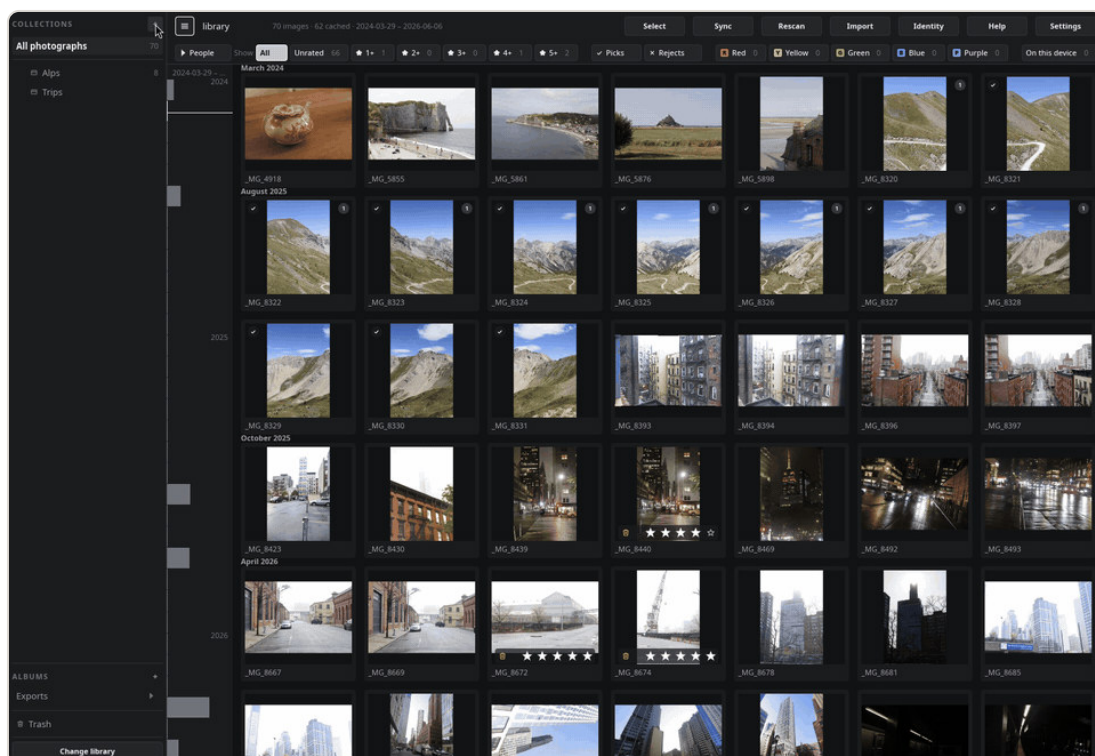
Collections

+ at the head of the sidebar makes one. Drag a photograph — or the whole selection — onto its row to file it there; click the row to see it. A photograph can be in several, and the badge on its cell counts them.

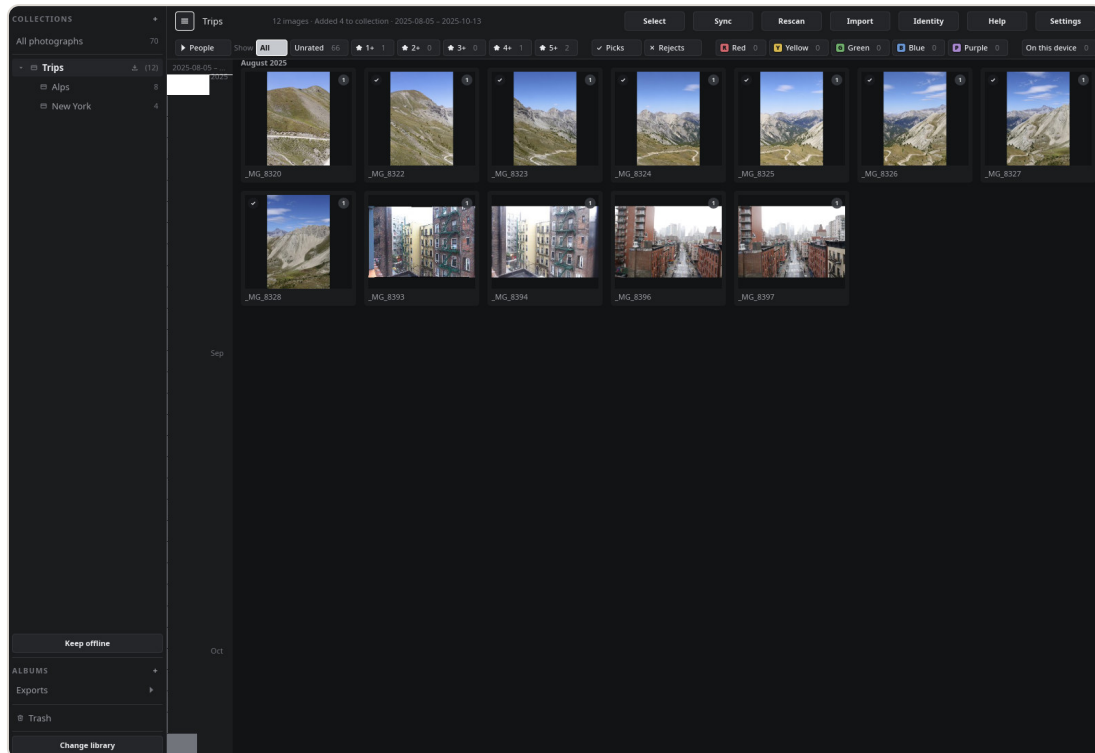


Filing photographs in a collection by dragging them onto it

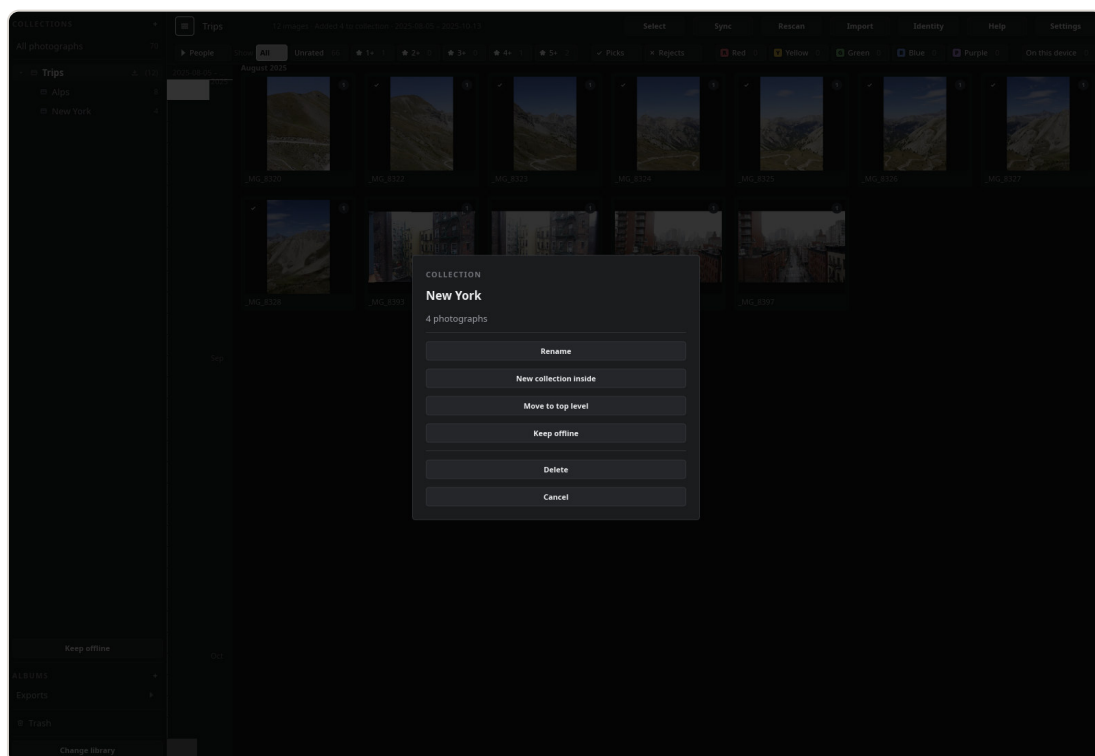
Collections nest. Drag one onto another to put it inside; **+** with a collection selected — or **New collection inside** from its menu — makes a child. A parent shows everything its children hold, and its count says so. Right-click a row (hold it, on a tablet) for the menu: rename, nest, move back to the top level, keep it offline, delete.



Making Trips, nesting Alps and New York inside it, and opening the parent



Trips showing both of its children's photographs



The menu on a collection

Bursts

Frames taken a moment apart that look alike fold into one cell, with a badge counting them. Click the badge — tap it, on a tablet — to open the burst in the grid, and again to fold it back. A folded burst shows its earliest frame; to have it show another, open it and click the ring on the frame you want.

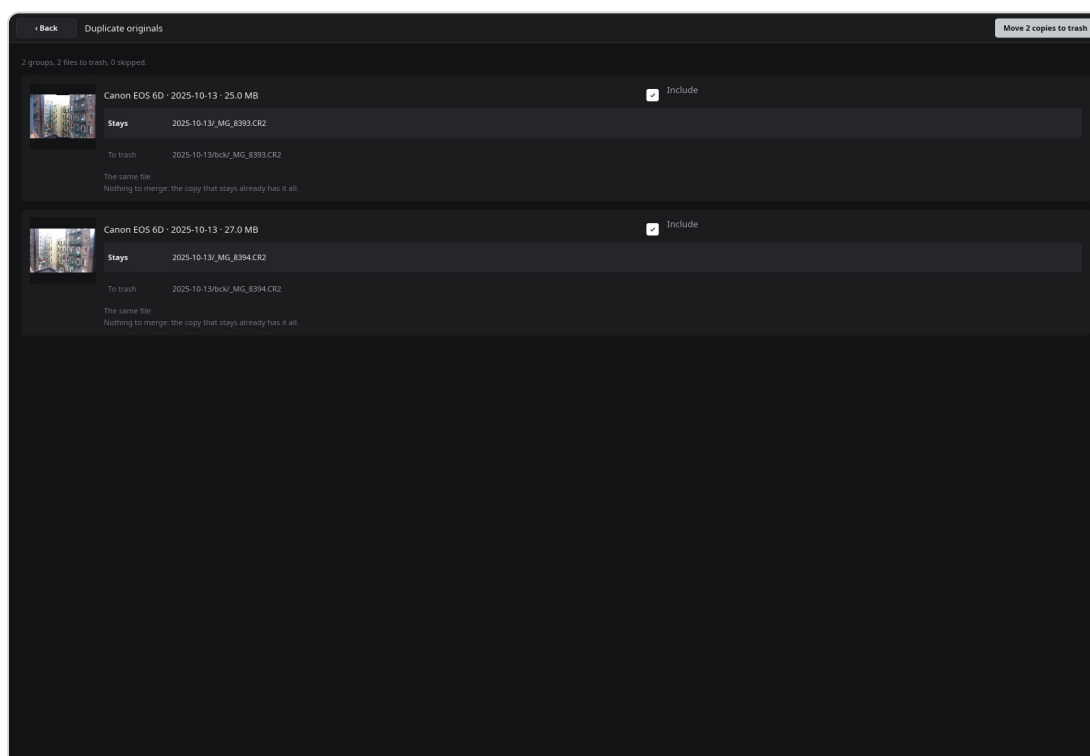
With faces indexed, narrowing the grid to a person puts **Eyes open** beside their name on the filter bar, which leaves out the frames where they blinked.

Duplicate originals

A library put together by hand often holds the same RAW more than once — a dated folder, a **bck** folder beside it, a renamed copy another program exported. When the catalog finds files with the same camera, capture time and size in more than one place, **Duplicate originals** appears under the trash in the sidebar with how many there are; Settings offers the same page beside the other whole-library passes.

The page lists each group with its picture and its paths. One copy is marked **Stays**: the one outside a folder named like a backup (**bck**, **backup**, **copy**, **old** ...), then the one still named the way the camera named it (**_MG_4623**, **IMG_0001**, **DSC_0042**), then the one catalogued first. Tap another path to keep that copy instead, and untick **Include** to leave a group alone.

Nothing moves until **Check** has read the first and last megabyte of every copy and each copy's sidecar. A group whose files differ, or whose copies carry two different edits, is marked skipped and says why — two edits of one frame are kept for virtual copies. What the check reads is kept, so a second visit costs nothing. The line under each group says what the copy that stays will gain: the highest rating, every keyword and collection, a flag or label the copies agree on, faces and the names on them, and the edit if only a copy had one. Where the copies disagree on a flag or a label, the one that stays keeps its own and the line says so.

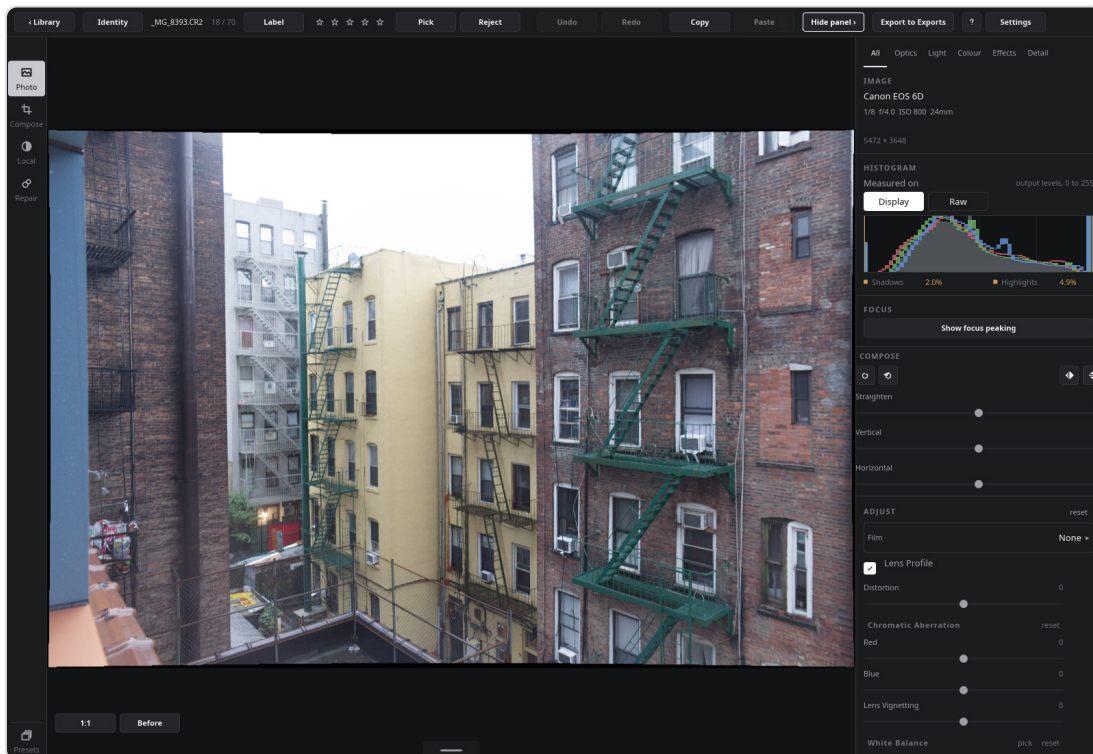


Two frames with a copy each in a bck folder, checked and proved the same, the copy that stays marked on each

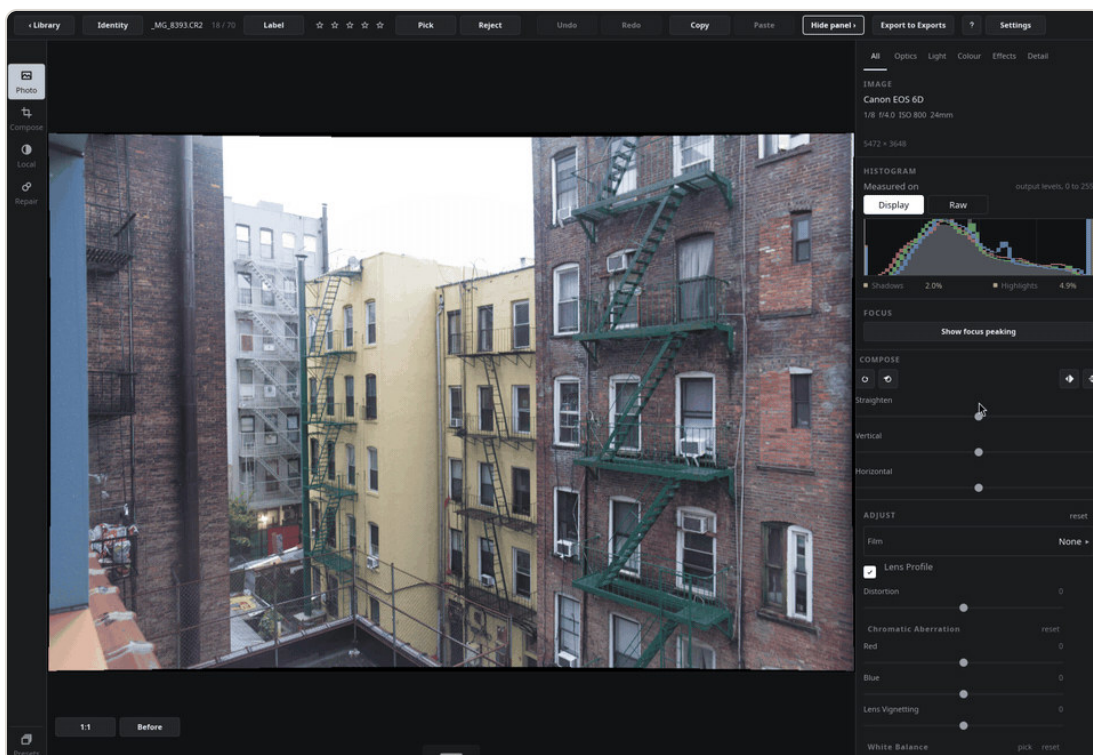
Move N copies to trash does it, one group at a time: each group is merged and its spare copies moved together, or not at all. The copies go to the trash, not away — select them in the trash view and **Restore** puts them back where they were.

Developing a photograph

Click a thumbnail to open it. The column on the right is every adjustment; the strip at its head narrows it to one group.



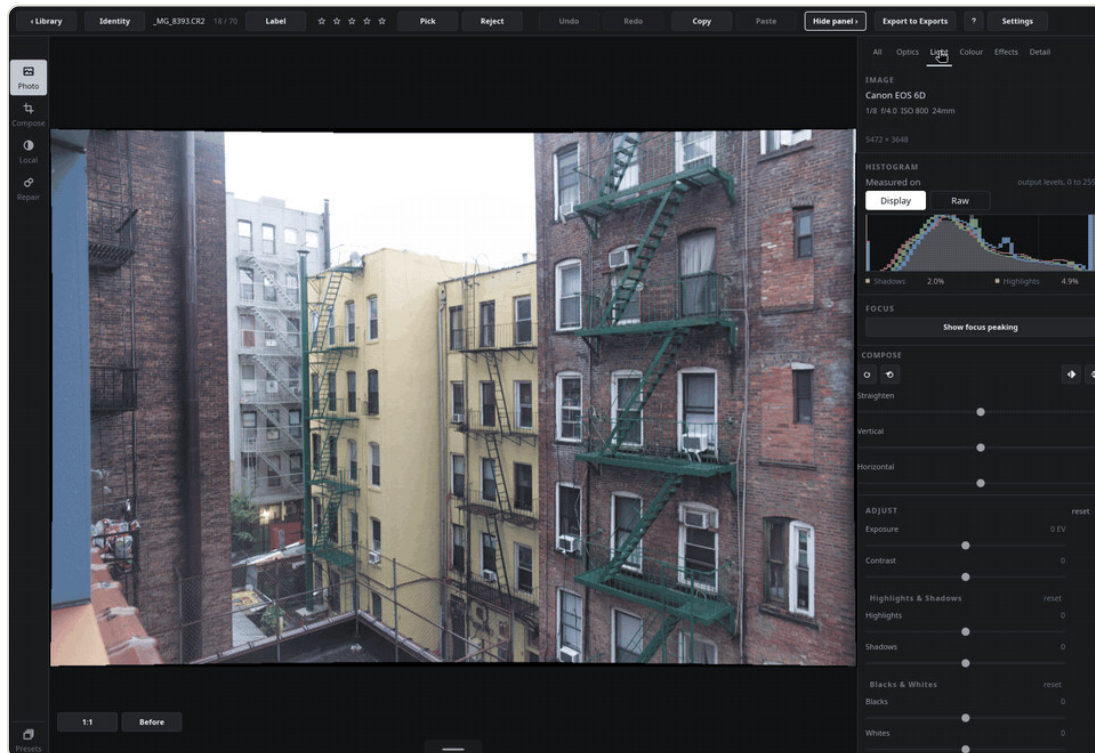
The develop view: the photograph, the histogram, and the adjustment column



Switching between the Optics, Light, Colour, Effects and Detail groups

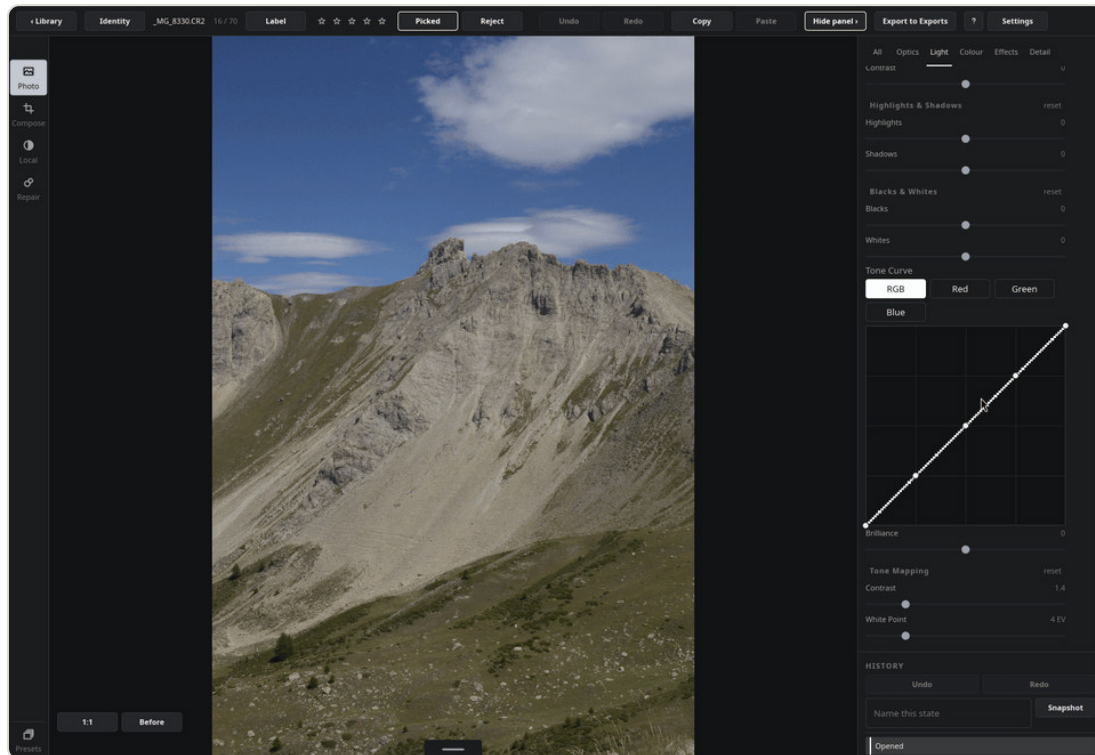
Light

Exposure, contrast, highlights, shadows, blacks, whites and a tone curve. Hold **Before** to see the photograph as it was.



Raising exposure, pulling the highlights, lifting the shadows, then holding **Before**

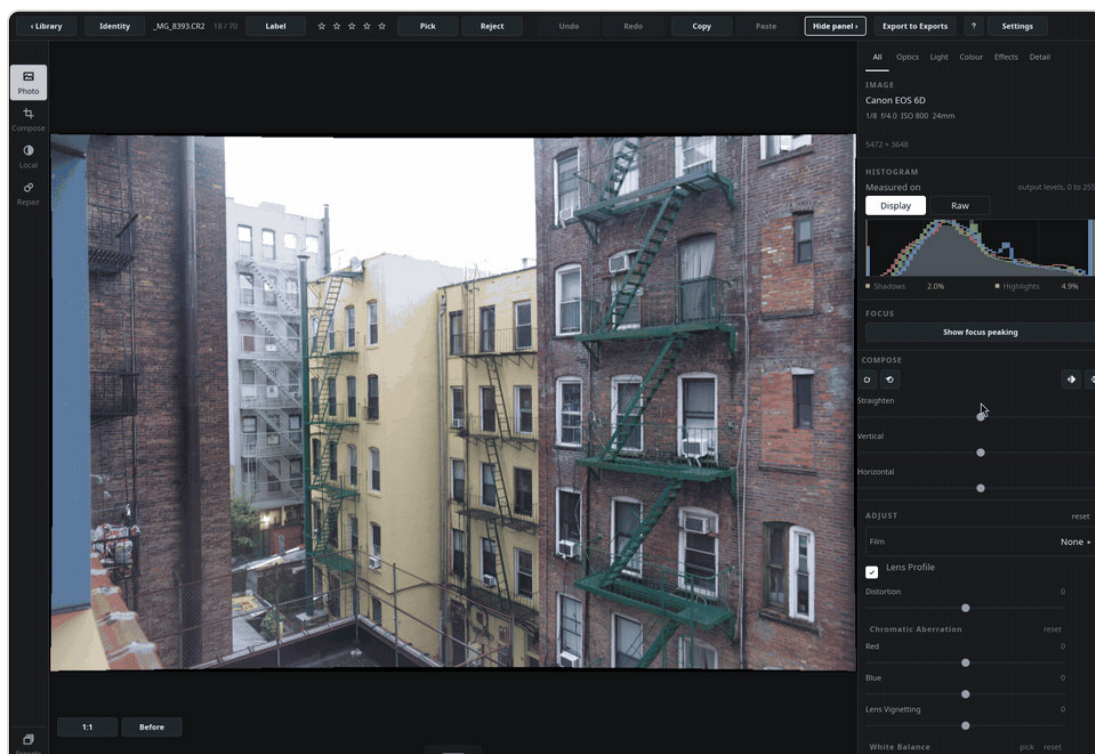
Tone Mapping, last in the group, is how the scene is fitted onto the screen, and it runs after every other adjustment. **White Point** says how many stops above middle grey reach white — raise it to bring a bright sky back from white, lower it for a brighter, punchier picture — and **Contrast** sets the slope of the curve between. Every adjustment above it works on the scene as the camera recorded it, highlights beyond white included, so pulling the highlights recovers what the sensor caught rather than what the screen could show. A JPEG has been fitted to a screen already, by the camera, so on a JPEG these two do nothing.



Raising the white point to bring the clouds back from white, lowering it for a brighter picture, raising the contrast, then holding Before

Looking closer

Double-click for 1:1; drag to move about; double-click again to fit. The wheel zooms to any amount in between. Past 1:1 the file's own pixels are drawn as hard-edged blocks rather than smoothed, so what you see is what the sensor recorded.



Zooming to 1:1 with a double-click, panning, then further in with the wheel

AI denoise

How every raw is developed. **AI Denoise**, at the top of the Adjust panel, replaces how the camera's raw data is turned into colour: a network trained on this library's own photographs removes the noise and the blotches of colour that come with it, while keeping the fine detail. Look at it at 1:1, where noise lives.

Method chooses how:

- **Best**, the default: clean skies and sharp lettering, edges kept as crisp as the camera recorded them.
- **Fast**: a smaller network, taught the same way. Visibly noisier at very high ISO than **Best**, but still far cleaner than none, and quicker.
- **Bilinear**: the camera's ordinary conversion, noise and all.

A photograph last edited with **Medium**, which earlier versions offered, opens with **Best**.

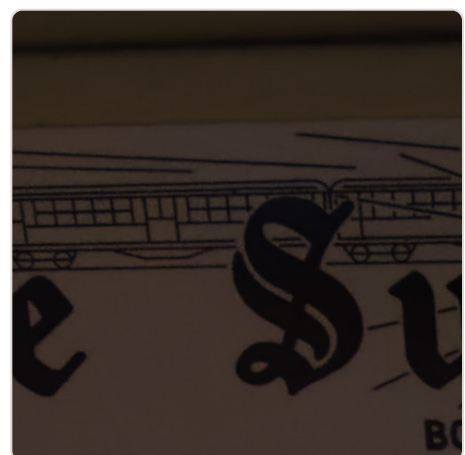
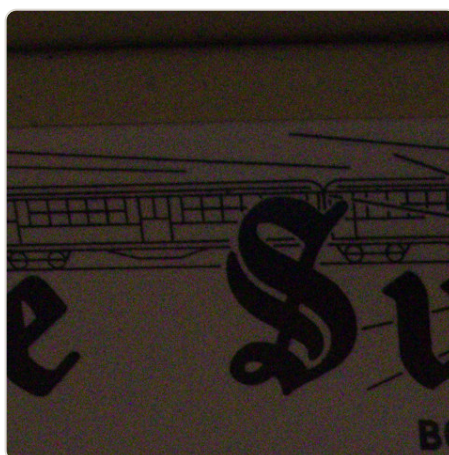
The photograph shows the camera's ordinary conversion while the network works, with its progress in the bar at the top, and changes when it is done — on a laptop's graphics card, about a second for a 20-megapixel photograph with **Best**, reading the file included; longer on a processor alone or on the tablet. After installing, the graphics card spends up to a quarter of an hour preparing each network, once, in the background; the photographs developed meanwhile take a little longer. The result is kept, so a photograph opened again, or exported, does not wait a second time, and switching back to a method already used is quick. **Strength** eases it off: below 100 % it puts back some of what was removed, as grain without colour, for a picture that does not look too smooth.

Five sharp photographs at high ISO, each at 1:1 where hard edges meet flat areas, as the camera's ordinary conversion gives them and as **Best** develops them. The grain goes from the flat paper, stone, canvas and paint; the lines, the lettering and the carving keep their edges:

Bilinear

Best

ISO 4000



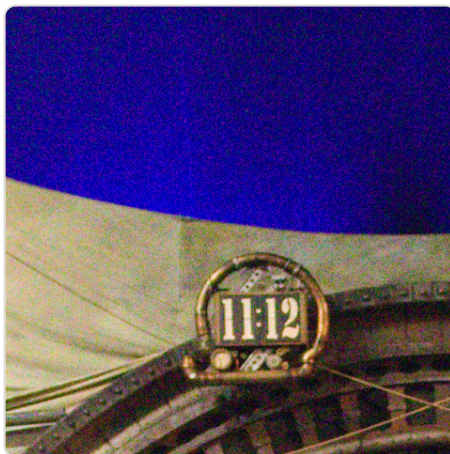
Bilinear

Best

ISO 8000



ISO 12800

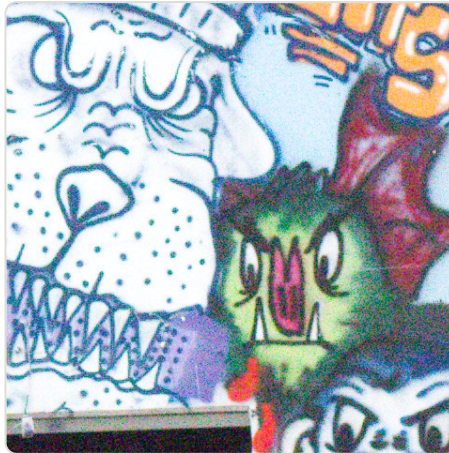


ISO 16000



Bilinear**Best**

ISO 16000



It works on raw files from any camera with the usual colour pattern of red, green and blue squares — not on JPEGs, and not yet on Fujifilm's X-Trans. How noisy the camera is at each ISO was measured for the Canon EOS 6D; for other cameras it is read from a DNG's own figures or estimated from the photograph, and the finished job in the activity list says which. An export uses the method the photograph has.

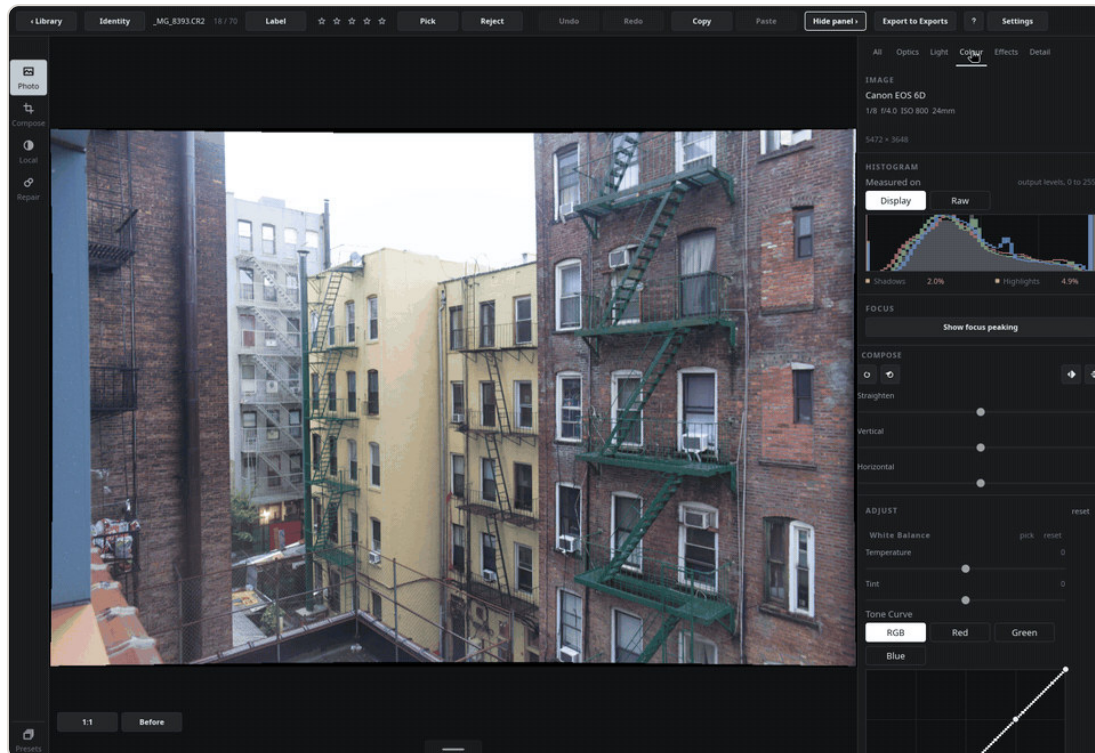
Moving between photographs

The roll along the foot of the canvas holds the photographs the grid was showing; click one to open it. The right arrow, **D** or space opens the next, and the left arrow or **A** the one before; held down, they go on past the stretch the roll has loaded, through everything the grid would show. The edit on screen is saved on the way, so stepping along a shoot loses nothing.

On a Nextcloud library a photograph may not be on this device yet. Its thumbnail from the grid stands in at once; if the original has to come down, the thumbnail dims under *Not on this device yet*, with how far the download has got — **Downloading — 12.4 of 38.0 MB** — and a bar, and the photograph opens when it lands. Step on before then and the one you step to is the one that opens: a download that arrives late is kept for later and never takes the place of the photograph whose name is showing. (Not pictured: a folder library, which these recordings use, never has a photograph to wait for.)

White balance from the photograph

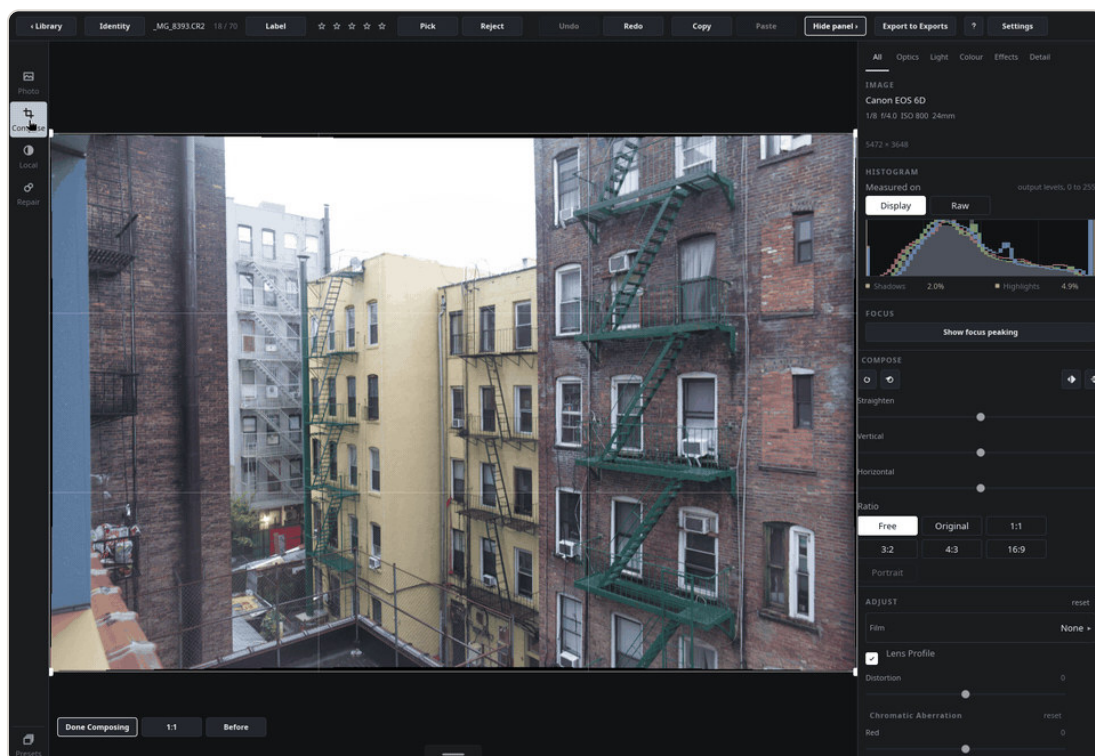
Press **pick** in the White Balance group, then click something neutral — a white wall, a grey card, the air conditioner here. The picker sets the sliders from the photograph, not from where they were: below, the frame is dragged cold first and one click puts it right. A blown highlight is refused, since a clipped pixel has no colour left to balance.



Cooling the frame with the slider, then picking a white air conditioner to set the white balance

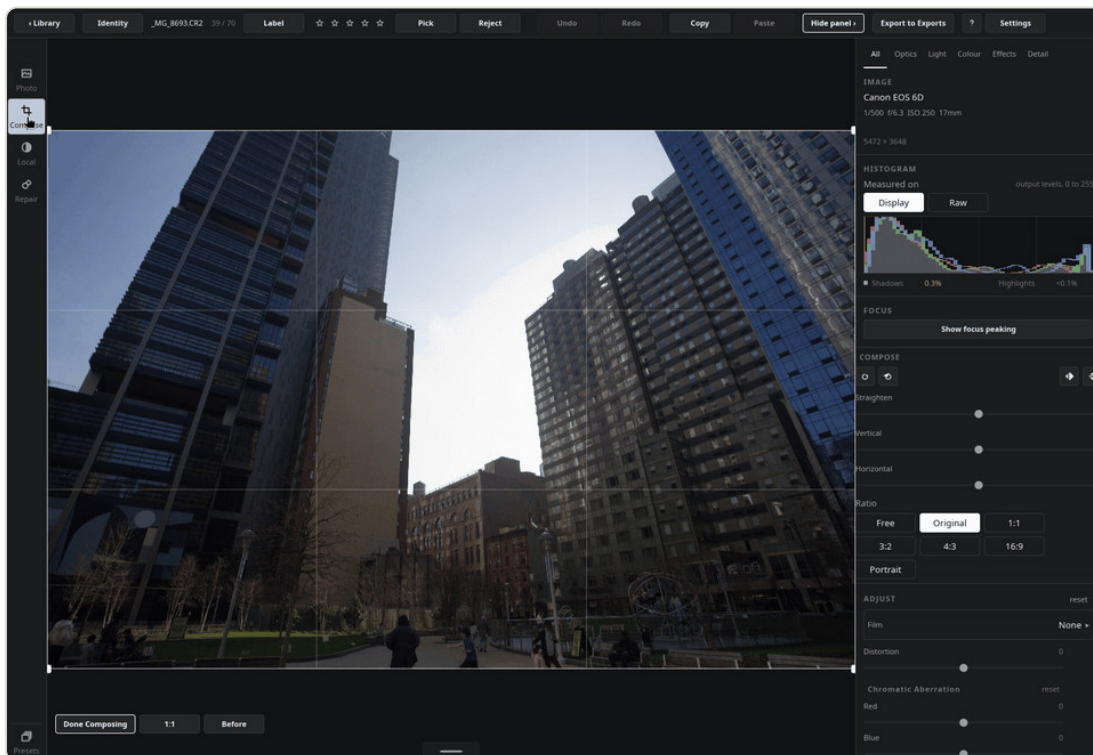
Composing

Crop by dragging the frame's corners, straighten with the slider, lock a ratio from the chips. **Done composing** returns to the photograph.



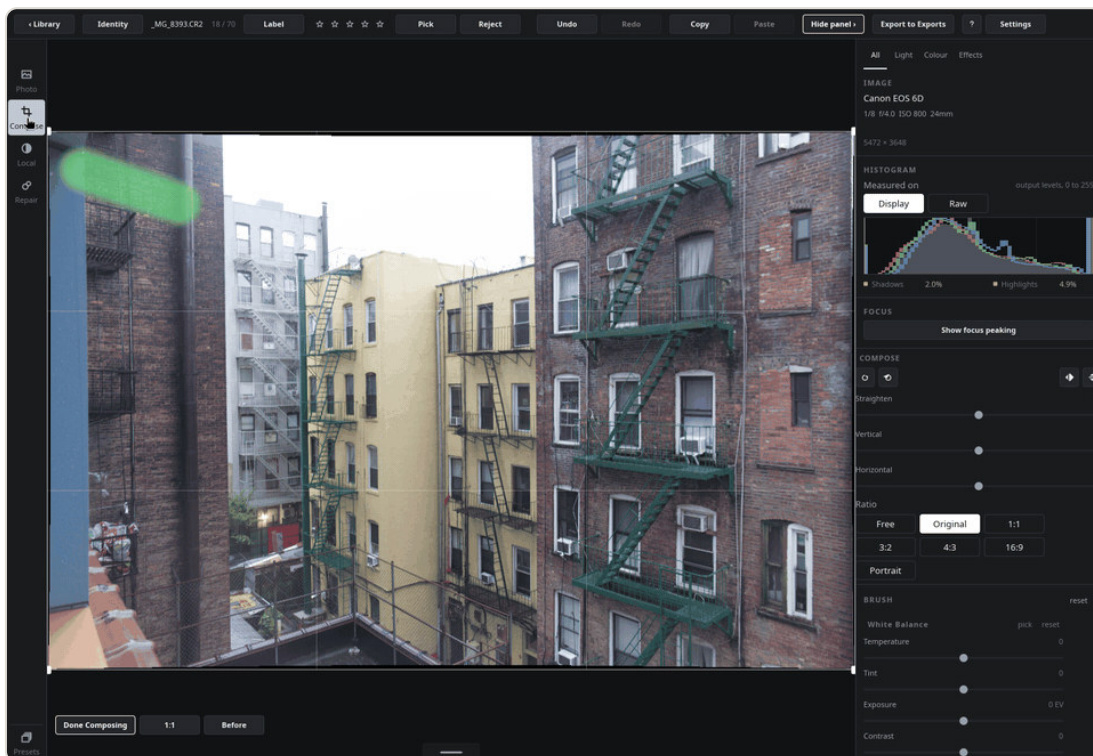
Cropping, straightening and choosing a ratio

Vertical and **Horizontal**, under **Straighten**, correct the lines that converge when the camera is tilted up at a building; the crop refits to what is left.



Standing towers shot from below upright with the Vertical slider

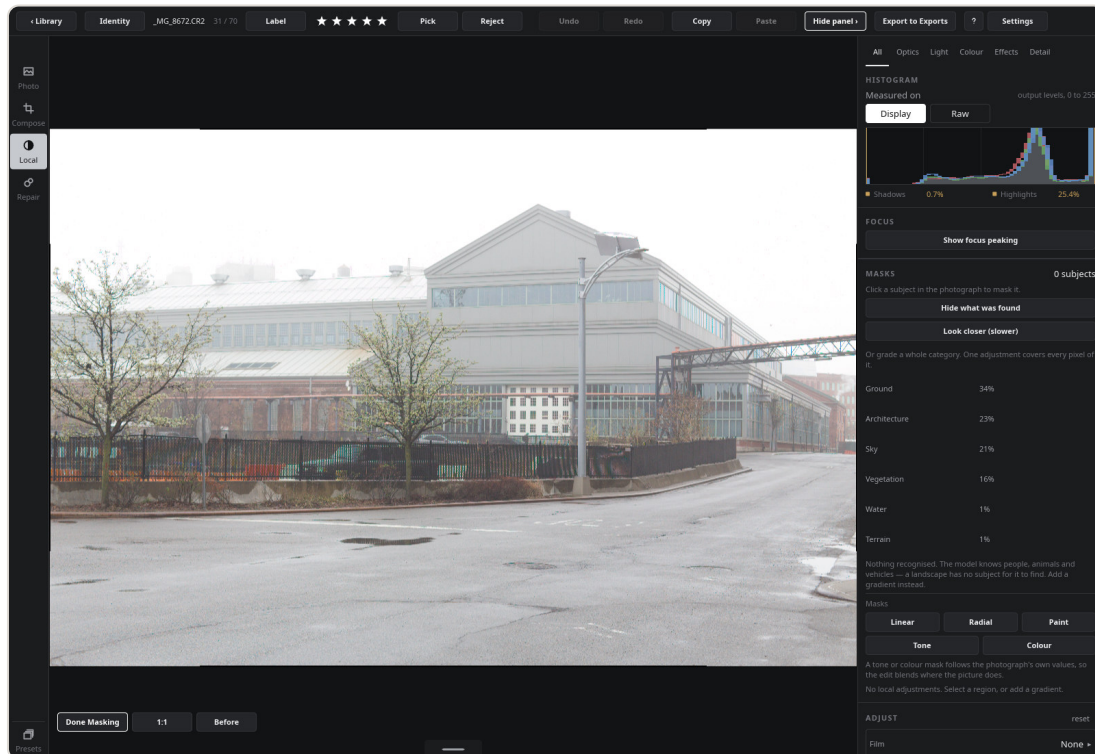
A crop that leaves a mask wholly outside the frame says so, and offers to take the crop back or keep it.



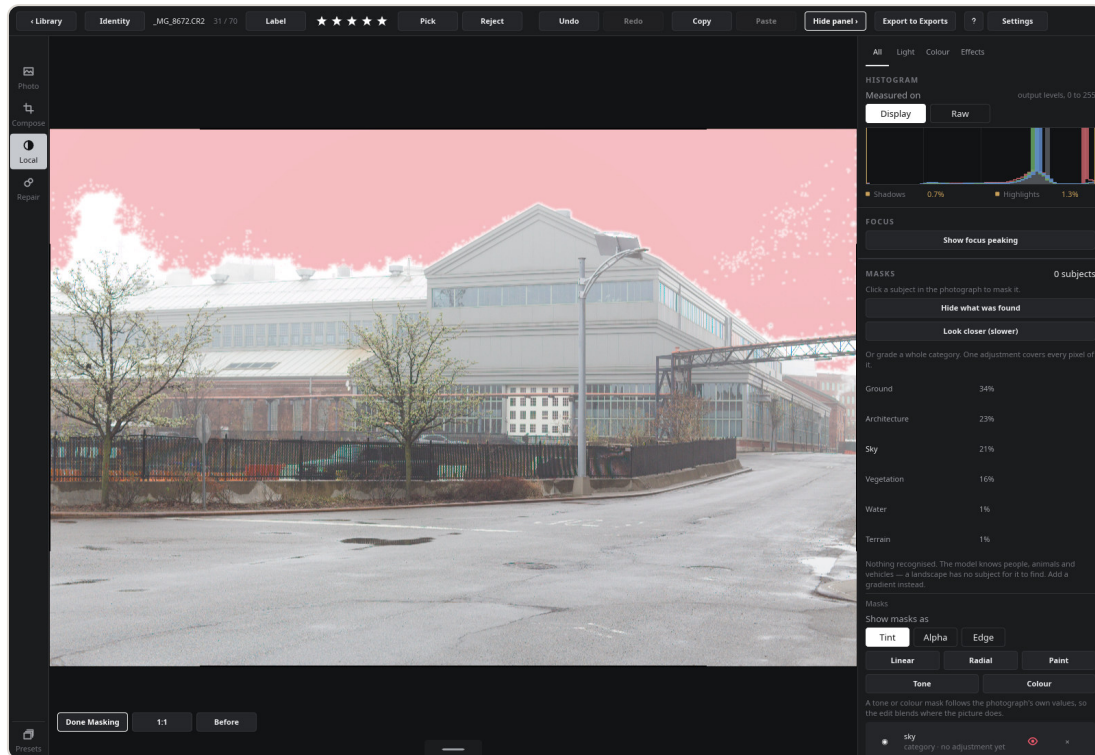
A stroke in a corner, a crop that leaves it outside, and the notice with Undo crop and Keep crop

Local adjustments

Local in the rail turns the column into a mask stack. **Find subjects** runs a segmentation model over the photograph; what it recognises appears as a list of categories with how much of the frame each covers. Click one and it is a mask — then every slider below edits only that region. A mask's slider adds to the photograph's own rather than repeating it: contrast -20 in the mask over -30 on the whole frame is -50 there, and $+30$ in the mask cancels the frame's -30 inside it.

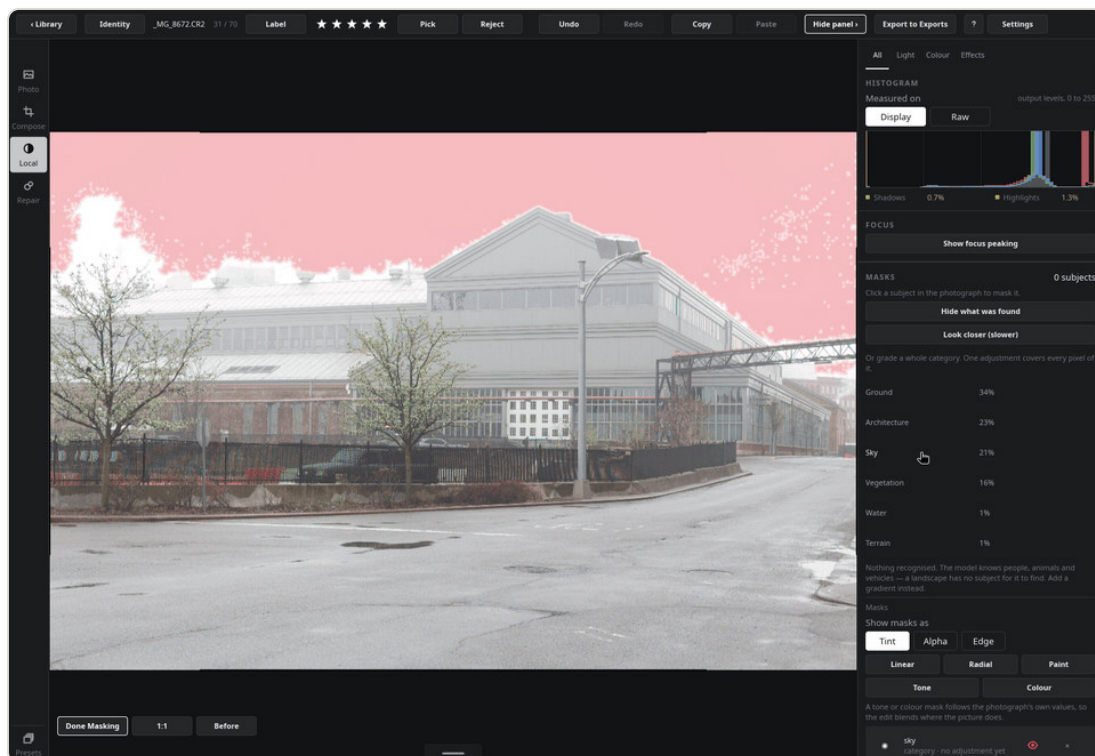


What the model found in an urban scene: ground, architecture, sky, vegetation



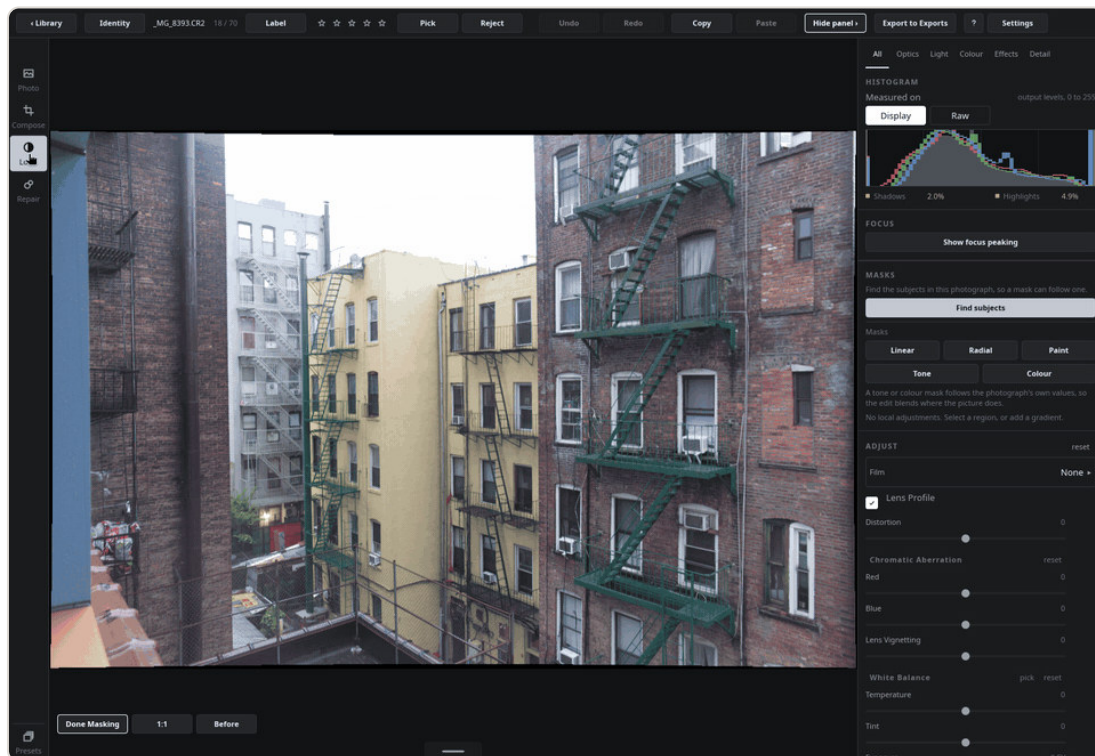
The sky chosen: tinted on the photograph, and the column now scoped to it

A mask is a stack of parts. Paint into it, subtract a gradient from it, grow or shrink its edge, choose how it falls off. **Show masks as** draws the mask tinted, as alpha, or as an outline; the eye on its row switches it off.



Looking at the mask three ways, painting into it, then growing its edge

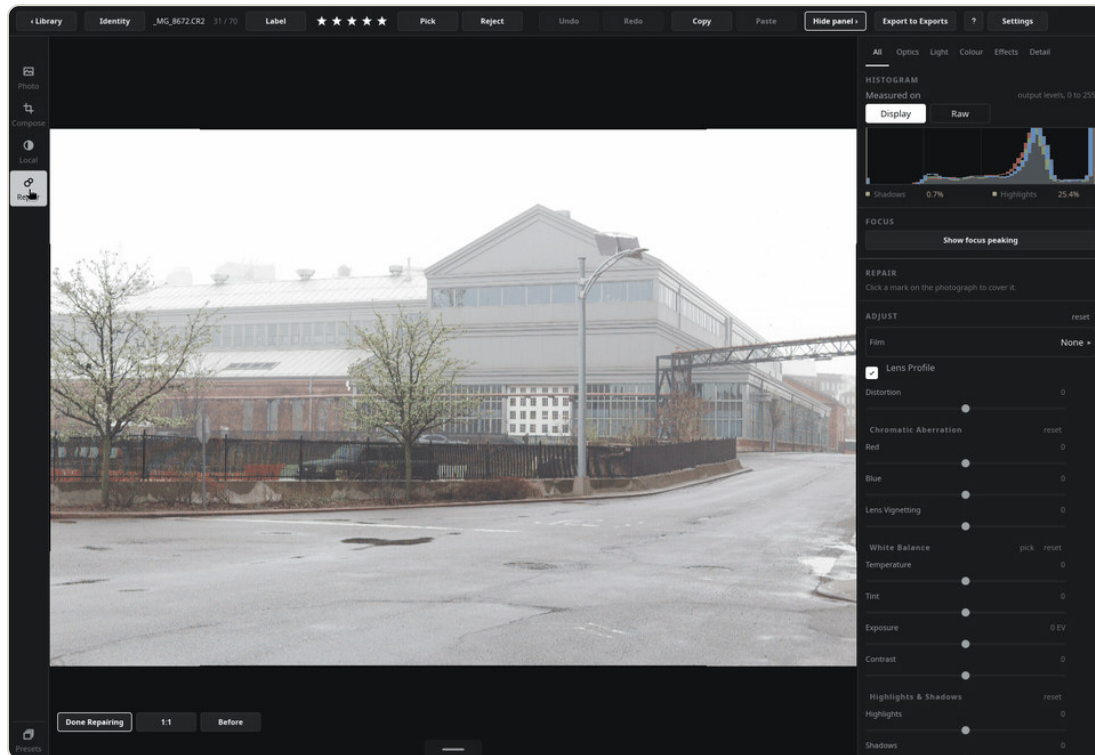
Linear and radial gradients, a tone range and a colour range are the other ways to make one; each can be combined with any other. **Intersect** keeps only where the new part and the mask agree: below, a gradient over the lower half, then two strokes that survive only where the gradient is.



A linear gradient, then Intersect and two painted strokes

Repair

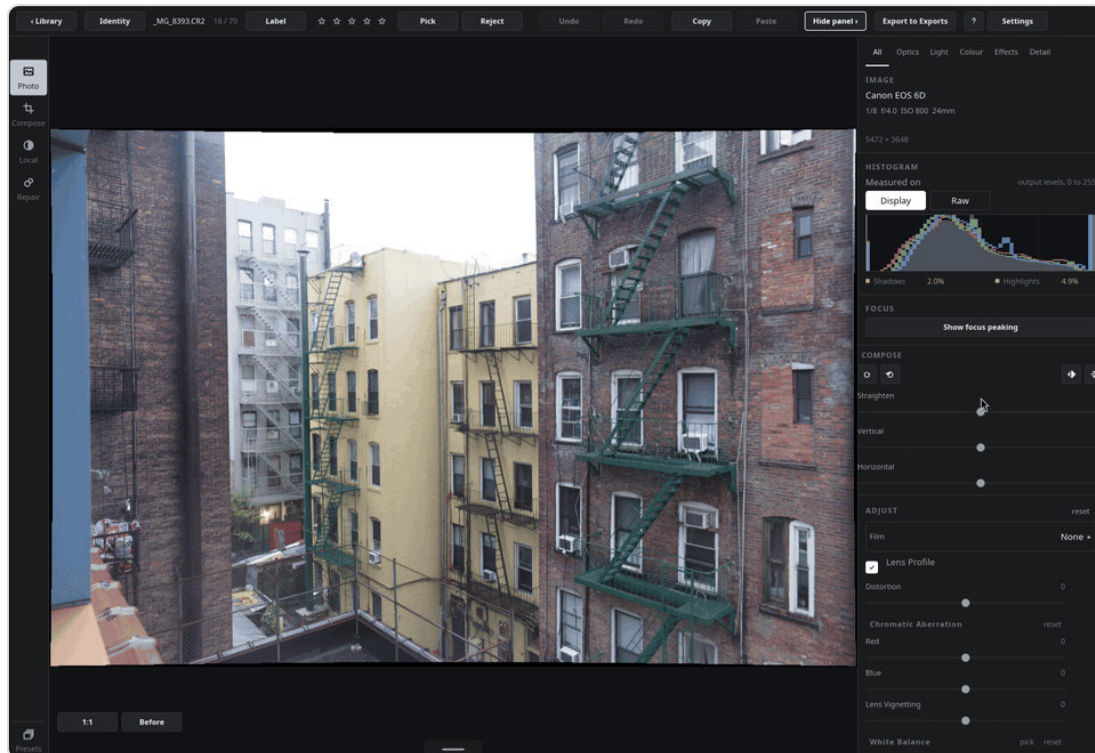
Repair in the rail: click a mark and it is covered from a source DarkRoom chooses beside it. Drag either circle to move it; the size, feather and opacity are in the panel. Heal blends; clone copies.



Covering marks on a road

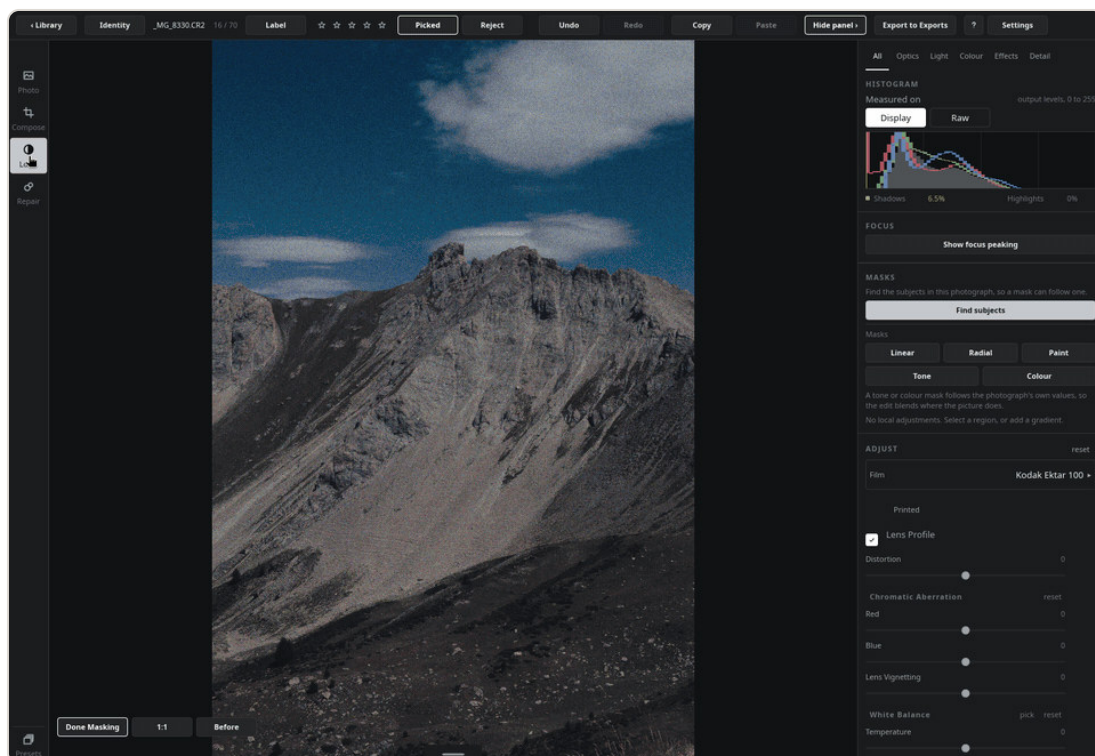
Film

The **Film** chooser at the head of Adjust applies a spectral simulation of a named stock; below it, the print exposure and push controls a film has and a sensor does not. A stock takes the place of **Tone Mapping**: it is the last thing that happens to the picture, so every other adjustment decides the exposure the negative receives. The list opens over the column and scrolls on its own — by wheel, drag or flick, or with **Up**, **Down** and **Enter** — down to the black-and-white stocks at its end.



Opening the film list, scrolling it, choosing Velvia, then holding Before

The film's sliders work on a mask as they do on the whole photograph, the way a printer dodges and burns: in a layer, **Print Exposure** darkens or lightens that region of the print, **Push** develops it further, and the stock stays the one the photograph was made on. Where layers overlap, the photograph takes the average of what they ask for. Below, a negative stock on an alpine frame, then a gradient over the sky whose **Print Exposure** burns it in.



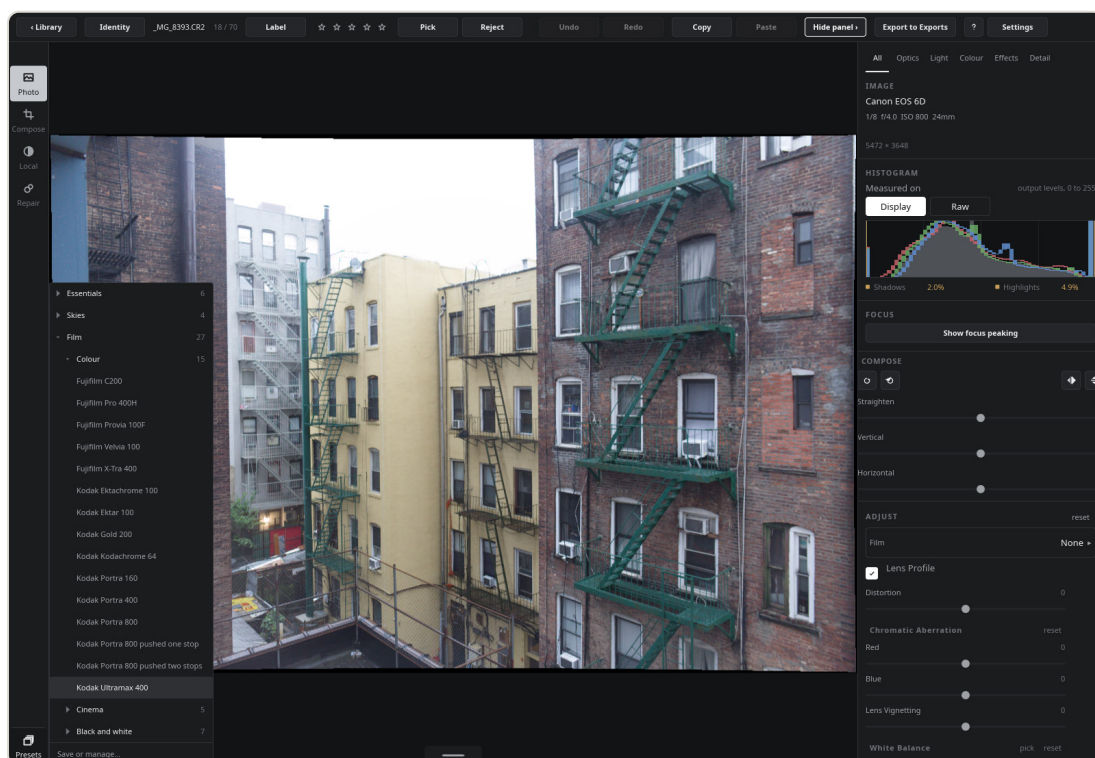
Kodak Ektar 100 on the whole frame, a gradient turned to cover the sky, its **Print Exposure** raised to burn the sky in, then holding Before

History, snapshots, presets

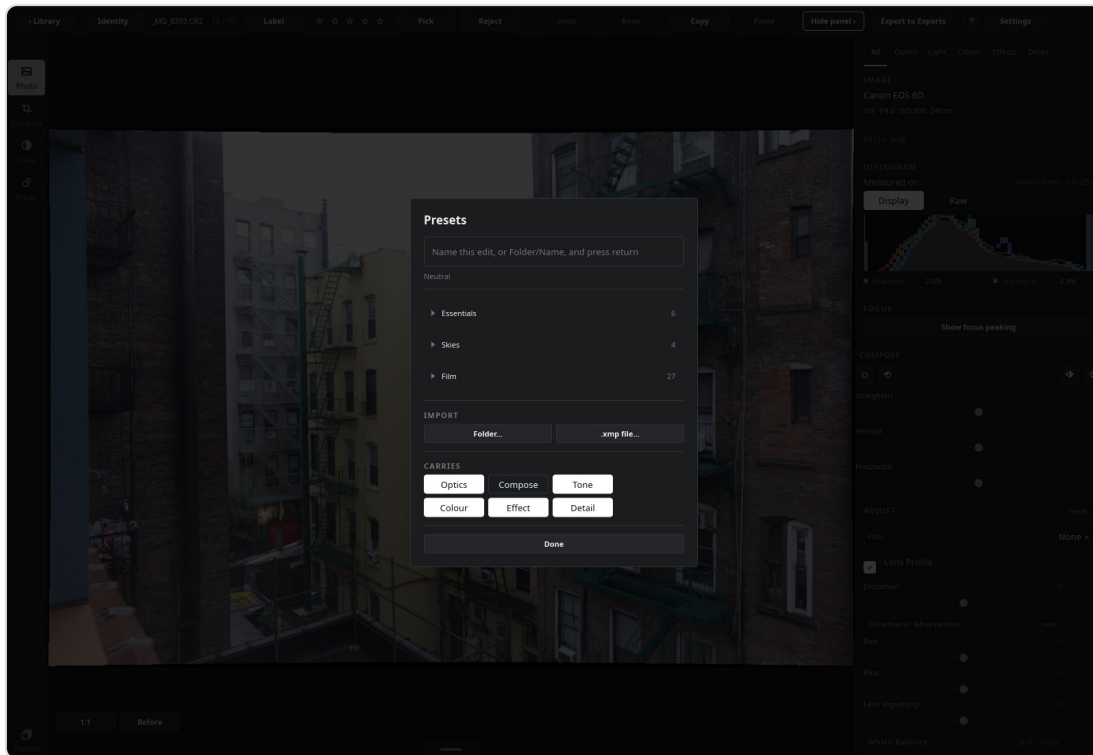
Every change is a step; **Undo** and the History panel walk them. **Snapshot** keeps the current state under a name. **Presets**, at the foot of the tool rail on the left, opens a menu of presets beside the rail, over the photograph, filed in folders that start closed: your own under **Yours**, then the ones DarkRoom ships — **Essentials**, **Skies**, and **Film**, which holds **Colour**, **Cinema** and **Black and white**, one measured stock each. Choosing a folder opens it; choosing a preset applies it. The menu's last row, **Save or manage...**, opens the presets sheet, which lists the same folders and saves the settings to apply elsewhere, renames and deletes them, and imports Lightroom presets — **Folder...** for a folder of them, **.xmp file...** for one.

A **/** in a name files the preset: **Portraits/Warm skin** is **Warm skin** in a **Portraits** folder under **Yours**, and renaming it is how it moves. An imported Lightroom folder keeps its groups the same way.

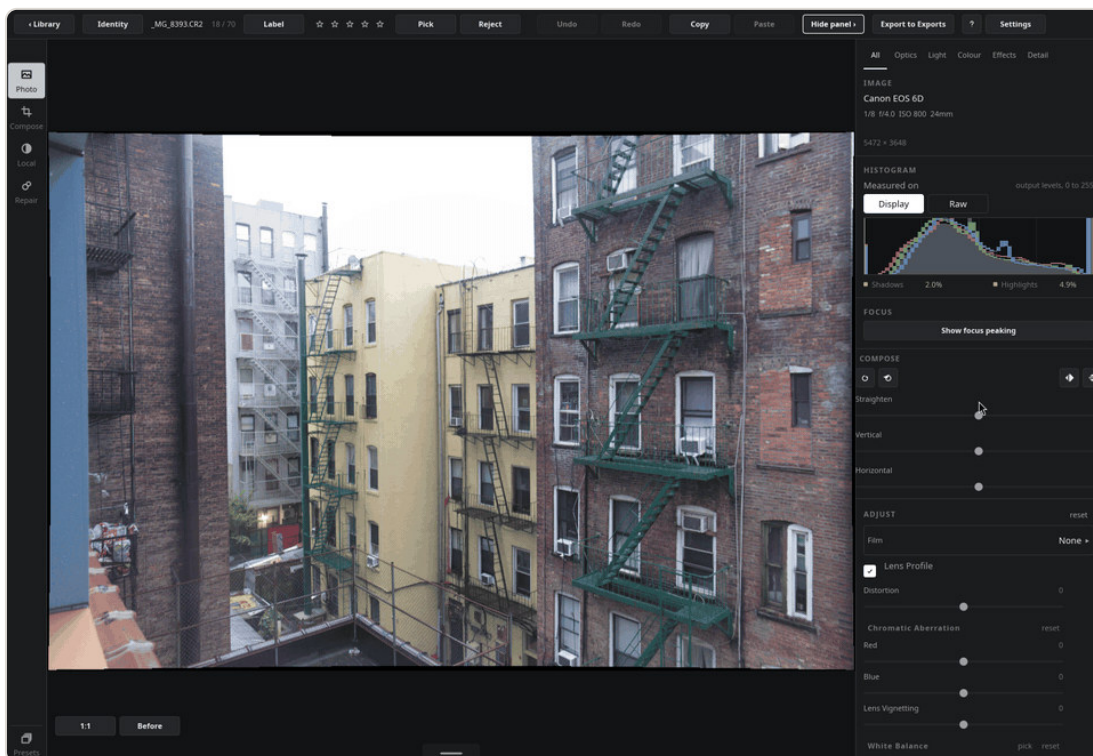
A shipped preset is a look: it changes what it names and leaves the photograph's own corrections alone, as an imported Lightroom preset does. Saving under a shipped preset's name makes your version the one that name applies, marked *changed*; **Revert** brings the shipped one back, and renaming yours makes it one of your own. A film preset carries its stock: choosing one sets the **Film** chooser and leaves the rest of the edit where it was.



The presets menu beside the tool rail, with Film and its colour stocks open



The presets sheet: a name for the current edit, the shipped Essentials, importing, and what an apply carries



Opening Film, then Black and white, in the presets menu and applying Ilford HP5 Plus, then holding Before

Copying settings

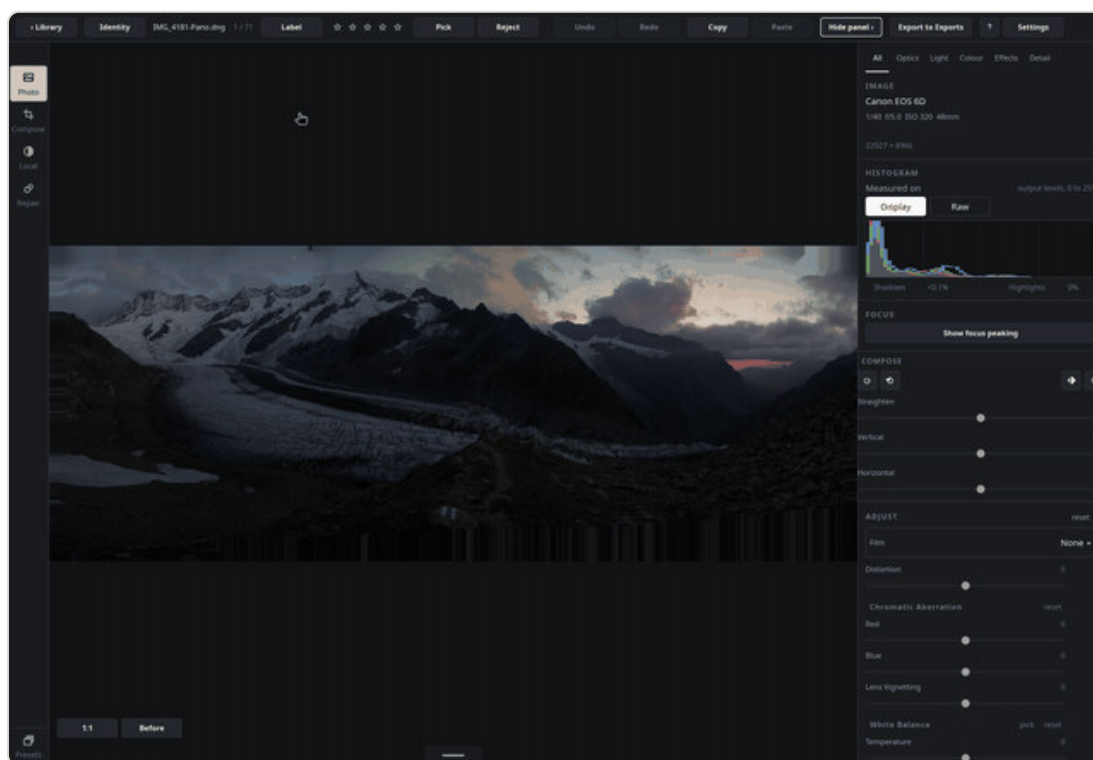
Copy in the top bar, or Ctrl+C, takes this photograph's settings; **Paste**, or Ctrl+V, puts them on another, and says what it would paste — how many adjustments, and whether the crop comes too. In the grid, **Paste to N** on the selection bar pastes onto every photograph selected. Which kinds of edit a copy carries is chosen in the presets sheet, or with Ctrl+Shift+C: a look carried across a shoot usually leaves each frame's own crop alone.

Merging a panorama

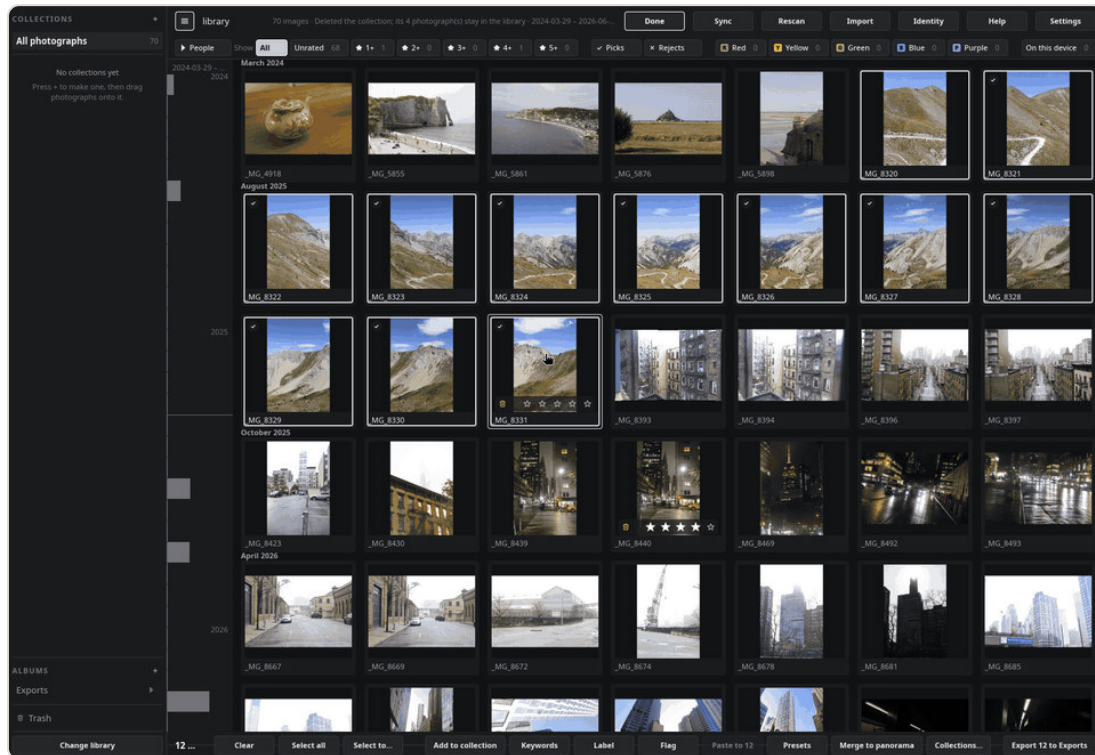
Select the frames, then **Merge to panorama** from the selection bar. The frames are read, aligned, and drawn on the suggested projection with each one outlined where it landed — twelve hand-held portrait frames across an alpine valley, here. Change the projection (a 150° sweep on a flat perspective is what the middle of the film shows, and why cylindrical is suggested), ask for the border to be filled rather than cropped, then **Merge**. The composite is written beside its sources as a DNG and is in the grid the moment it is written — in a wide cell beside its frames, placed by when they were taken — with the merge as the first step in its history. Its thumbnail is made during the merge, from the finished picture, as develop will show it when you open it; on a server library it is in the grid while the file is still uploading. A second merge of the same frames is named **-pano-2**, never written over the first.

Each frame has a box in the **Frames** list. Untick one to leave it out, and the rest are aligned again at once, without reading the frames again; tick it to bring it back. A frame that cannot be placed is named there with why, and **Merge** stays off until it is unticked. Blown sky stays white in the preview and in the composite.

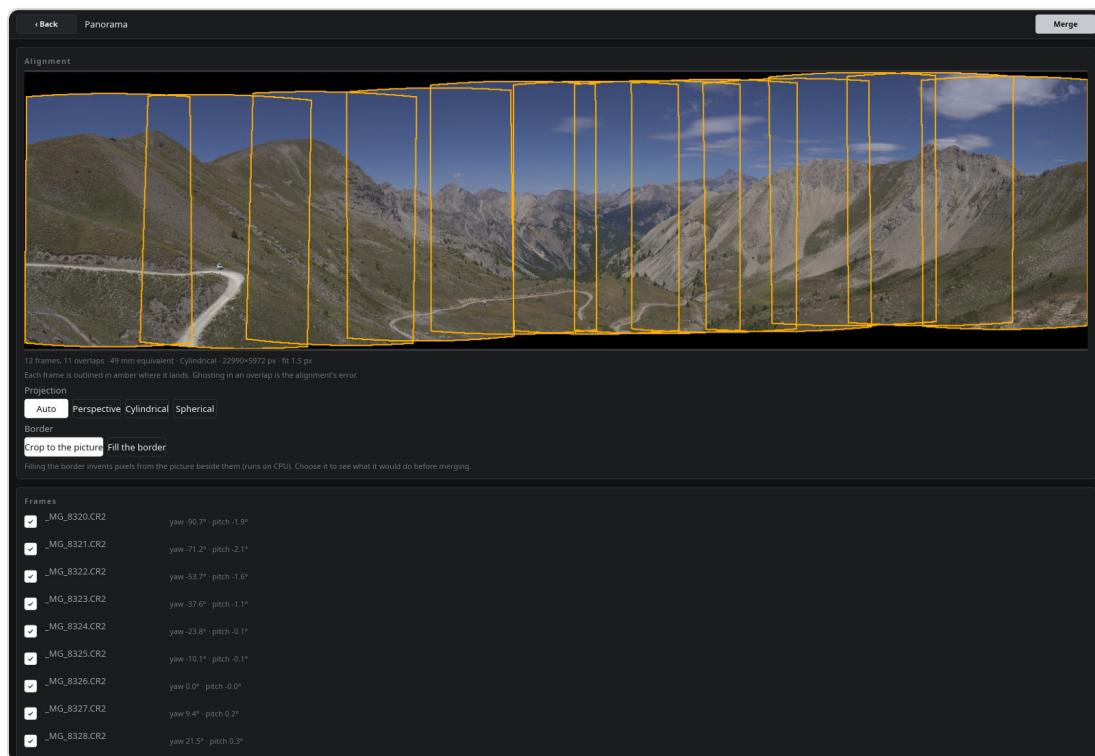
A panorama is usually far wider than a graphics card can draw in one piece. It opens in develop all the same, on a reduced copy that is drawn from the full resolution wherever you zoom in, and it exports at full size. The same goes for a panorama Lightroom stitched and saved as a DNG.



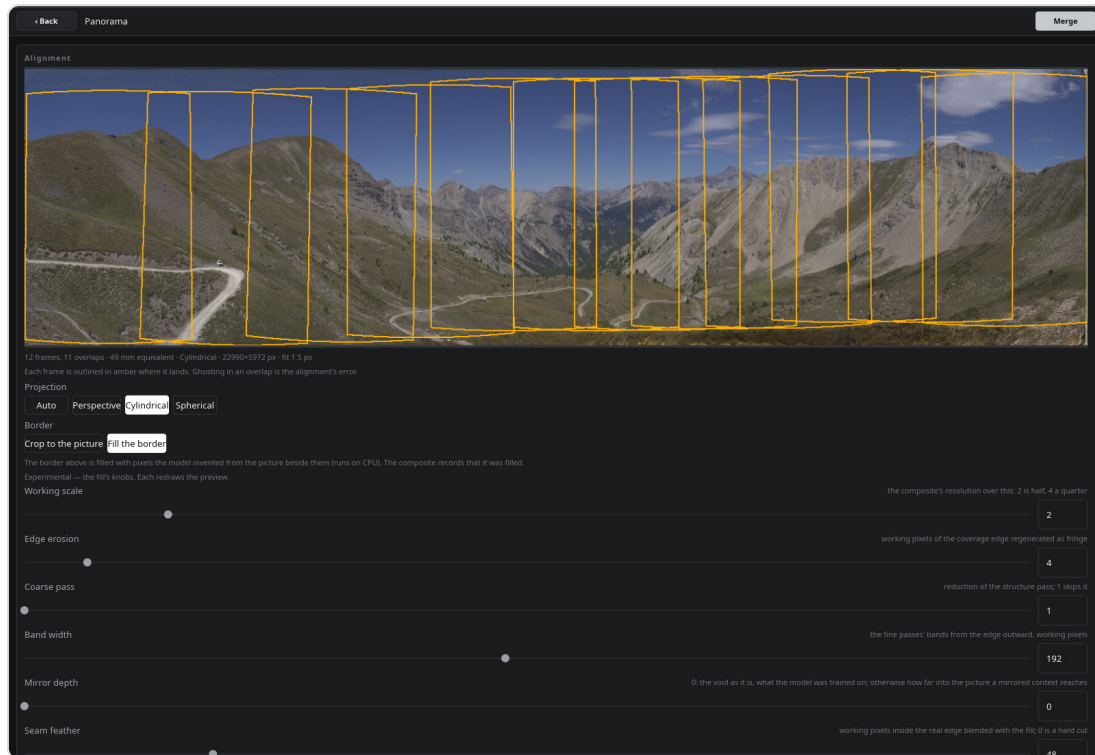
A 22 927 × 8966 panorama of a glacier at dusk: zoomed from the whole frame into the peaks, panned along the ridge and back out, then 1:1 on the peaks with a double-click



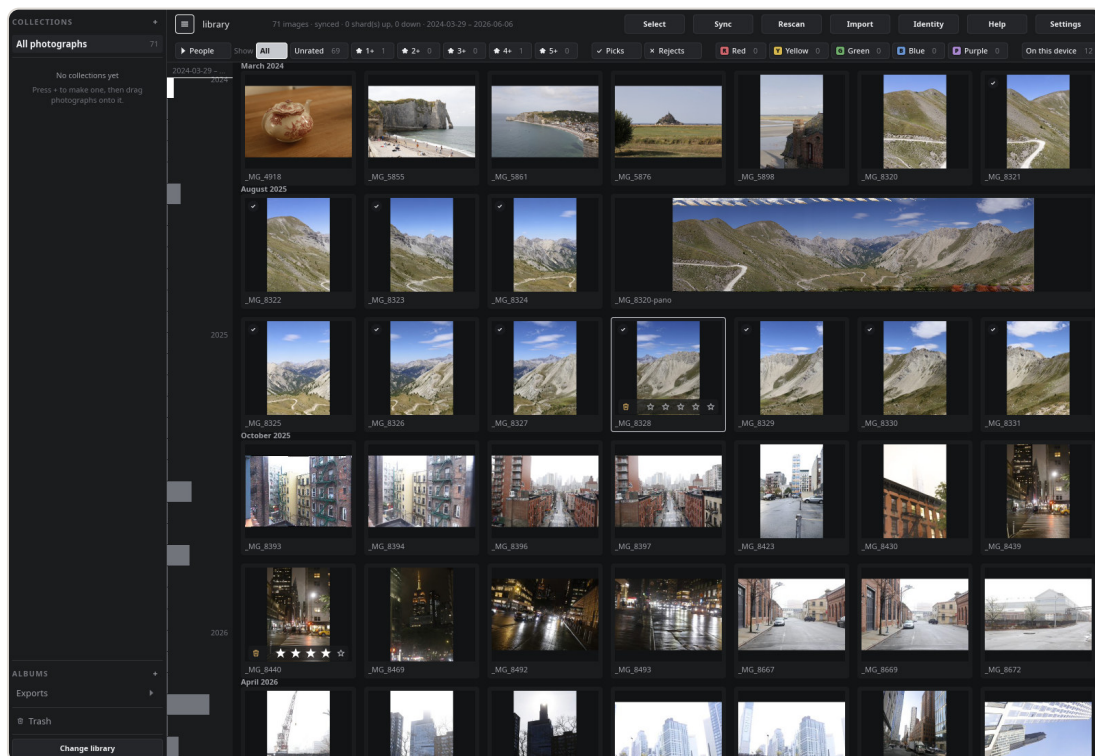
Twelve frames aligned, the first left out and brought back, the projections tried, and the border filled



The alignment on a cylinder, each frame outlined where it landed



The same, with the ragged border filled by the model rather than cropped away

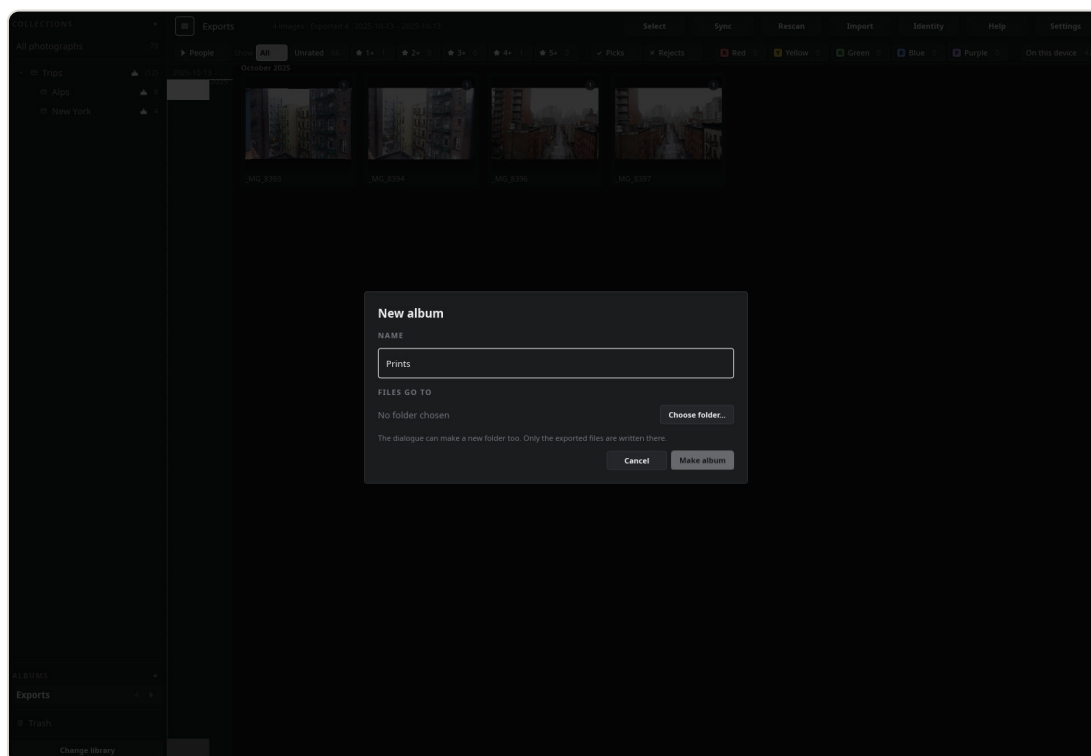


The composite in the grid straight after the merge, spanning four columns beside the twelve frames it was made from

Export

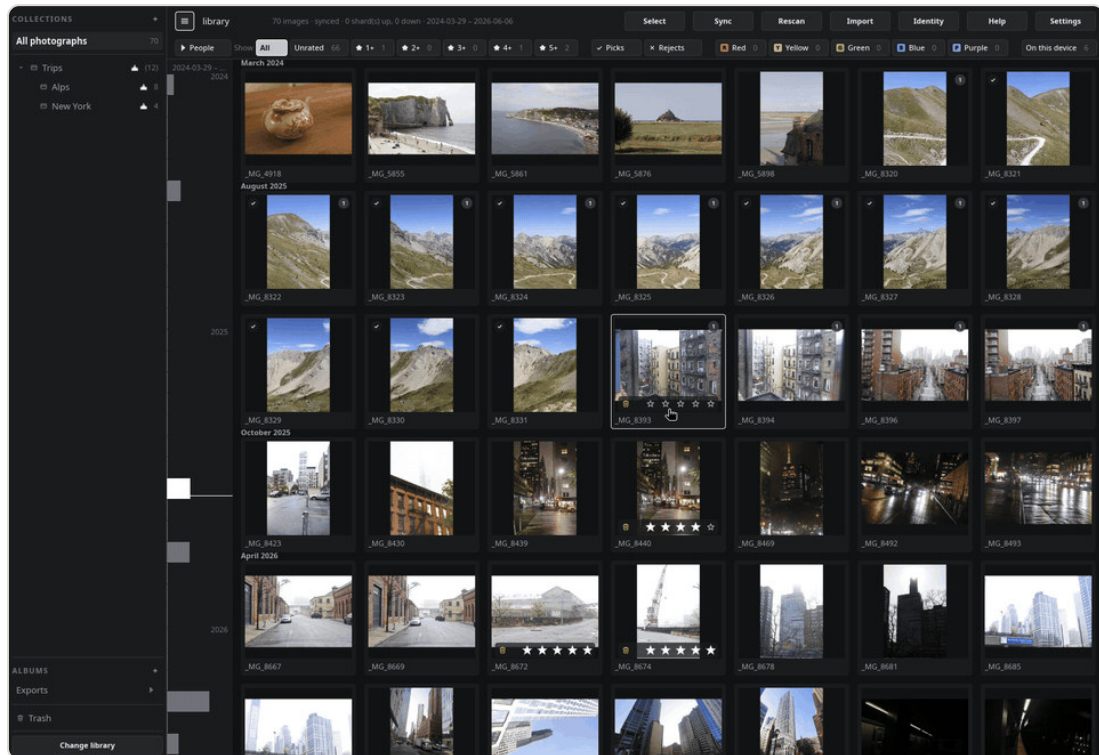
Export in the develop header, or **Export N** from a selection. Format, size, colour space, sharpening and naming are in Settings, and apply to every export until changed. Where the file goes is an album.

An album is a folder exports go to, listed under **Albums** in the sidebar, below the collections. Press **+** there, or **New album...** in the export sheet (**Ctrl+E**), name it, and choose its folder: on this device, in the system's folder dialogue (on the tablet, Android's folder picker), or on the server, in a browser that can make a folder as well as open one. Not inside the library — a JPEG exported there would come back from the next scan as a photograph of its own, and the browser says so rather than letting you.

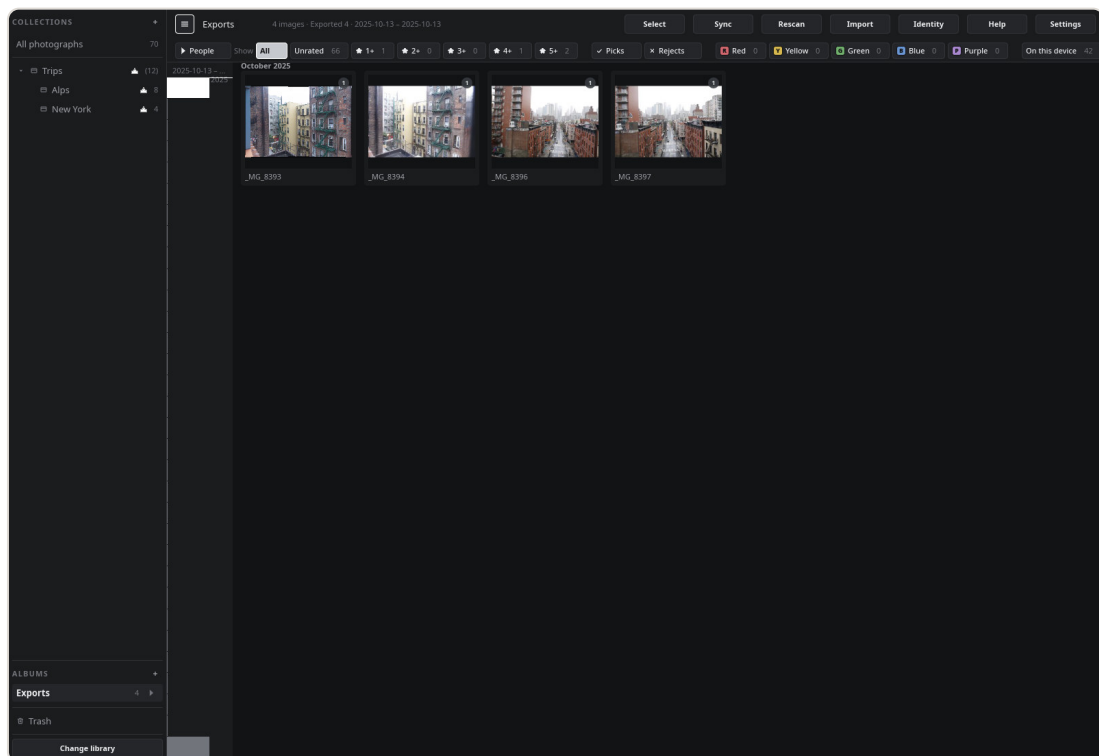


A new album named, before its folder is chosen

The folder holds only the exported files. The album remembers which photograph each came from, so selecting it in the sidebar shows the originals behind its JPEGs — edit one and export it again. Albums reach your other devices as collections do; a folder on this device does not, so an album made on the desktop asks the tablet for a folder of its own. Right-click an album, double-click it or press the arrow on its row to rename it, give it another folder or delete it; deleting an album leaves its files where they are.

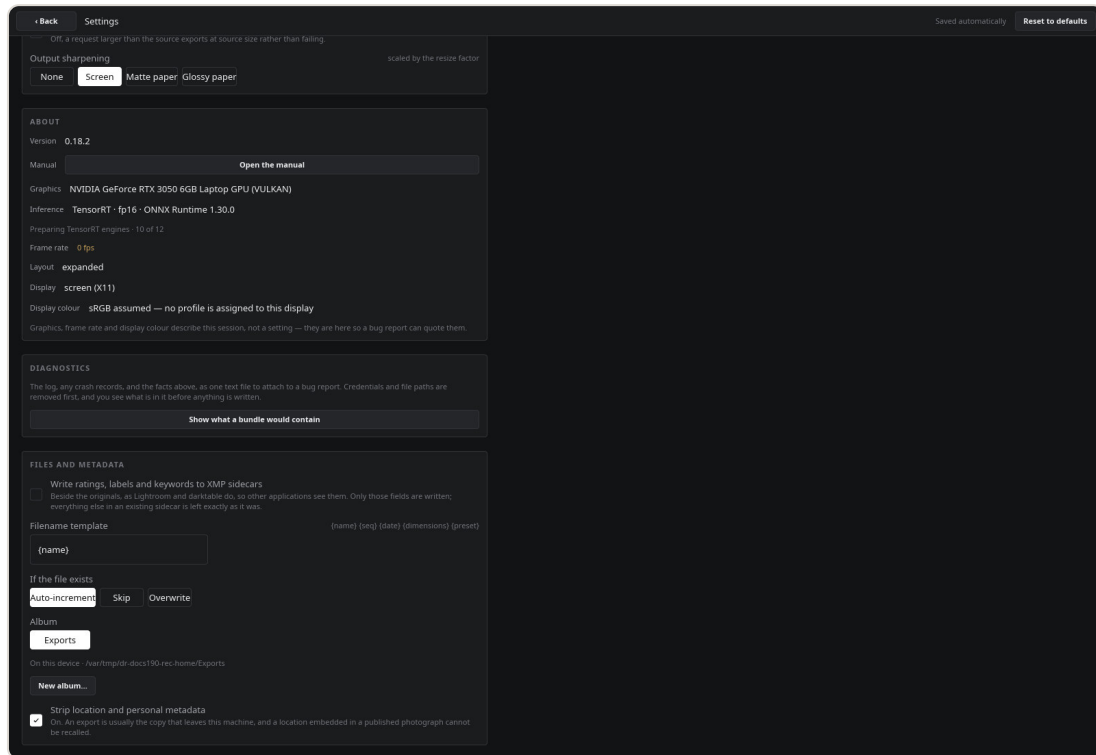


Four New York frames exported to an album, then the album chosen in the sidebar



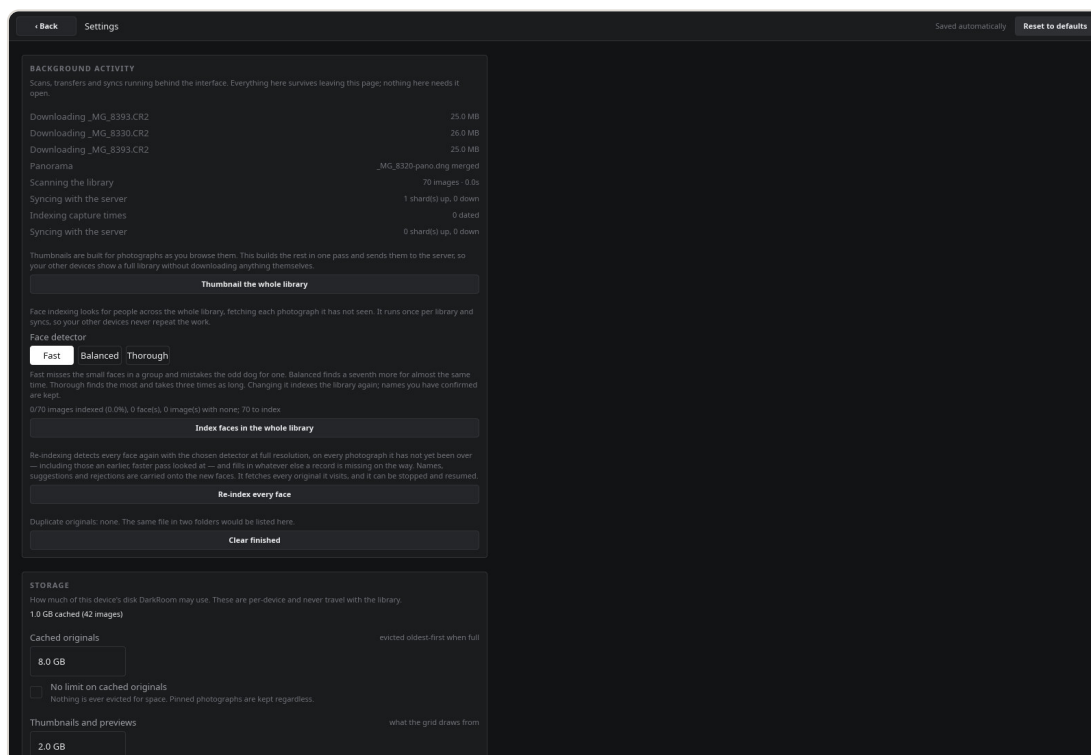
The album chosen: the four photographs behind its files

An export with no album chosen is refused, and the header says so. With one chosen, the buttons name it: `Export to Exports` in develop, `Export 4 to Exports` on the selection bar.



Export defaults in Settings, ending with the album exports go to

Settings



The settings page: background activity, indexing, storage, display

Background activity with progress, thumbnail and face indexing, how many duplicate originals the library holds and the way to their review, storage on this device, display and colour, export defaults, what is written to XMP sidecars, the manual, and a diagnostics bundle for a bug report.

People

Face detection and identity run over the library and group faces by person; the **Identity** page is where suggestions are confirmed, rejected and split, and **People** on the filter bar narrows the grid to someone. Not pictured here, for the obvious reason — faces.md has the design.

Where things are written down

Feature	Design
Local masks and segmentation	segmentation.md, mask-editing.md
Repair	spot-removal.md
Panorama	panorama.md
Faces and identity	faces.md
Gestures, generated from the code	gestures.md
Navigation and layout	ui-navigation.md
Sync and storage	storage.md

How this page is made

`tools/manual/` drives the desktop build on a private X server and records each scene; `record.sh` `<library>` re-makes every picture here. Run it after a change to the interface and commit what changed. The pictures are in LFS.

The application carries this page. `cargo run -p traceability -- manual` renders it to `index.html` beside it, which the packages install with the pictures and the app opens from Help, from Settings, and from the "See it" link beside a gesture on the help sheet. CI fails when the two differ.

Making it the first time turned up nine faults, each fixed in its own commit before the pictures were taken: the folder picker could not choose the top level, month headings overprinted each other, a category mask widened the column off the window, the mask tint outlived its mode, the first sync uploaded an empty thumbnail shard, a merge that ran out of GPU memory left the page on Stop for ever, the export settings promised to ask for a folder and did not, the keyword sheet sent its keys to the grid, and an empty trash told you to check your library folder.