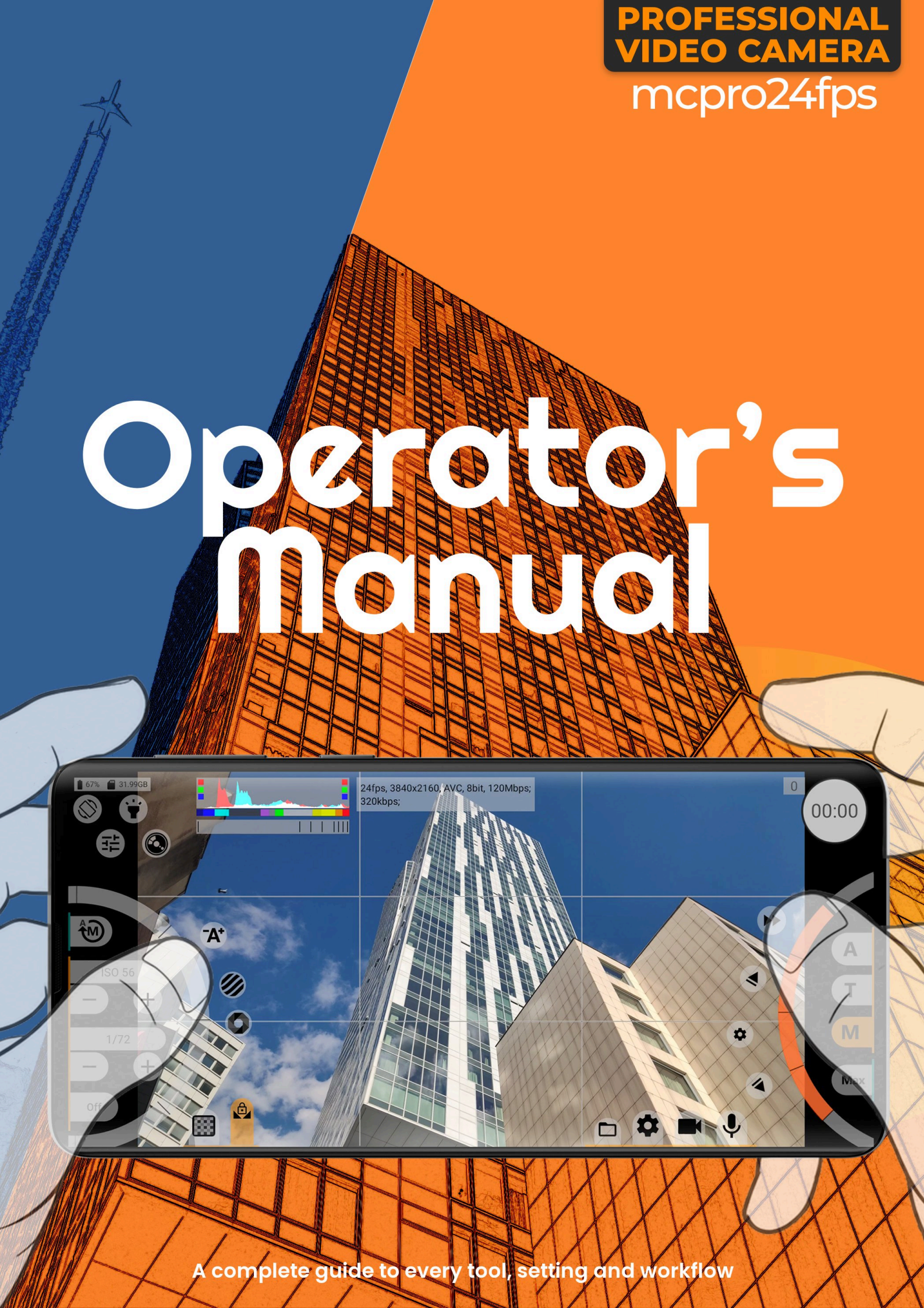
PROFESSIONAL VIDEO CAMERA

mcpro24fps

Operator's Manual



A complete guide to every tool, setting and workflow



mcpro24fps

User Guide

November 4, 2026

mcpro24fps.com/guide/mcpro24fps

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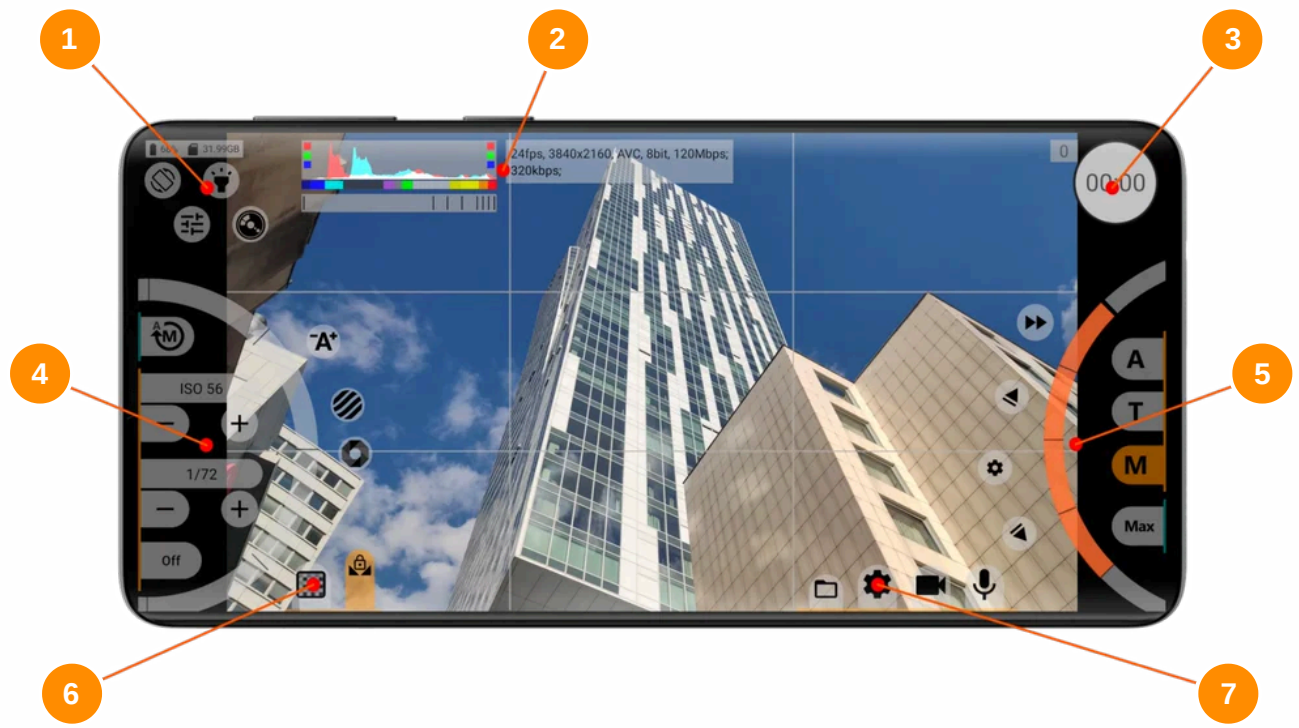
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Getting started

mcpro24fps is a video camera app for Android with manual control. It gives you the camera settings that the phone's own camera app usually hides: frame rate and frame size, ISO and shutter speed, manual focus and zoom, white balance, log profiles with a monitoring LUT, codecs and bitrates, RAW recording, and monitoring tools such as zebra, false colour and focus peaking.

What is available depends on the phone and on the camera you use. The app shows only what the phone supports; where a setting works only on some phones, this guide says so.

> **mcpro24fps Demo**
>
> mcpro24fps Demo is a free version for trying the app's settings, modes and tools on your phone. Compared with the full version: each recording stops after 150 frames (about 5 seconds at 30 fps); RAW is not recorded; the LUT cannot be saved as a file; recording and snapshots need a light interface at 100 % brightness and opacity; there is no **RAW Bundle**. When you reach a limit, a window opens with links to the full version in the app stores. You can also buy it at mcpro24fps.com/buy.



How this guide is organised

The guide follows the shooting screen. It is divided into seven areas, named the same way as in Interface, where you can hide or show each of them:

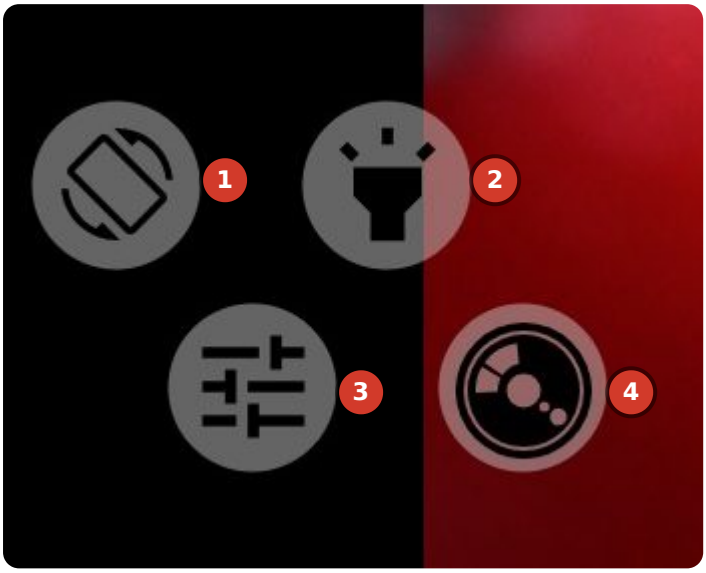
1. Quick access buttons: orientation, flashlight, presets, camera choice;
2. Indicators & information area: histogram, audio levels, battery, storage, warnings and the information panel;
3. Record button: recording, snapshots, recording time and dropped frames;
4. Exposure controls: ISO, shutter speed, exposure compensation, zebra and false colour;
5. Focus and zoom controls: focus, zoom, zoom factors and programmed moves;
6. Image controls: white balance, colour profiles, curves and GPU image processing;
7. Settings buttons & media manager: the video and audio menus, the settings menu and the media manager.

To find a setting, follow the same path as on the phone: the area of the screen, then the button, then the menu. The path is shown above every page. Each setting has its own section; its link stays the same in every language.

If you know what you want to do but not where the setting is, start with the step-by-step articles at the end, or search the site.

① Quick access buttons

Quick access buttons sit in the top left corner: orientation and flashlight in the upper row, presets and camera choice in the lower one. You can hide the group or show it on a swipe in Interface, and centre it with **Top block position**.



1 Screen orientation

Controls how the interface turns with the phone. Double-tap the button to open the orientation menu; long-press it to fix the current orientation, or to return to automatic if it is fixed. A single tap does nothing, so the button cannot be changed by accident. During recording the orientation is always fixed as it was at the start. The same setting is in Other settings.

- automatic: the interface turns with the phone;
- fixed landscape;
- fixed portrait;
- fixed reverse landscape;
- fixed reverse portrait.

2 Flashlight



Turns the light on and off; the button is highlighted while the light is on. It works during recording too. Shown when the camera has a flash. The state is stored separately for each camera.

3 Camera module presets



Opens the list of presets. A preset saves the camera setup so that you can return to it in one tap: the camera, frame size and rate, codec, bitrate, colour profile and curves, white balance preset, LUT, GPU processing, sound, metadata and many other settings. ISO, shutter speed, focus and exposure compensation are not saved.

- The + button creates a preset from the current settings; give it a short description (up to 100 characters).
- Each card shows what the preset contains: camera, frame rate and size, codec, bit depth, bitrate, curves, white balance, LUT, sound.
- The card buttons rename the preset, overwrite it with the current settings, or delete it.
- Tap a card to apply the preset. After confirmation the app restarts the screen with the preset's settings and switches to its camera.

The list does not open during recording.

4 Cameras



Opens the list of the phone's cameras. Each is shown as its number, the equivalent focal length, the aperture and the side: for example "0. 24mm, f/1.8, **Back-facing**". USB cameras are listed as **External**. Cameras that duplicate others are hidden. The list does not open during recording.

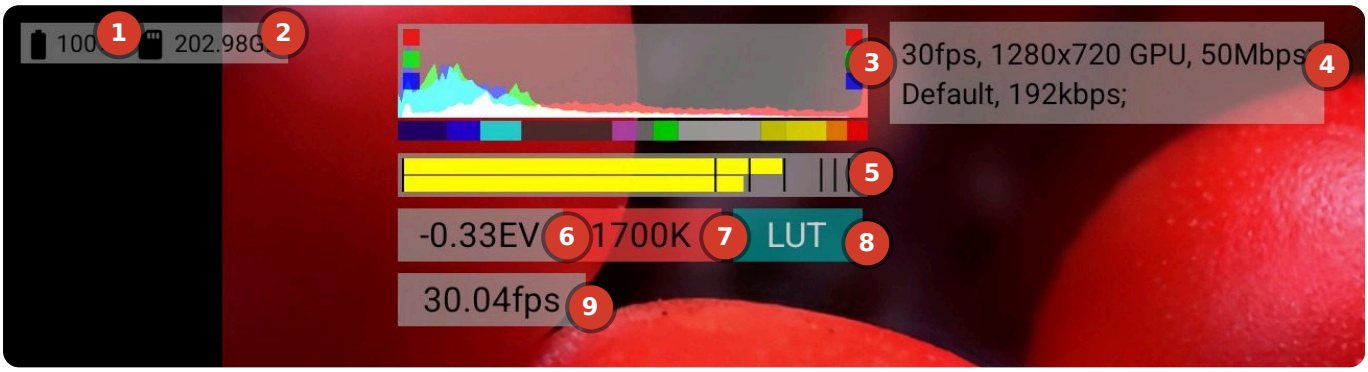
Most settings are stored separately for each camera: frame size and rate, exposure, focus, zoom, white balance, curves, LUT, hardware settings and more. When you switch cameras, each one returns to its own settings.

Long-press the app icon on the home screen for shortcuts that open the app straight on a chosen camera (**Main**, **Selfie**).

② Indicators & information area

Indicators & information area are at the top of the screen: the audio level meter, histogram, exposure and colour temperature readings, status labels, battery and free space. The information panel at the bottom left belongs to the same group. The whole group can be hidden or shown on a swipe in Interface.

Which indicators appear is set in Viewfinder settings. The histogram, EV and Kelvin readings need the viewfinder to go through the GPU.



1 Battery

The battery level, in the top left corner.

2 Free space

The free space on the selected storage. During recording it is updated once a minute (every 10 seconds for RAW).

3 Histogram

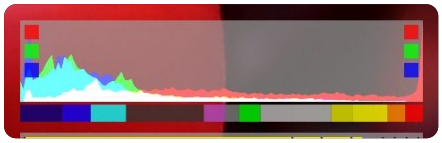
The histogram of the viewfinder image. Tap it to switch the type:

- **Luminance**: brightness;
- **RGB**: three colour channels;
- **Luminance Max**: brightness where any filled level is drawn at full height, so even a few clipped pixels are visible;
- **Waveform**: brightness across the frame. Left to right follows the picture, bottom to top is the level, with lines at 10, 50 and 90 %. The panel is twice as tall in this view;
- **RGB Parade**: the same for the red, green and blue channels side by side.

The squares at the edges belong to the red, green and blue channels. A square on the left lights up when that channel has pixels below the bottom expo-peaking limit, a square on the right when it has pixels above the top limit. Lit squares on the left mean lost shadow detail: add light or exposure. Lit squares on the right mean clipped highlights: reduce exposure. The marks on the histogram show the two limits, and the false colour scale under it is drawn between the same limits. In the waveform and parade views the squares and the marks are not drawn; the scale under the panel stays.



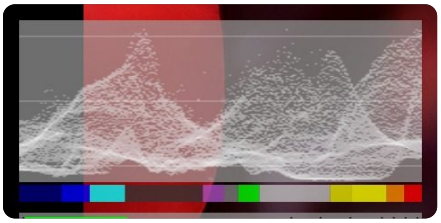
Luminance



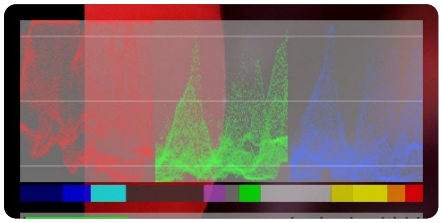
RGB



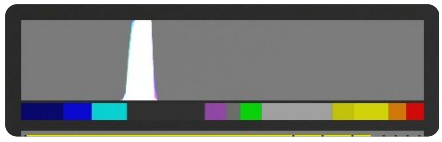
Luminance Max



Waveform



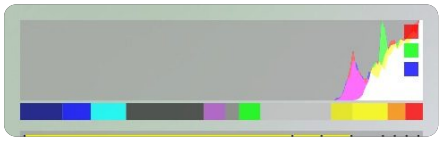
RGB Parade



Normal exposure



Underexposed: the squares on the left light up



Overexposed: the squares on the right light up

4 Information panel

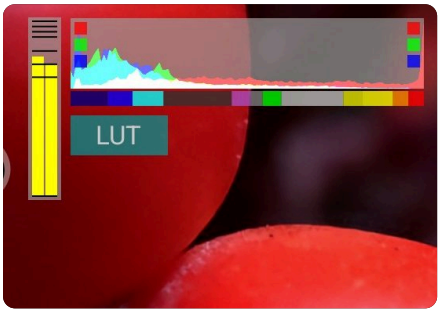
The panel at the bottom left lists the current settings, selected in **Show information**: frame rate, frame size, codec, bit depth, bitrate, audio source and bitrate, white balance, curves. Some marks need explaining:

- "120>24fps": shot at 120, played back at 24;
- "~" before the bitrate: recalculated for slow motion;
- "*2", "*3": **Bitrate hack** is working, the bitrate shown is what the codec is set to;
- "GPU" after the size: recording goes through the GPU;

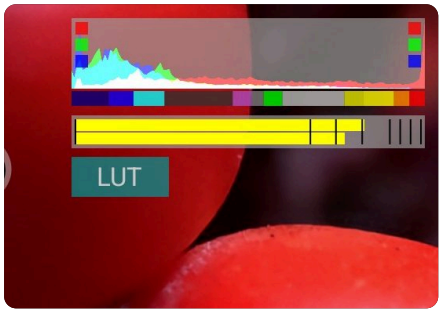
- "(1.33)": desqueeze; "×0.56": scaling;
- for RAW, "ds": reduced debayer, "≈": estimated bitrate for .mcpro.

5 Audio level meter

Two bars, left and right channel, show the peak sound level from −75 dBFS to 0. The bar is green below −12 dB, yellow from −12 to −3 dB and red above −3 dB. **Level meter type** puts it as a vertical column next to the histogram or as a horizontal bar on top. The meter is hidden when sound is off.



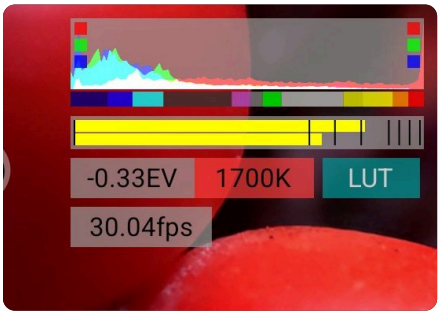
Vertical



Horizontal on top

6 EV of scene

The average brightness of the frame relative to 18% grey, in stops with a step of 1/6, for example "+0.33EV". The label is grey normally, dark red beyond ±2 EV, and yellow when the reading is not reliable because the curve or GPU processing is not neutral. The measuring area can be the whole frame or its centre.



EV, Kelvin and real frame rate together

7 Scene color temperature

The colour temperature of the scene, rounded to 100 K, for example "5600K". The label is filled with the scene's average colour.

8 LUT

Shown when a viewfinder LUT is active. Its colour shows the mode: grey for off, turquoise or dark red for the two LUT modes, full frame or half frame. Tap to switch the LUT mode, long-press to turn half-frame LUT on and off (**Half-frame LUT: on**).

9 Real frame rate

The frame rate the camera actually delivers, measured over about half a second, for example "23.98 fps". Useful to check that the camera keeps the chosen rate in low light.

Slow motion

The playback frame rate, such as "24fps", shown when slow or fast motion is on.

Screen Mode

"HDR10", "HLG" or "Linear" when the screen works in that mode. "HLG*" on Android before 14 means that HLG is shown through PQ conversion.

Bluetooth microphone



Shown when the sound comes from a Bluetooth microphone.

REC

A blinking red dot while recording.

Save progress

A thin line at the top of the block during recording: how full the memory buffer is between writes to the file. It fills up and drops to zero each time a portion is written.

Background work

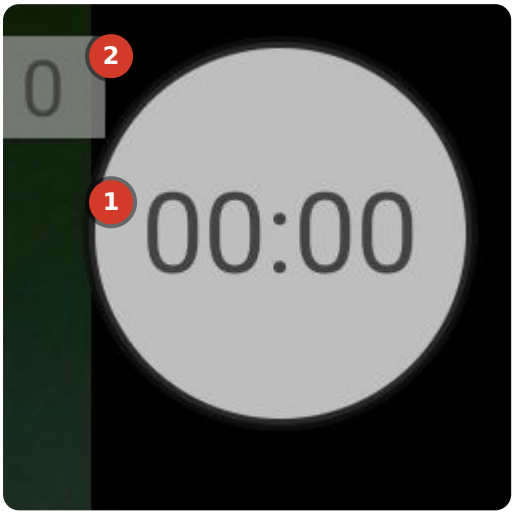
<meta/> at the bottom of the screen: the app is finishing work on the last file in the background (metadata, LUT file).

Warnings

Red messages above the bottom edge stay until the cause goes away; double-tap or Back closes them. Overheating messages come from Android 10 and later: **High heat** and **Overheat**. What happens to the recording then is set in Other settings.

③ Record button

The **Record button** group is on the right edge of the screen: the button itself, recording time and file size, the dropped frames counter and, if enabled, the snapshot button. The group can be hidden or shown on a swipe in Interface.



1 2 Record button

The round button starts and stops recording. It has no icon; its colour shows the state:

- grey: ready to record (the frame above);
- red: recording is running, with the time and file size inside the button (the frame further down);
- pale: the camera is restarting after a settings change, and recording cannot start yet.

Tap the grey button to start recording. When the first frame is written, the button turns red and REC starts blinking among the indicators. When recording starts, menus close, the screen orientation is fixed, and the elements set to hide during recording are hidden. **Audio signals** plays a start sound if enabled.

Recording does not start when:

- the camera is restarting after a settings change: the button is pale and the app shows **Please close all menus**;
- there is less than 50 MB free (500 MB for RAW): **Not enough space on the media**;
- the app has no access to storage: it asks for it;
- output for an external recorder over HDMI is on.

RAW Bundle

RAW in **.mcpro** needs **RAW Bundle**. Without it the record button shows a red lock, and a tap opens the purchase instead of starting the recording. To record RAW without it, set the container to **ZIP** in the codec settings. What RAW Bundle includes.

mcpro24fps Demo

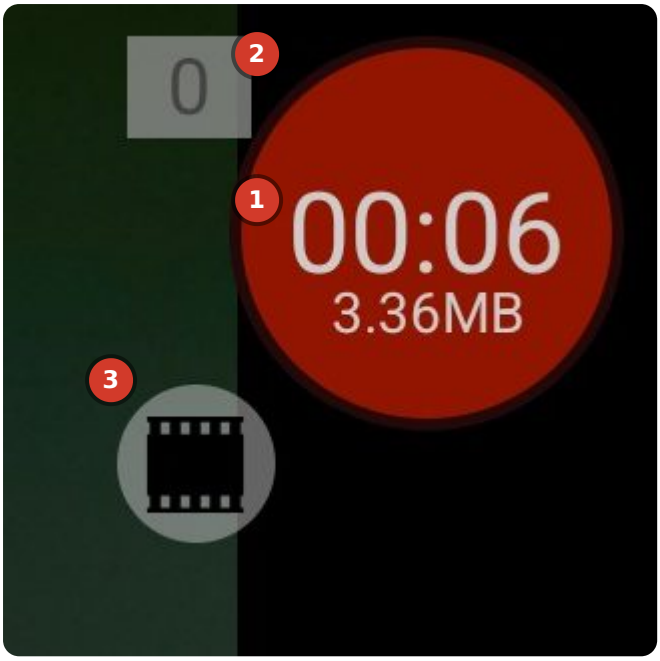
In the demo version each recording stops after 150 frames (about 5 seconds at 30 fps), and the window offering the full version opens. RAW is not recorded. With a dark interface, or with interface brightness or opacity other than 100 %, recording and snapshots open this window right away.

How recording stops is set by **Stop recording by** in Control: **Tap**, **Double tap** or **Long press**. Volume and camera keys, if assigned to recording, start and stop it regardless of this setting. Recordings shorter than about 1.5 seconds are not stopped by the button.

After stopping, three coloured dots spin in the centre of the screen while the rest of the buffer is written to the file. Then the button turns grey again. If the app keeps working on the file in the background, <meta/> appears at the bottom of the screen.



Recording also stops on its own when storage runs out, when the memory buffer overflows (the app shows which buffer), and on overheating if that is enabled in Other settings.



Recording

While recording runs, the time and the file size are shown inside the button, and the dropped frames counter next to it.

Recording time

Inside the button: the recording time, in minutes and seconds, then hours. For RAW the time is counted from the number of recorded frames.

File size

Under the time: the size of the file being recorded, in MB or GB. When recording is split into parts, the size is that of the current part.

Dropped frames

The number on the counter shows how many frames were lost during the current recording. For video it is calculated from gaps in the encoder's timestamps; for RAW it counts frames the camera did not deliver or the app could not save in time. The counter turns red at the first dropped frame and stays red until the next recording.

3 Snapshot

The snapshot button appears when **Allow snapshots** is on in the video menu and the phone supports it. A tap saves a JPEG frame the size of the video next to your recordings, with the same file name pattern. It works with and without recording.

④ Exposure controls

Exposure controls are on the left side of the screen. There are two versions of this column, one for manual exposure and one for automatic; only one is on screen at a time. If the camera does not support manual exposure, only the automatic column is shown. The column can be hidden or shown on a swipe in Interface.

Exposure mode, ISO, shutter speed, the mains-frequency multiple, exposure compensation and anti-banding are stored separately for each camera. Settings changed during recording are saved when the recording stops.

The zebra, false colour and LUT buttons are in both columns and work the same way in each. They change only what you see on the screen; the recording is not affected. They need the viewfinder to go through the GPU; otherwise the app shows **GPU for viewfinder must be on**. Zebra and false colour are not remembered after the app restarts; **Expo-peaking** in the viewfinder settings can instead show one of them only while you touch the ISO wheel.

The column has two versions, each described on its own page: manual exposure and automatic exposure.

Manual exposure



Manual exposure

1 Exposure mode



Manual exposure is on; tap to switch to automatic exposure. The switch works during recording too and is hidden if the camera does not support manual exposure.

2 ISO

The half wheel on the left sets ISO. Turn it by dragging a finger along the arc; the value is shown above the wheel while your finger is on it. The scale is stretched at the low end: ISO 0 to 200 takes a full turn, and after that each doubling (200 to 400, 400 to 800 and so on) takes half a turn. The range comes from the camera.

3 Auto assist



Sets exposure for you once. Hold the button: the camera switches to automatic exposure while it is pressed. Release it, and the app takes the shutter speed and ISO the camera chose and turns them into manual settings. It keeps the shutter at 1/(2·fps) where possible and adjusts ISO; if ISO runs out of the camera's range, the shutter moves instead. This works during recording too.

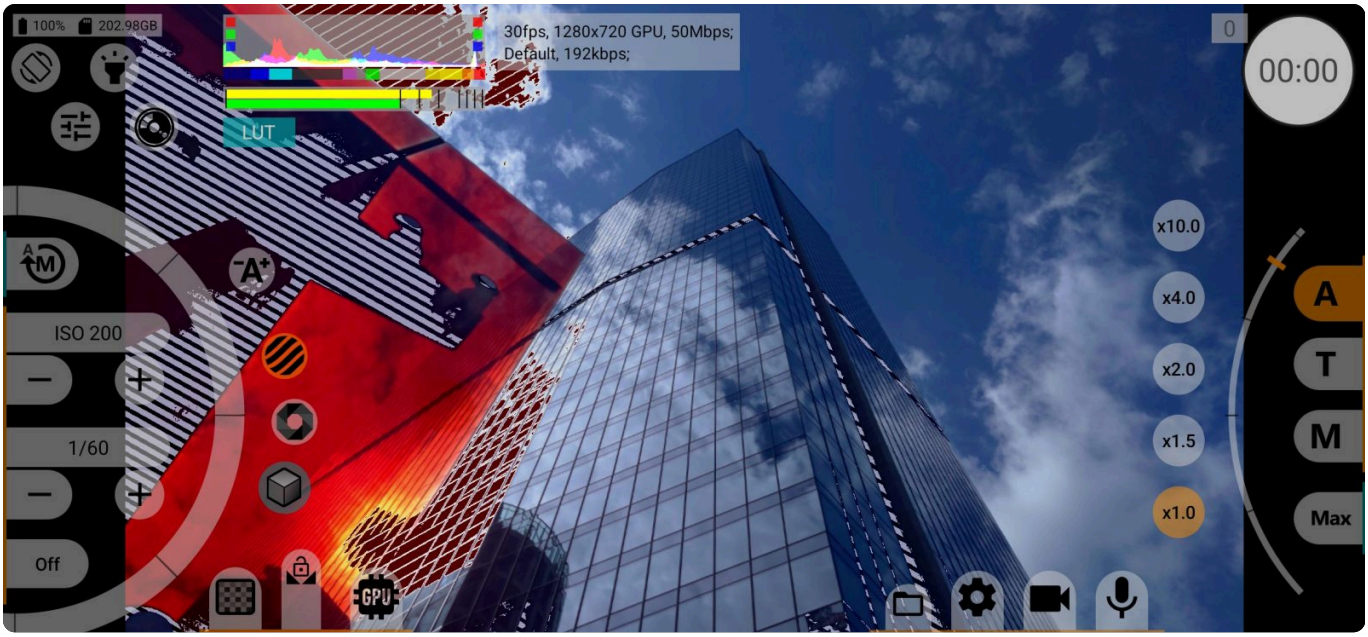
4 ISO value

Shows the current ISO, for example "ISO 200". The reading is highlighted when ISO goes above the sensor's analogue maximum. Above that point the camera adds digital gain, which raises noise.

5 Zebra



Shows stripes over areas that are too bright or too dark; the button is highlighted while zebra is on. Tap again to hide them. The thresholds are set in Viewfinder settings. Turning zebra on turns **False Color** off.



6 7 ISO down and up

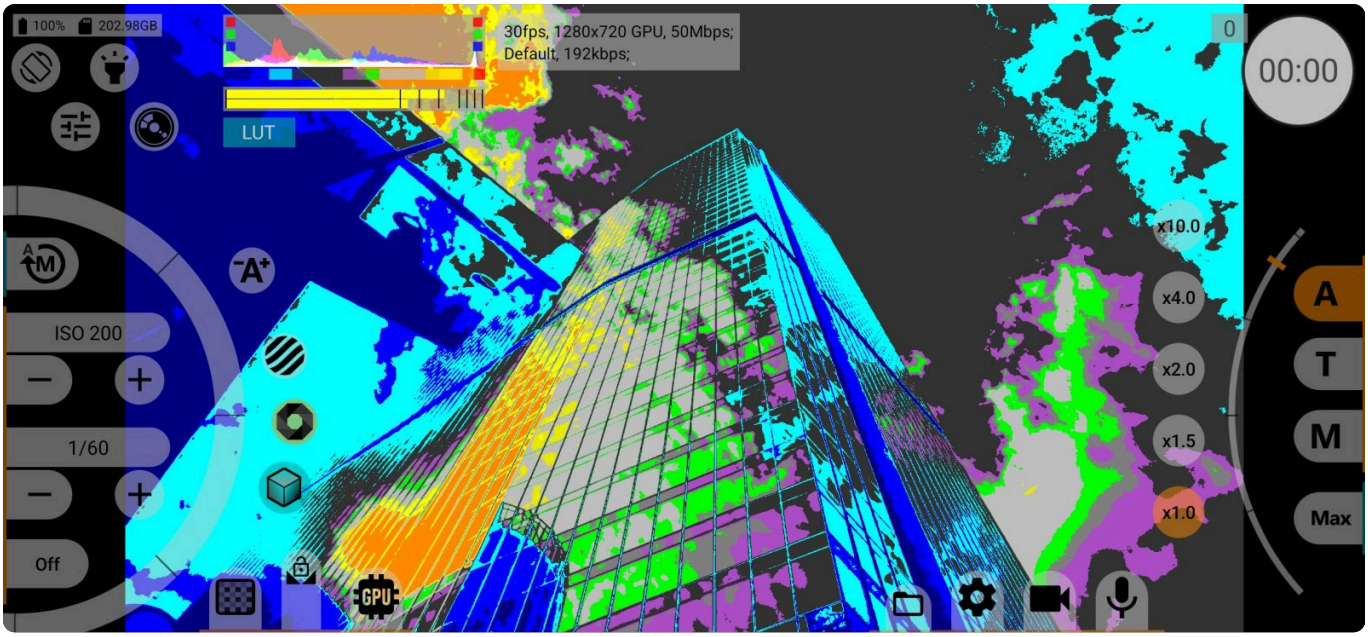
lower ISO by one step;

raise ISO by one step.

The steps are 25, 40, 50, 75, 100, 150, 200, 300, 400, 600, 800, 1200, 1600, 2400, 3200, 4800, 6400, 9600, 12800, 25600 and 51200, within the camera's range.

8 False Color

Colours the picture by brightness, so that you can judge exposure across the whole frame at a glance; the button is highlighted while it is on. Tap again to turn it off.



9 Shutter speed

Shows the shutter speed as 1/N. The shutter is tied to the frame rate: the steps are fractions of the frame time, 1/fps, 1/(1.5·fps), 1/(2·fps), 1/(3·fps), 1/(4·fps) and so on. At 24 fps that gives 1/24, 1/36, 1/48, 1/72, 1/96, 1/144, 1/192. The default is 1/(2·fps), the 180° rule: 1/48 at 24 fps, 1/60 at 30 fps. The shutter can't be longer than one frame. The reading is highlighted while the mains-frequency multiple is on.

10 11 Shorter and longer shutter

− one step shorter: the frame gets darker;

\+ one step longer: the frame gets brighter.

12 Viewfinder LUT

The LUT button appears when a viewfinder LUT is selected and the current colour profile allows it. Tap it to turn the LUT on and off; the button is highlighted while the LUT is on. Long-press it to open the menu for exporting LUTs. The LUT itself is chosen in Viewfinder settings.

the LUT covers the whole frame (or is off, if the button is not highlighted);

the LUT covers the left half of the frame, the right half shows the picture without it;

the LUT covers the right half.

The half-frame views are available when half-frame LUT mode is on: long-press the LUT label among the indicators to switch it.

13 Mains-frequency multiple

Makes the shutter steps follow the mains frequency instead of the frame rate. This removes flicker from lamps on 50 Hz or 60 Hz mains. The button shows its state as text:

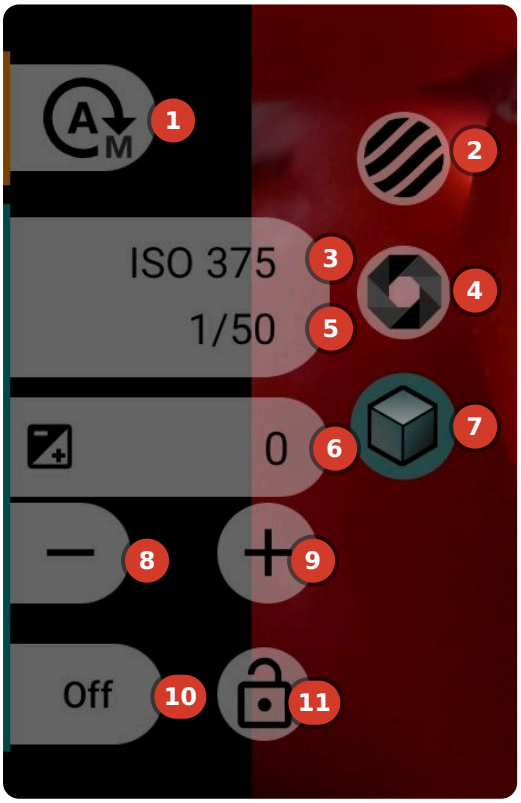
- **Off**: the steps follow the frame rate;
- "⋮" and a base, for example ⋮25 or ⋮50: the steps follow the mains; the shutter reading is highlighted.

What the button cycles through depends on the frame rate:

- at 24, 48, 72 and 96 fps: off, the 50 Hz base, the 60 Hz base;
- at 25, 50, 75 and 100 fps: off and the 60 Hz base;
- at 30, 60 and 90 fps: off and the 50 Hz base.

For example, at 24 fps with the 50 Hz base the steps become 1/25, 1/37, 1/50, 1/75, 1/100. At 120 fps and above the button has no effect.

Automatic exposure



Automatic exposure

1 Exposure mode



Automatic exposure is on; tap to switch to manual exposure. The switch works during recording too and is hidden if the camera does not support manual exposure.

2 Zebra



The same zebra as in the manual column: stripes over areas that are too bright or too dark. See Zebra.

3 5 ISO and shutter speed

In automatic mode the column shows the ISO and shutter speed the camera has chosen. Above 60 fps these readings are not shown.

4 False Color



The same false colour as in the manual column: the picture coloured by brightness. See False Color.

6 Exposure compensation



Shows the exposure compensation in EV, for example "+1/3". Double-tap the value to reset it to 0. The step and the range come from the camera, usually 1/3 or 1/2 EV. If the camera does not support exposure compensation, the buttons are hidden. The value is written to DNG metadata.

7 Viewfinder LUT



The same LUT button as in the manual column: turns the viewfinder LUT on and off. See Viewfinder LUT.

8 9 Darker and brighter



lower exposure compensation by one step;



raise exposure compensation by one step.

10 Anti-banding (AE)

Cycles through the anti-banding modes the camera supports; the button shows the mode as text: **Off**, **Auto**, **⋮50Hz**, **⋮60Hz**. It adjusts automatic exposure so that mains-powered lights do not cause dark bands across the frame. The same setting is in the hardware settings of the video menu.

11 AE lock

Holds the current automatic exposure until you tap it again. It works only in automatic mode and is not saved: switching cameras or restarting the app releases it.



exposure follows the scene;



exposure is locked.

To lock exposure for every recording automatically, use **AE autolock** in Control.

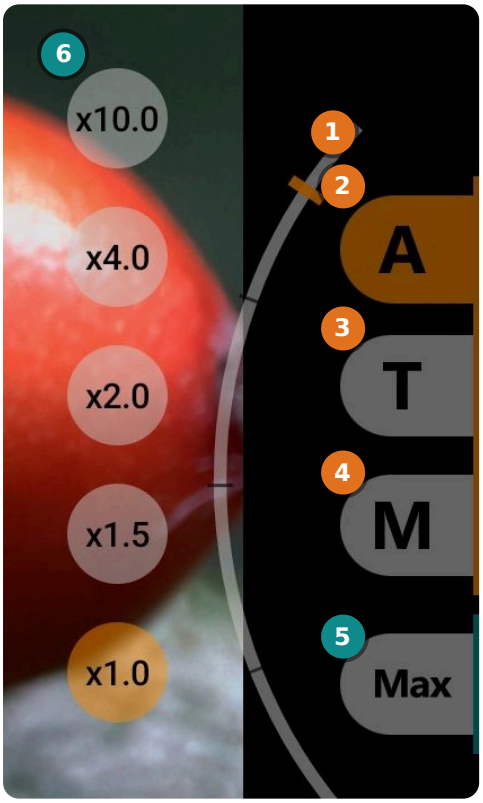
⑤ Focus and zoom controls

Focus and zoom controls are on the right side of the screen: the wheel, the focus mode buttons A, T and M, the zoom mode button, zoom factor buttons, and in manual focus and zoom modes the buttons for programmed pulls and limits. The column can be hidden or shown on a swipe in Interface.

Focus mode, wheel positions, limits and the pull settings are stored separately for each camera. Focus and zoom changes made during recording go into the file.

The wheel on the right controls focus or zoom: an orange arc means focus, a teal arc means zoom, and a thin grey arc with a brown marker is the autofocus indicator. Focus and zoom are described on their own pages: focus and zoom.

Focus



Focus: A

1 The wheel

The arc on the right shows where the lens is focused and, in manual focus, sets the distance:

- orange arc and pointer: manual focus (M). Turn the wheel by moving a finger around its centre to set the distance;
- thin grey arc with a brown marker: autofocus indicator in modes A and T. The wheel does not take touches; the marker shows where the lens is focused now and moves along the arc when the camera refocuses.

The whole arc covers the full focus range, or the range between the limits if limits are set. While your finger is on the wheel, the frame shows an approximate distance, such as "~50 cm", "~2.30 m" or "∞". Touching the wheel closes open menus and stops a running pull. The position is saved when you lift your finger, except during recording.

2 Continuous autofocus



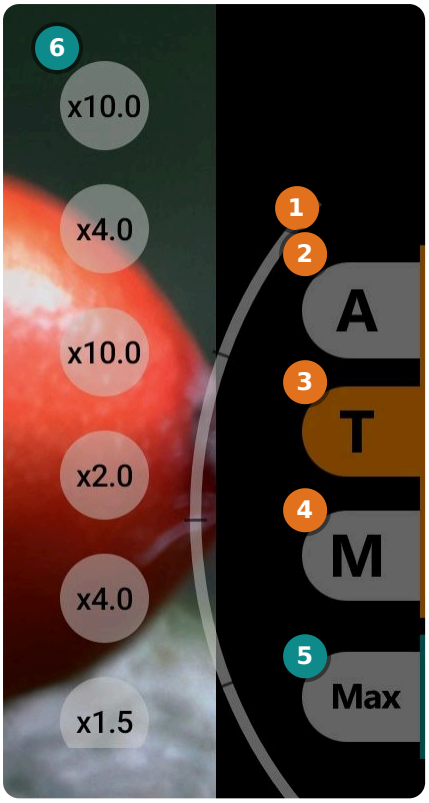
The camera keeps focusing on its own; the button is highlighted while this mode is on. Tapping A again sends a single focus command to the camera. Above 30 fps some phones switch to a different autofocus mode suited to high frame rates. In this mode no focus frame is shown. The button is hidden if the camera has no continuous autofocus. With **Face focus** on in Control, the camera focuses on faces in this mode and outlines them.

3 Tap to focus



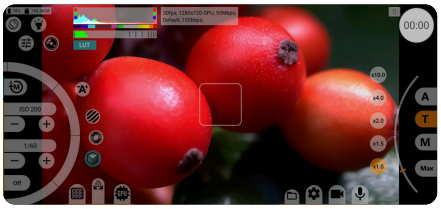
Tap the viewfinder to focus on that point; the app focuses once and holds. Tap T again to refocus on the same point. Only focus is set from the point, exposure is not.

A tap on the viewfinder first closes an open menu. A swipe across the viewfinder hides or shows the interface instead of focusing.



Focus: T

In tap-to-focus mode a square marks the point the camera focuses on. Its colour shows the camera's autofocus state:



grey: autofocus has not finished yet;

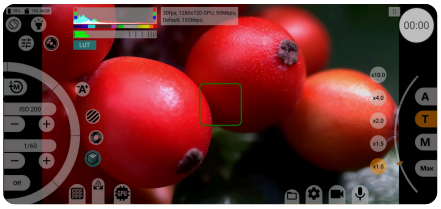


green: the point is in focus;

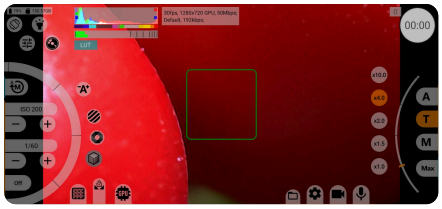


gold: the camera could not focus on this point; try a point with more contrast.

The size of the square depends on the zoom. At the widest view it is about a tenth of the long side of the screen, and it grows as you zoom in, up to three times that size at the camera's maximum zoom. The area the camera measures focus in grows with it, so at strong zoom the focus point stays large enough to find detail.

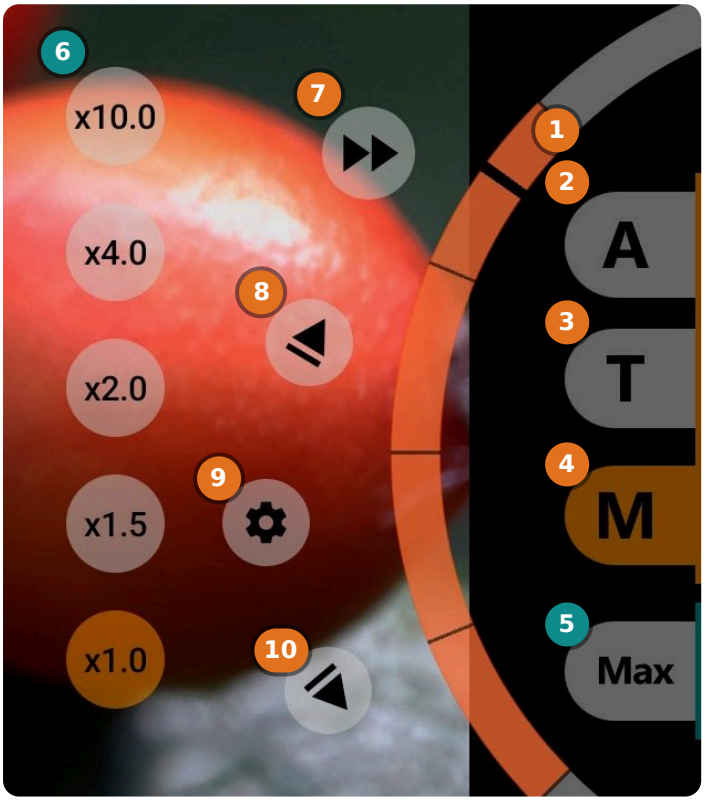


zoom ×1.0:



zoom ×4:

In RAW the square is a little smaller. The frame stays on the screen in tap-to-focus mode and disappears when you switch to A, M or zoom.



Focus: M

4 Manual focus

Autofocus is off and the wheel sets the focus distance. Manual focus starts from the point autofocus reached, within the set limits. In this mode the pull and focus limit buttons appear.

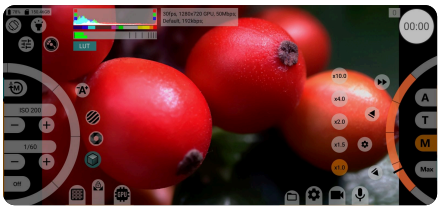


manual focus;

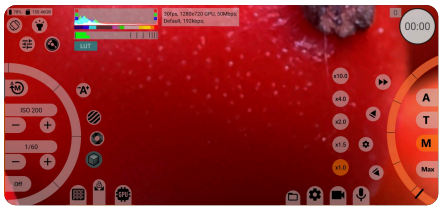


manual focus with **Infinity focus mode** on: long-press M to switch it on or off. The far end of the wheel is then your own saved infinity point (see **Infinity focus value** below).

Double-tap any point of the viewfinder to magnify it 4×. The wheel becomes finer at the same time. The magnifier is shown only on the screen and an external monitor and does not go into the recording. Double-tap again to turn it off; switching to A, T or zoom also turns it off.



before: manual focus, the whole frame:



after a double tap on a point of the frame: that point is magnified 4×, the wheel arc is longer:

The button is hidden if the camera has no manual focus.

Limits and programmed pulls

A pull moves focus or zoom smoothly between two set points. Set the points with the limit buttons, then start the move with a limit button or with the play button.

7 Programmed pull

starts focus and zoom together: focus goes to whichever of its limits is further from the current position, and so does zoom. Without zoom limits, zoom goes to the end of its range.

a pull is running; tap to stop.

This is the main way to do a focus pull or a zoom-in on camera. It can also be assigned to the volume, zoom or camera keys in Control.

8 Focus top limit

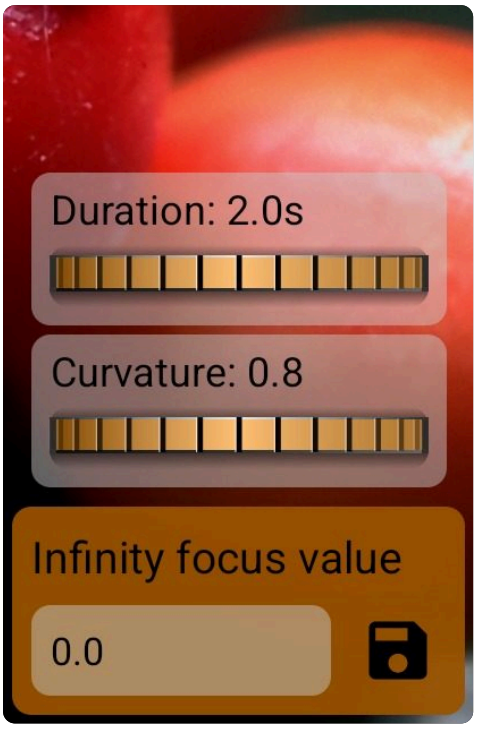
tap to move focus smoothly to the top limit, or to infinity if no limit is set. Long-press to set the current position as the limit, long-press again to clear it. A button with a set limit is highlighted.

focus is moving; tap to stop.

Limits also narrow the wheel: the whole arc then covers only the range between them. You can set and clear limits during recording.

9 Focus pull settings

Opens the pull settings (not during recording).



Duration

How long the pull takes from one limit to the other, from 0 to 30 seconds; a shorter distance takes proportionally less time. Default: 2.0 seconds. At 0.1 seconds or less the value jumps straight to the limit. Double-tap to reset.

Curvature

How the pull speed changes along the way. Values below 1 make the steps finer near the far end of the range, values above 1 near the close (wide) end. Default: 0.8 for focus and 1.2 for zoom. Changing it keeps the current focus distance and zoom where they are. Double-tap to reset.

Infinity focus value

Shown when **Infinity focus mode** is on. Use it with adapted lenses whose infinity is beyond the phone's normal focus range: focus at a distant object, then tap the save button to make that point the end of the scale. Double-tap the value to reset it to 0.0 (true infinity). To save a

point further than the current one, reset first.

10 Focus bottom limit



the same as the top limit, towards the near end of the focus range.

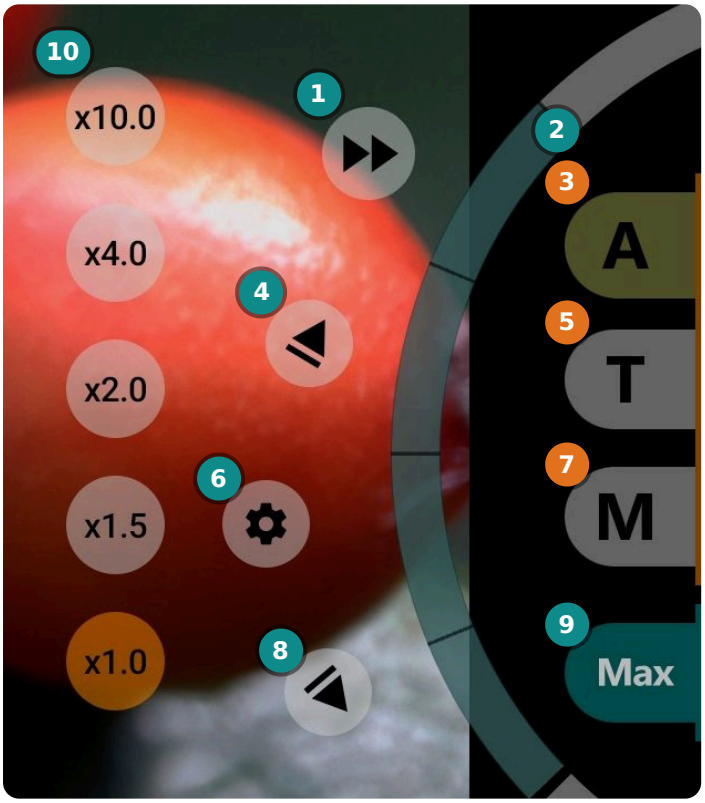


focus is moving; tap to stop.

Related settings

In Control: **Infinity focus mode**: **Off**: the far end of the focus scale is the camera's hyperfocal distance; **On**: the saved **Infinity focus value**, which is true infinity by default.

Zoom



Zoom

1 Programmed pull

A zoom pull moves the zoom smoothly between two set points, like a focus pull.



starts the zoom and focus pull: zoom goes to whichever of its limits is further from the current position. Without zoom limits, zoom goes to the end of its range.

a pull is running; tap to stop.

See the programmed pull for details.

2 The wheel

In zoom mode the arc is teal and the wheel sets the zoom. Turn it by moving a finger around its centre. The whole arc covers the full zoom range, or the range between the zoom limits if limits are set. While your finger is on the wheel, the frame shows the zoom factor ("x1.23") or, on phones without zoom factors, the crop size in pixels. Touching the wheel closes open menus and stops a running pull. The position is saved when you lift your finger, except during recording.

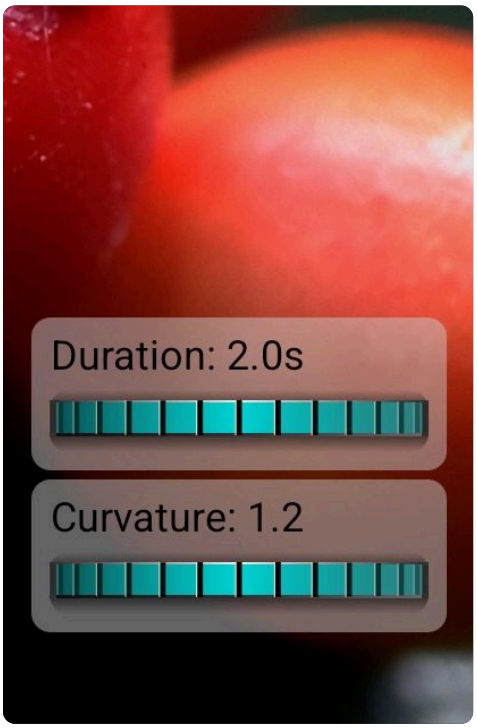
4 Zoom top limit

tap to zoom in smoothly to the top limit, or to the end of the range. Long-press to set or clear the limit, as for focus.

zoom is moving; tap to stop.

6 Zoom pull settings

Opens **Duration** and **Curvature** for zoom; they work as for focus.



8 Zoom bottom limit



the same towards the wide end.



zoom is moving; tap to stop.

9 Zoom mode

Switches the wheel to zoom; the button is highlighted while the wheel is in zoom mode. The selected focus mode keeps working. To return the wheel to focus, tap A, T or M. In this mode the pull and zoom limit buttons appear.

Long-press the button to step through **Maximum zoom** values. The button shows the current one:



up to video size: a crop where one sensor pixel is one video pixel;



up to ×1.5 of that;



up to ×2.0 of that;



up to the camera's maximum (default).

The button is hidden if the camera has no digital zoom, and in RAW.

10 Zoom factor buttons

The buttons above the wheel jump to set zoom factors, such as x0.6, x1.0, x2.0. On phones with several rear cameras, the phone itself picks the camera module for the zoom factor. On some phones, including several Sony Xperia models, the buttons show focal lengths in mm and switch lenses directly. They work during recording and in any wheel mode.

Smooth zoom factor switching makes the jump a 0.2-second transition. If a factor is beyond **Maximum zoom** or the zoom limits, the app shows **This zoom factor is unavailable: it is limited by the Maximum zoom setting or by the set zoom limits**. The buttons are hidden by **Zoom factor buttons** and, on Sony, in RAW.

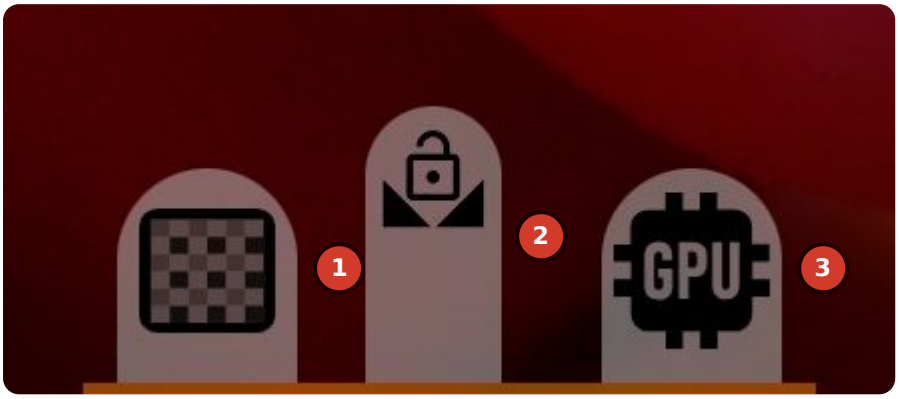
Related settings

In Control: **Maximum zoom**, the top of the zoom scale, the same values as on the zoom mode button. The change takes effect immediately, so the zoom jumps if the wheel stays in place.

In Interface: **Zoom factor buttons** and **Smooth zoom factor switching**.

⑥ Image controls

The image control buttons are in the bottom left corner: the white balance button, the white balance lock (or the "A" button in manual mode) and the GPU menu button. Menus from these buttons do not open during recording.



1 White balance



Opens the white balance menu, described below. Tap again to close it.

2 White balance lock

Shown in **Auto** white balance mode. It holds the current automatic white balance until you tap it again and works during recording. The lock is not saved. To lock white balance for every recording automatically, use **AWB autolock** (automatic white balance lock) in Control.



white balance follows the scene;



white balance is locked.

Auto white balance once

Shown instead of the lock in **Manual** white balance mode. Hold it: while it is pressed the camera uses automatic white balance; when you release it, the result becomes the manual setting. It works during recording.



manual white balance without a saved preset;



a saved white balance preset is selected; double-tap to go back to plain manual mode.

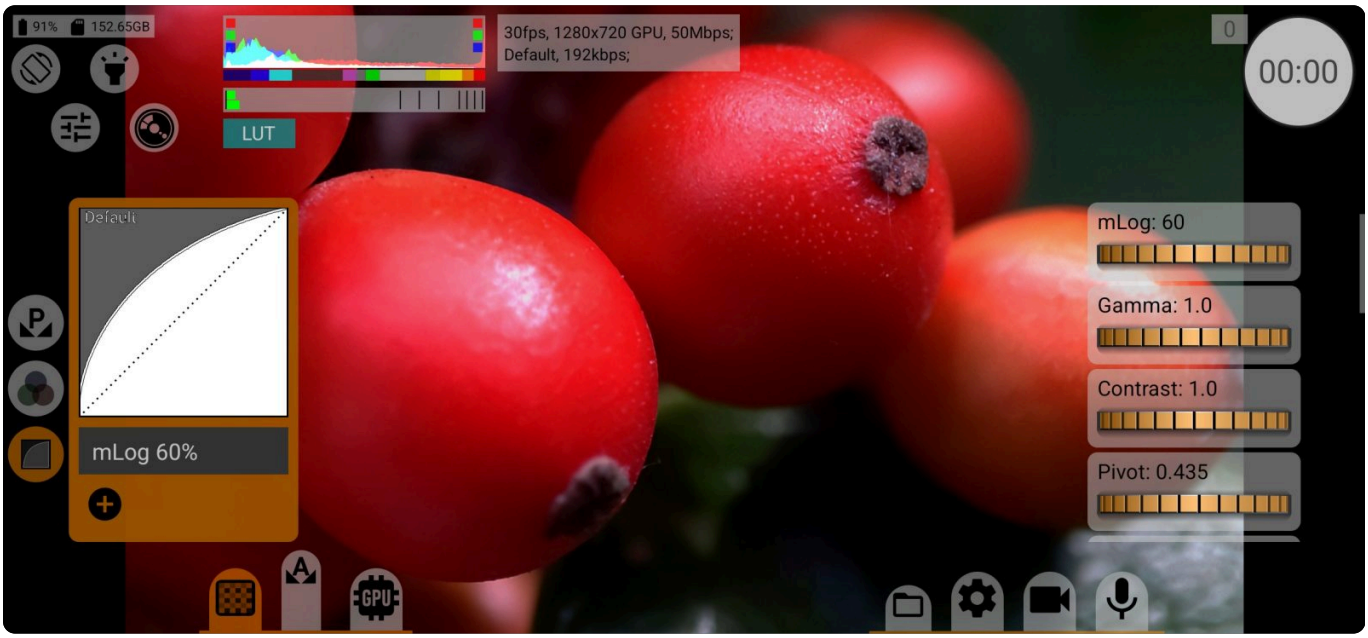
3 GPU menu

Opens the GPU processing menu: GPU curve, image and noise reduction. Shown when recording goes through the GPU.

White balance menu

The white balance button opens a menu with tabs on the left: the white balance mode, manual white balance, and the camera curve (described separately). Tap the button again to close the menu. Everything on these tabs is applied by the camera, so it goes into the recording, and it is stored separately for each camera.

The current white balance can be shown in the information panel at the bottom left: tick **WB** under **Show information** in Interface.



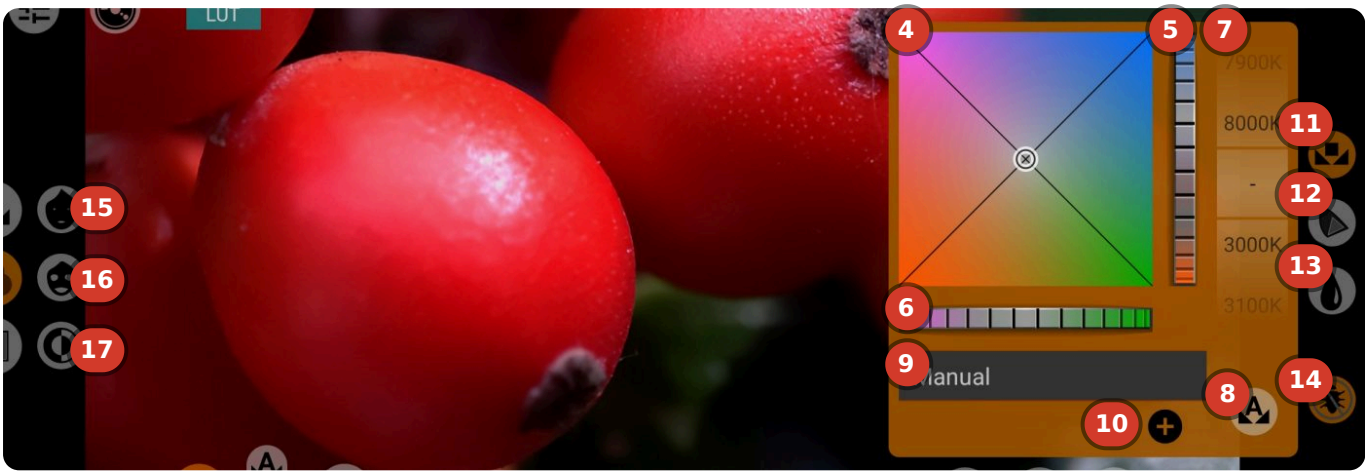
White balance modes

The list shows the modes the camera supports, usually: **Auto**, **Manual**, **Incandescent**, **Fluorescent**, **Warm fluorescent**, **Daylight**, **Cloudy**, **Twilight**, **Shade**. Default: **Auto**.

Switching between manual and any other mode restarts the viewfinder briefly. In RAW the white balance does not change the pixels: it is written to the DNG as a tag, and you set the final balance during development.

Manual white balance

The manual tab works only in **Manual** mode. In other modes it shows the message "**This tab only works in manual WB mode**" and a **Turn on** button that switches to manual mode.



The buttons in the column on the right switch between three panels: the white balance itself, the colour gamut and the colour matrix. The last two are not available in RAW and on cameras without manual colour processing. The buttons in the left column add colour checks on top of the viewfinder.

4 Balance plate

The square plate moves both wheels at once: left and right is colour temperature, up and down is tint. The marker shows the current balance.

5 Temperature wheel

The vertical wheel shifts the balance between blue and yellow (colour temperature). Double-tap it to reset.

6 Tint wheel

The horizontal wheel shifts the balance between green and magenta (tint). Double-tap it to reset.

7 Kelvin wheel

Sets the temperature from 3000 K to 8000 K in steps of 100 K and keeps the tint. "-" means no Kelvin value.

8 Auto white balance once



Sets the balance automatically once. Hold it: while it is pressed the camera uses automatic white balance; when you release it, the result becomes the manual setting. The same "A" button is next to the white balance button on the main screen. It works during recording.

9 10 Presets

The list shows the current preset.  saves the current balance as a preset with a name of up to 30 characters; a preset stores only the two wheels. For a saved preset,  returns to its values and  removes it. Double-tap the "A" button on the main screen to go from a preset back to plain manual mode.

11 White balance panel



Shows the white balance panel described above.

12 Colour gamut



Shows the colour gamut panel: the target colour space of the camera's colour matrix. Options: sRGB/Rec.709, P3-D65, P3-DCI, Rec.2020, A Wide Gamut, C Cinema Gamut, P V-Gamut, R Wide Gamut, S-Gamut/-3, S-Gamut3.Cine, D-Gamut, Davinci Wide Gamut, ACES AP1, ACES AP0, XYZ. Pick the gamut that matches the log curve and the conversion you use in post. Default: sRGB/Rec.709.

13 Colour matrix



Shows the colour matrix panel: three blocks of sliders, each with a common slider and separate R, G and B sliders:

- **Saturation**;
- **Gain**: the common slider only lowers the level, the channel sliders raise or lower;
- **Hue**: the common slider turns hue by up to ±180°, channel sliders by up to ±30°.

Double-tap a slider to reset it. A button in this panel switches how saturation is calculated: weighted by the gamut's luminance or by equal thirds.

14 Highlight fix



The bug button fixes artefacts in highlights with steep curves in manual white balance: it slightly lowers the gain and recalculates the curve. It is on by default on most phones.

15 Skin tone check, wide



Paints the areas of the picture with a skin tone yellow, with a wide selection that also takes in nearby tones.

16 Skin tone check



The same with a narrow selection: only tones close to skin in colour and brightness.

17 Neutral tone check



Paints the neutral, unsaturated areas of the picture yellow. It helps to set the balance by a grey card or a white wall: when the balance is right, they turn yellow.

The three checks are only on the screen while this tab is open, not in the recording, and they need the viewfinder to go through the GPU. If zebra or False Color was on, it comes back when the tab closes.

Camera curve

In the app: 6 → → Curve

The third tab of the white balance menu sets the camera's tone curve. The camera applies it before the encoder, so the curve goes into the recording, unlike a viewfinder LUT. The tab is not available in RAW and on phones whose camera does not accept a custom curve. The curve, its slider values and range are stored separately for each camera.

The graph above the list shows the selected curve.



Curves

- **Auto**: the phone's own processing. The app adds a guess of what it resembles, such as "~Rec.709" or "~HLG".
- **Linear** and **Standard**: a linear curve and a normal video look, both adjustable.
- mLog 60%, mLog 80%, mLog 100%: the app's own log curves with full set of sliders.
- Rec.709, sRGB: standard display curves.
- HLG1, HLG2, HLG/-3, PQ: HDR curves.
- mStopsLog, mCineLog: the app's log curves with a set dynamic range.
- AppleLog, ACEScct, SamsungLog, Davinci, Cineon Film and versions of known camera log curves (mLog-C, mC-Log3, mF-Log, mD-Log, mN-Log, mV-Log, mLog3G10, mS-Log, mS-Log2, mS-Log3). The "m" prefix means the app's own approximation of the curve; use the matching conversion LUT in post.
- Your saved curves, listed as "Name (number)".

Default: **Auto**.

Some log and HDR curves are aggressive, and on many phones they cause artefacts in the highlights. When you pick such a curve, the app shows the “**Aggressive curve problem**” window with advice, and marks these curves in the list with a warning sign. In manual white balance with the bug button on, the problem is handled and the window is not shown.

Sliders

What sliders a curve has depends on the curve:

- Rec.709, sRGB, mCineLog: **HOMG** and **Balance**;
- HLG curves: **Balance**;
- mStopsLog: the number of stops, width, level and **Balance**;
- camera log curves and PQ: the white point in stops (labelled **HOMG**, "Nit" for PQ, "EI" for mLog-C) and **Balance**;

- **Linear**, **Standard**, mLog and saved curves: **mLog**, **Gamma**, **Contrast**, **Pivot** (the contrast pivot), **Shadows**, **Midtones**, **Highlights**, **White**, **Black**, and R, G, B.

Balance changes how the curve's points are spread; only some phones (Sony) actually use it. Double-tap a slider to reset it to the curve's default (not during recording).

Double-tap the graph to switch the curve's range: **Default**, **Limited** or **Full**.

Saving

The save button below the list stores the current curve with its slider values under a name. For a saved curve it asks whether to update it or create a new one. The undo button returns the sliders to the saved values, the delete button removes a saved curve. The same three buttons work on the GPU menu tabs.

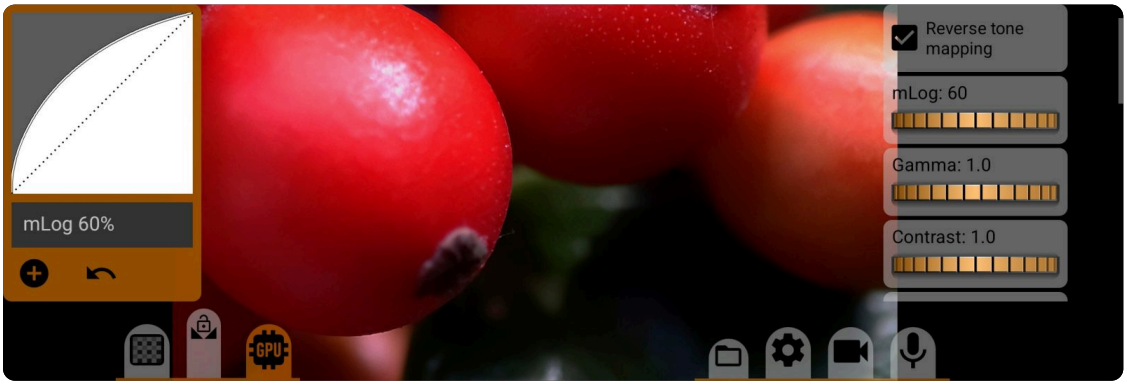
GPU processing menu

In the app: 6 → GPU

The GPU menu button is shown when recording goes through the GPU, which is turned on in the video menu. It is not available in RAW. Everything in this menu is applied by the GPU to both the viewfinder and the recording. The menu does not open during recording and remembers the last tab.

The tabs are: noise reduction and sharpening, GPU curve, image. Each has its own presets; the save, undo and delete buttons work as for the camera curve. Choices are stored separately for each camera.

GPU curve



A second tone curve, applied by the GPU after the camera. The list is the same as for the camera curve, without Standard and mStopsLog, plus **Off**. Default: **Off**.

Reverse tone mapping

Before the GPU curve, undoes the camera curve so that the GPU works on linear data. If the camera curve is **Auto**, a neutral formula is used. This lets you shoot with one curve in the camera and convert it to another on the GPU. Hidden when the GPU curve is **Off**. The file's colour metadata takes it into account.

The GPU curve name (with "RvTm" when reverse tone mapping is on) is written to the file's metadata.

Image



Presets: **Off**, **Empty** (a neutral starting point) and your saved ones. Default: **Off**. With any preset except **Off** the sliders are: **Saturation**, **Vibrance**, **Contrast**, **Shadows**, **Highlights**, R, G, B and **Sat. S/H** (saturation in shadows and highlights).

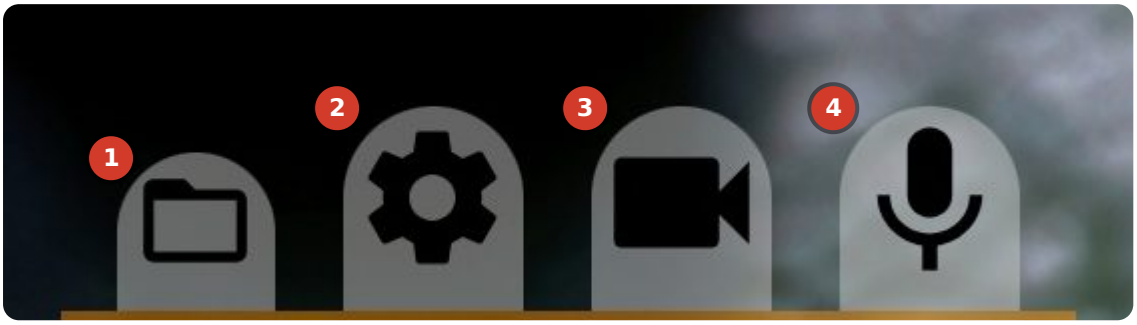
Noise reduction and sharpening



Presets: **Off**, **Empty** and your saved ones. Sliders: **Blur radius**, **Blur strength**, **Sharp. radius** (sharpening radius) and **Sharp. strength** (sharpening strength). Noise reduction works only when both its radius and strength are set, and the same goes for sharpening.

⑦ Settings buttons & media manager

The settings buttons are in the bottom right corner. They open the media manager, the app settings and the video and audio menus. The menus do not open during recording. The group can be hidden or shown on a swipe in Interface.



1 Media manager

Opens the media manager: your recordings, RAW recordings and snapshots.

2 Settings

Opens the app settings: viewfinder, control, interface, storage and other settings.

3 Video

Opens the video menu: frame size and rate, slow motion, codec, metadata, GPU and hardware settings.

4 Audio

Opens the audio menu.

Folded buttons

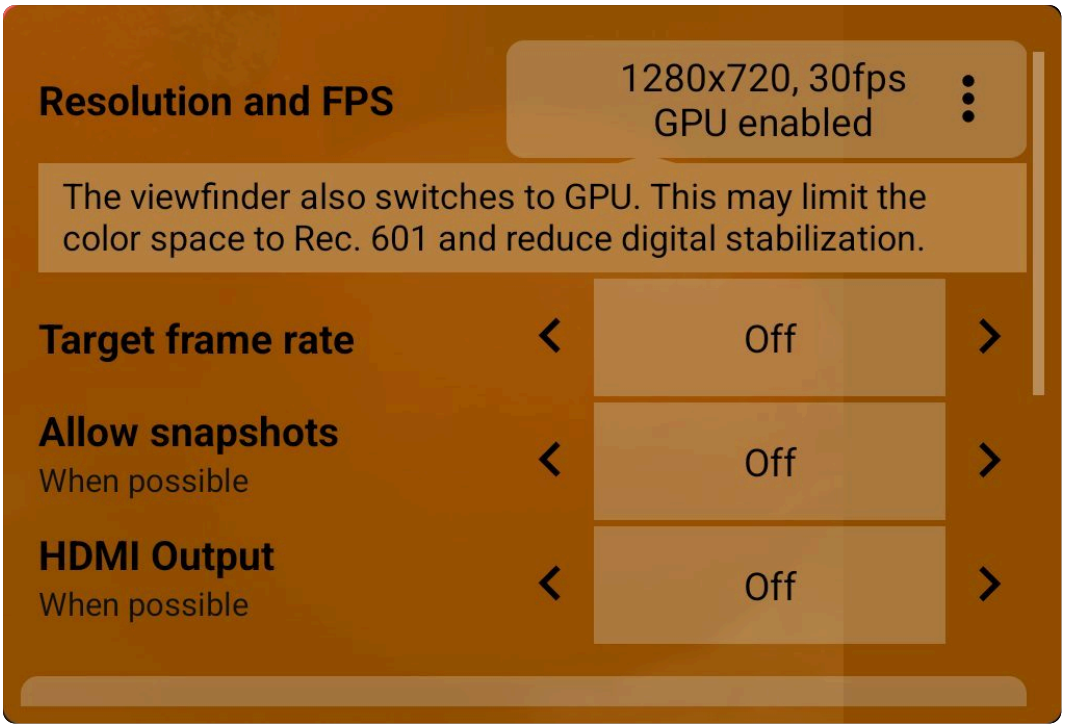
On a narrow screen, for example when the phone is held upright, the four buttons fold into this one. Tap it to show them.

Video menu

In the app: 7 →

The video camera button opens the recording settings: frame size and rate, slow motion, snapshots and HDMI output. Below them are four sections: Codec and container settings, Metadata settings, GPU and hardware settings.

The menu does not open during recording.



Resolution and FPS

Shows the current frame size, frame rate and whether recording goes through the GPU (**GPU enabled** / **GPU disabled**). Tap it to open the picker with three wheels:

- frame rate, from 480 down to 24 fps and lower rates (down to 1 fps where the camera allows it);
- frame size;
- **Off** / **GPU**: record straight from the camera, or through the GPU, where LUTs, curves and other image processing are applied to the recording.

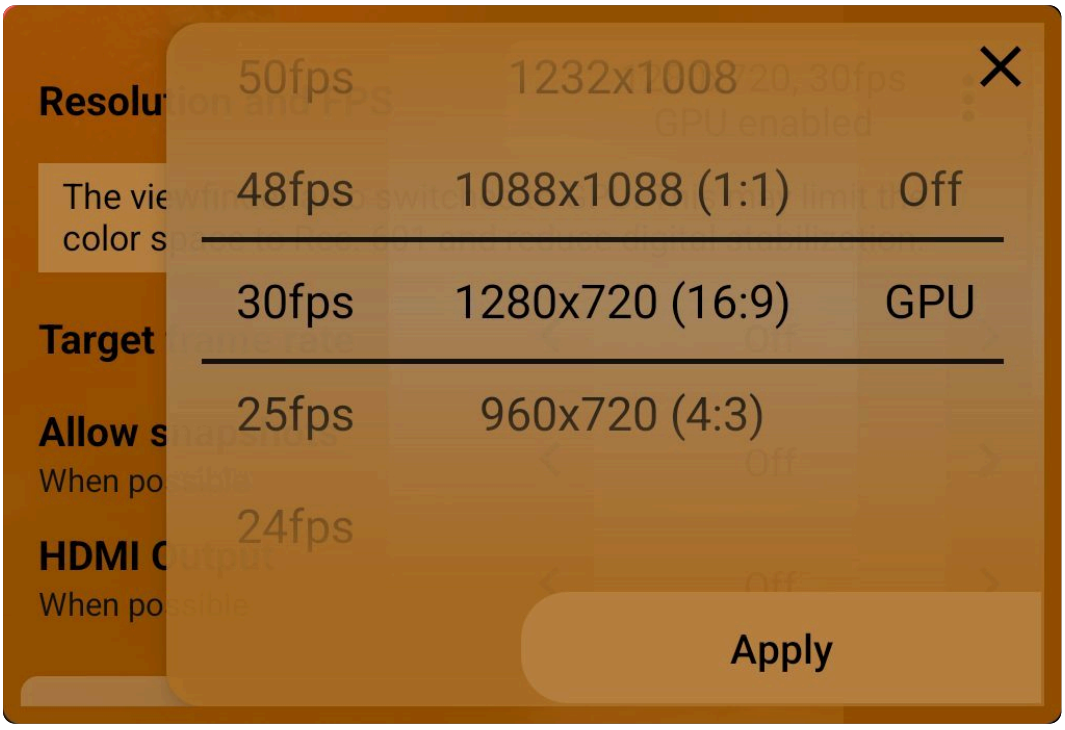
Turn one wheel at a time; the other two adjust to it. Values that do not work with the current choice are dimmed and the wheel skips them. A red background means the value is not officially supported by the phone: you can select it, but results vary. Tap **Apply** to confirm, or close the picker to keep the old setting. Changing the size or frame rate resets zoom.

Size, frame rate and GPU are stored separately for each camera. Default: 1280×720, 30 fps, without GPU.

Which combinations are available depends on the phone and the camera. Above 60 fps the camera switches to high-speed mode, where manual settings are usually unavailable. Above 30 fps, selecting a size can switch exposure to manual or automatic if the phone supports that size in only one of them. In RAW, only sizes and frame rates that RAW recording can handle are offered, without GPU.

Notes under the row explain the current choice:

- **Your device does not officially support this frame rate. It may not work correctly, especially in automatic exposure mode.**
- **This frame rate may not work with manual exposure.**
- **High-speed modes usually don't allow manual settings, may be unstable and may not work with some setting combinations.**
- **The viewfinder also switches to GPU. This may limit the color space to Rec. 601 and reduce digital stabilization.**



Target frame rate

The frame rate written into the file: **Off**, 6, 12, 24, 25, 30, 60, 120 or 240 fps. The camera shoots at the frame rate set above, and the file plays back at this one. Lower than the shooting rate gives slow motion (for example, 120 fps played at 24), higher gives fast motion. The sound is adjusted to the new speed. While slow or fast motion is on, the target rate is shown on the screen. Stored separately for each camera. Default: **Off**.

The value equal to the shooting rate is skipped. At 1 fps a target rate is required.

Works with the MOV and MP4 containers and RAW. On the `system` container it needs **Metadata** to be on, or a phone with Android 11+ on Qualcomm, Exynos or Kirin; otherwise the row shows **Off**.

Allow snapshots

Adds a snapshot button to the shooting screen: **Off** / **Allow**. The snapshot is taken from the video stream through the GPU. **When possible**: without GPU recording it works only in some modes (at up to 30 fps, or on Android 9+ when the sizes match), and the button appears only when a snapshot is possible. Default: **Off**.

HDMI Output

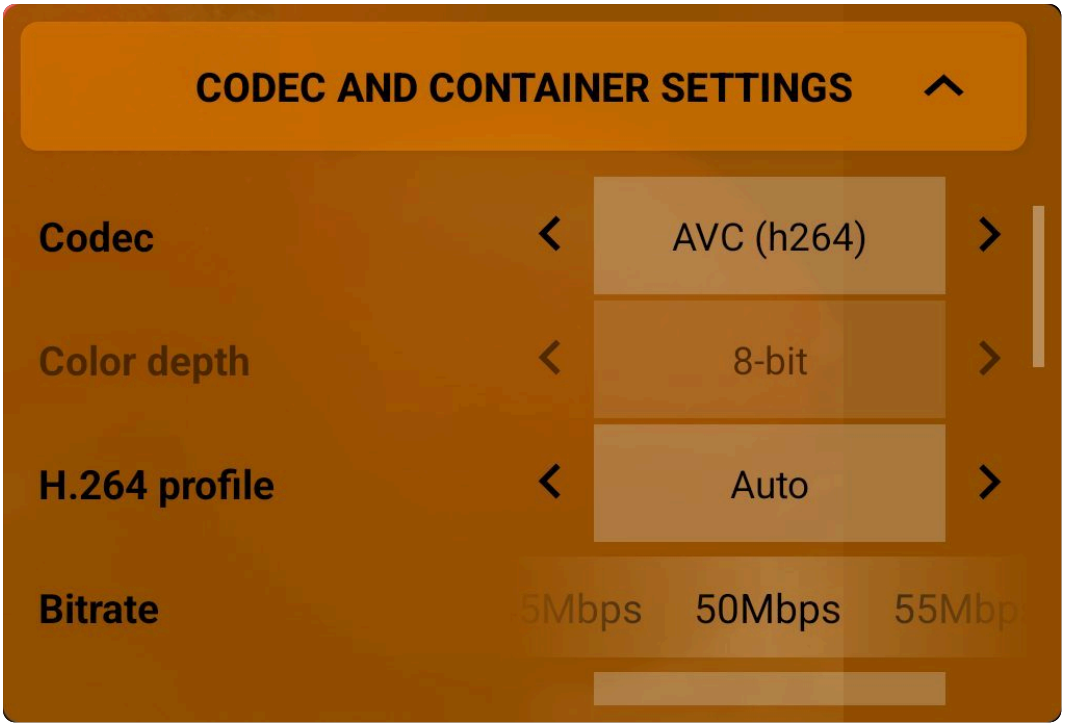
Sends the clean video stream to an external display connected over HDMI or USB-C, for an external recorder or monitor: **Off** / **On**. The phone does not record while this is on: starting a recording shows **Recording via HDMI is On**. Without GPU the monitor shows the picture only in sizes and frame rates it can take. If no display is connected, the app shows **HDMI connection not found**. Default: **Off**.

For the viewfinder picture with your monitoring tools on the monitor, use HDMI Output in the viewfinder settings instead.

Codec and container settings

In the app: 7 → → Codec and container settings

Codec and container settings choose how the video is compressed and what file it goes into. The rows depend on the codec: one set for compressed video, another for RAW.



Codec

The video codec: **AVC (h264)**, **HEVC (h265)**, **DolbyVision**, **APV**, **VP8**, **VP9**, **AV1** or **RAW**. Only codecs the phone has a hardware encoder for are listed (on Android 9 and older, software encoders count too). Default: **AVC (h264)**.

- **APV**: Android 16 and later. **AV1**: Android 10 and later.
- **RAW**: records a sequence of DNG frames, only on cameras that provide RAW. Switching to RAW adjusts the frame size and rate to what RAW can do and reopens the camera. On a camera without RAW the app records AVC and returns to RAW when you switch back to a camera that has it.

With RAW selected, the metadata and GPU sections of this menu are unavailable.

Compressed video

Color depth

8-bit or **10-bit**, plus 10-bit HDR variants where the camera supports them: HLG10, HDR10, Dolby Vision. 10-bit needs a codec that supports it (HEVC, Dolby Vision, APV, AVC with the High10 profile, VP9 or AV1 with a 10-bit profile) and is limited by frame rate and size (on most phones up to 30 fps and 4096×3072). With GPU recording, 10-bit is available only on a few phones. On some phones plain 10-bit is not offered, only the HDR variants. Default: **8-bit**.

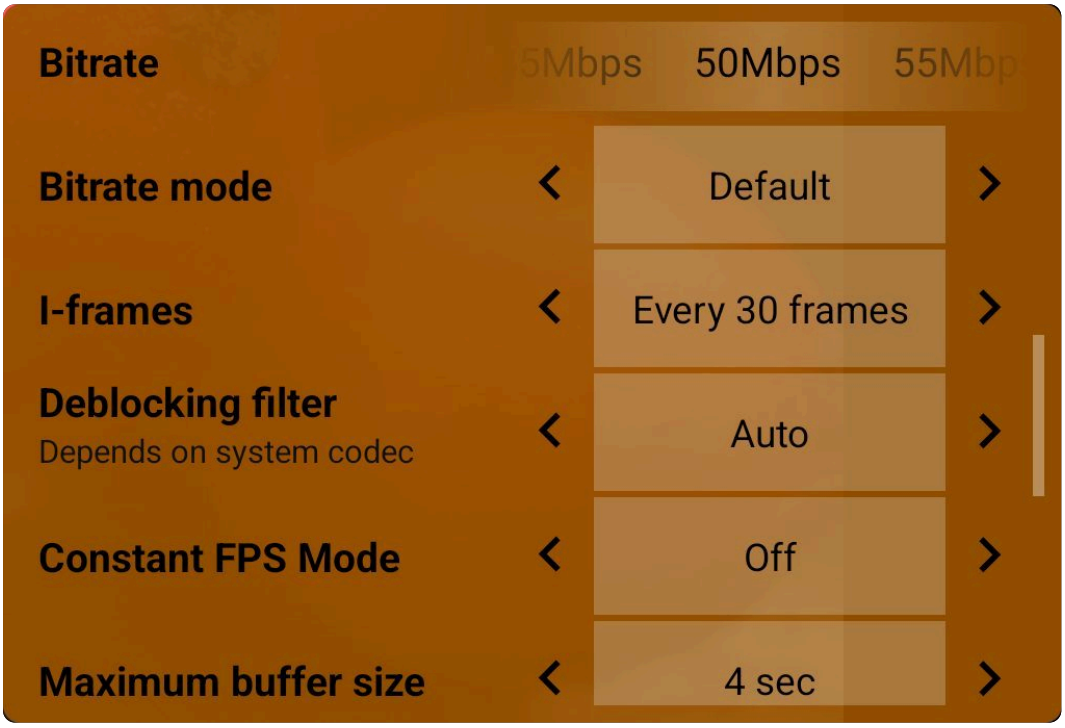
The row is hidden when the phone cannot record 10-bit at all, and greyed out when the current codec has only one option.

H.264 profile

For **AVC (h264)** only: **Auto** (the encoder decides), **Maximum** (the highest profile and level the encoder supports), **Baseline**, **Main** or **High**, each with its highest level. Profiles the encoder does not support are skipped. Default: **Auto**.

Bitrate

The target bitrate, from 1 to 500 Mbps (higher on phones whose encoder reports more). Values above the encoder's stated limit are shown in red: you can select them, but the phone may not reach them. Default: 50 Mbps.



Bitrate mode

Default (the encoder decides), **Variable**, **Constant** or **Constant (frame drops)** (Android 12 and later: keeps the bitrate by dropping frames). Modes the encoder does not support are skipped; the row is hidden if fewer than two are available. Default: **Default**.

I-frames

How often a keyframe is written: **Every frame**, or every N frames, from a few frames up to every two seconds. At 30 fps the choice is every frame, 3, 7, 15, 30 or 60 frames. More keyframes make editing and seeking easier and the file larger at the same quality. Default:

one keyframe per second.

Deblocking filter

The encoder's deblocking filter strength: **Auto**, or from −1:−1 to 3:3. Higher values smooth block edges more. **Depends on system codec**: the phone's encoder may ignore it. Default: **Auto**.

Constant FPS Mode

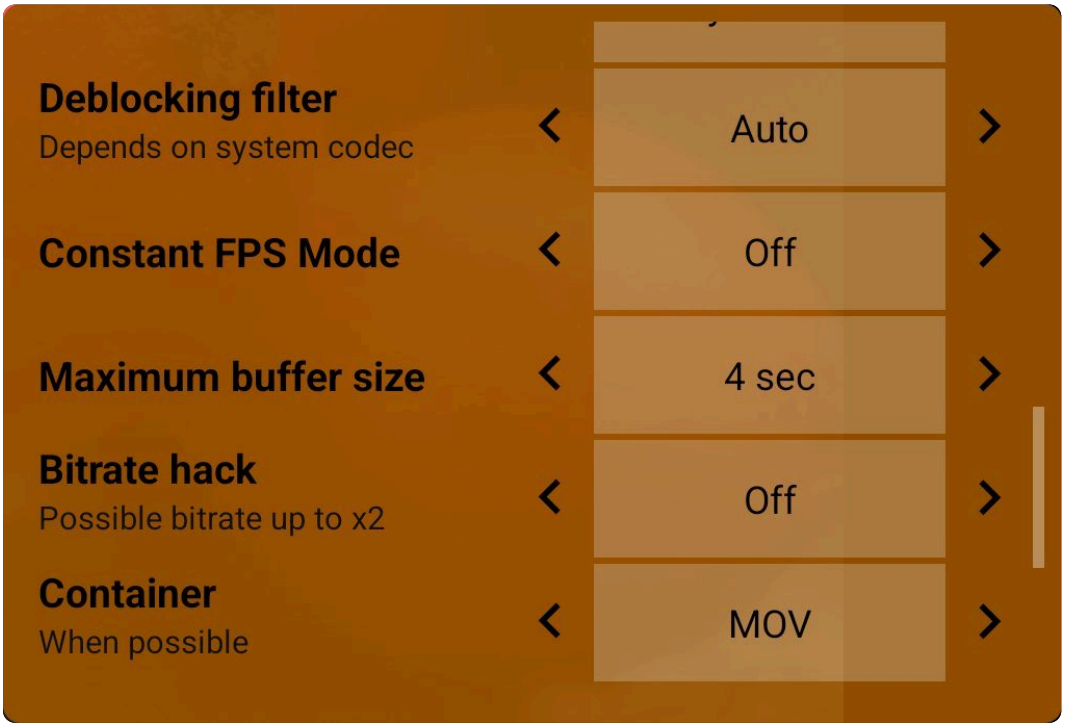
How frame timestamps are written:

- **Off**: as the camera delivered them;
- **Snap to grid**: frames are placed on an even grid at the nominal frame rate;
- **Ignore dropped frames**: every frame gets an even step; dropped frames leave no gaps.

If the phone cannot keep a steady frame rate, the last two can push sound and picture out of sync; a warning under the row says so when sound is recorded. Unavailable with the **System** container. Default: **Off**.

Maximum buffer size

How many seconds of video the app can hold in memory while the storage catches up: from 1 to 60 seconds. A larger buffer rides out short storage slowdowns at high bitrates. Default: 4 seconds.



Bitrate hack

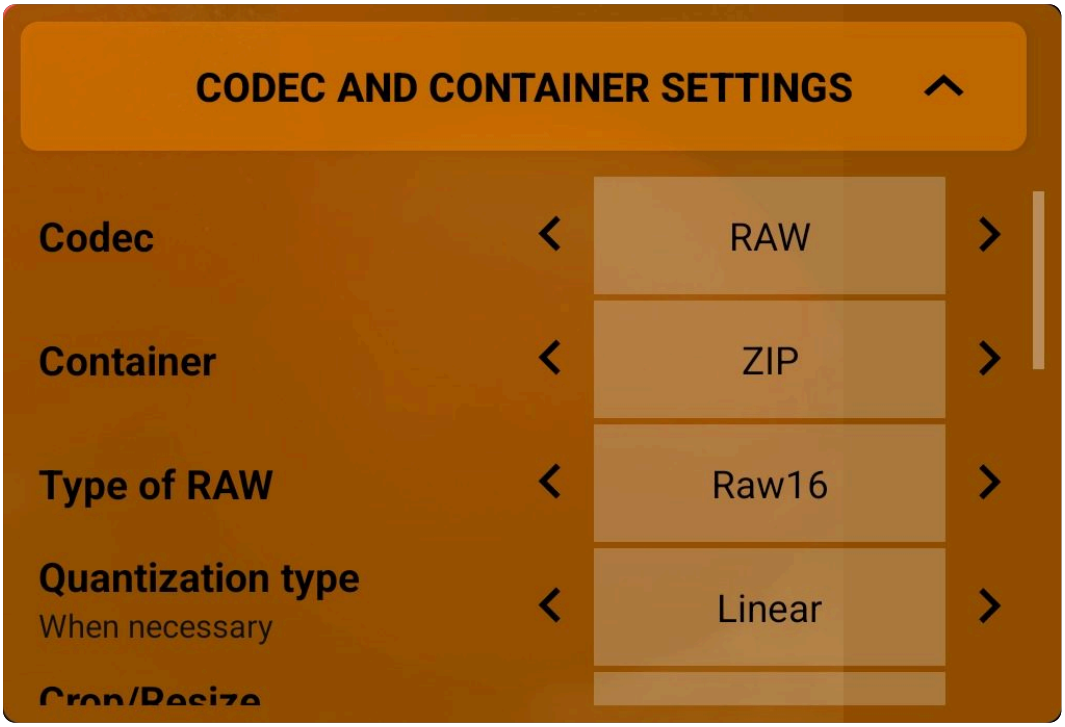
Lets the encoder write a higher bitrate than its built-in limit: **Off** / **On**. The value shows the multiplier the phone uses, x2 or x3. **Possible bitrate up to x2**: the result depends on the phone. The file plays at normal speed.

Shown only on Qualcomm phones with Android 11 and later. Works at 6 to 60 fps and without slow or fast motion; otherwise the row shows **Off**. Default: **Off**.

Container

The file type: **MOV**, **MP4** or **System**. MOV and MP4 are written by the app's own muxer; **System** uses the phone's Android muxer and saves MP4. For VP8 and VP9 the app's muxer is always used. Default: **MOV**.

RAW



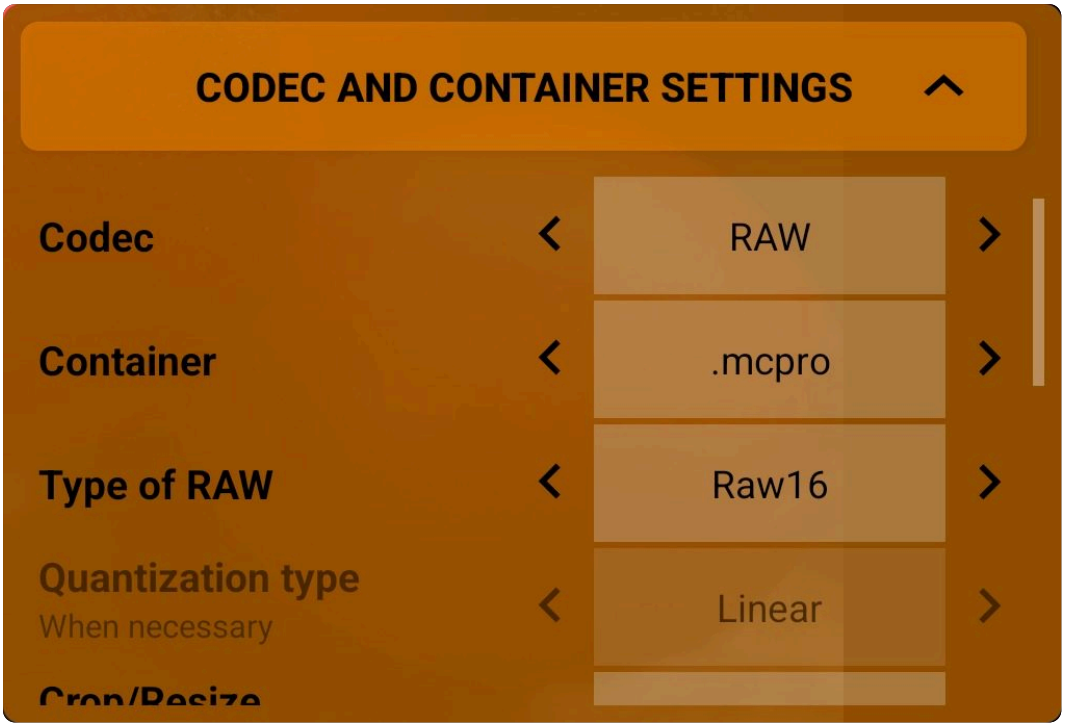
> mcpro24fps Demo
>
> The demo version does not record RAW, so the codec value shows a lock.

Container (RAW)

ZIP: a ZIP archive of DNG frames. **.mcpro**: the app's own RAW format, compressed much more strongly (Android 10+, 64-bit phones; part of RAW Bundle). Default: **ZIP**.

RAW Bundle

.mcpro and its compression levels are part of **RAW Bundle**, a separate one-time purchase (what it includes). Without it the value shows a lock, and the record button opens the purchase. **ZIP** is free.

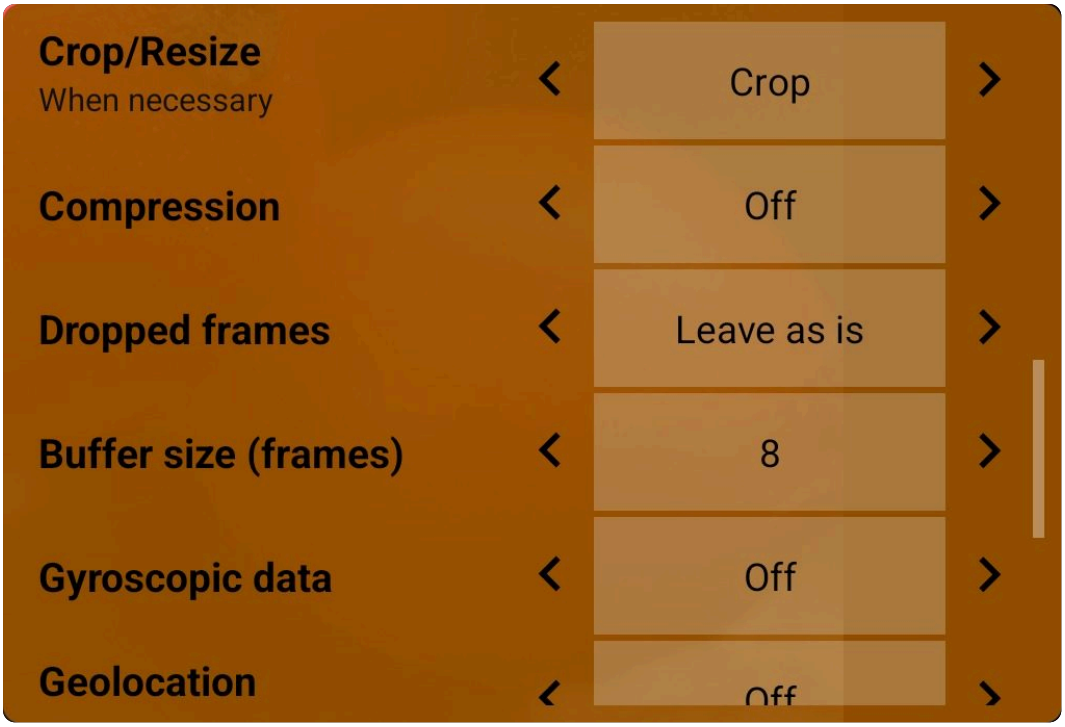


Type of RAW

The bit depth stored in the DNG: Raw16, Raw14, Raw12, Raw10 or Raw8. Lower depth means smaller files. Default: Raw16.

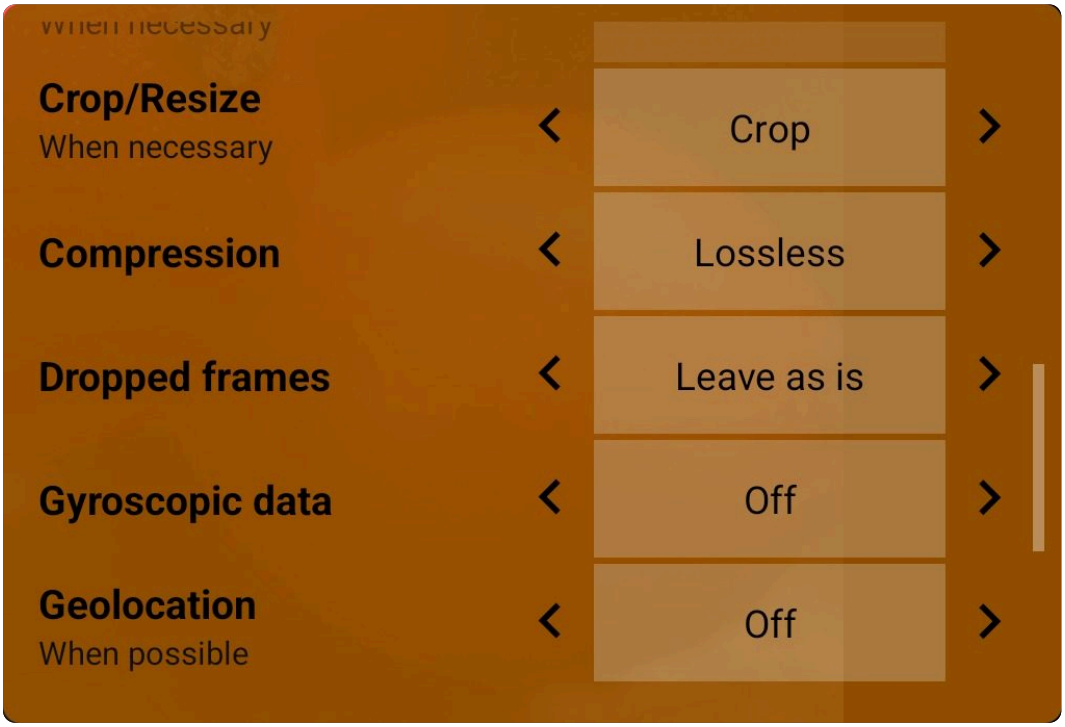
Quantization type

How the sensor data is reduced to Raw14 and below: **Linear** or **Log** (a logarithmic curve keeps more shadow detail at low bit depths). **When necessary**: has no effect at Raw16. Default: **Linear**.



Crop/Resize

How the sensor image is brought to the selected frame size: **Crop** (the centre is cut out) or scaling by interpolation: **Bilinear interpolation**, **Bicubic interpolation**, **Nearest-neighbor interpolation**, and CPU variants of bilinear and nearest. Cropping narrows the field of view; scaling keeps it. Default: **Crop**.

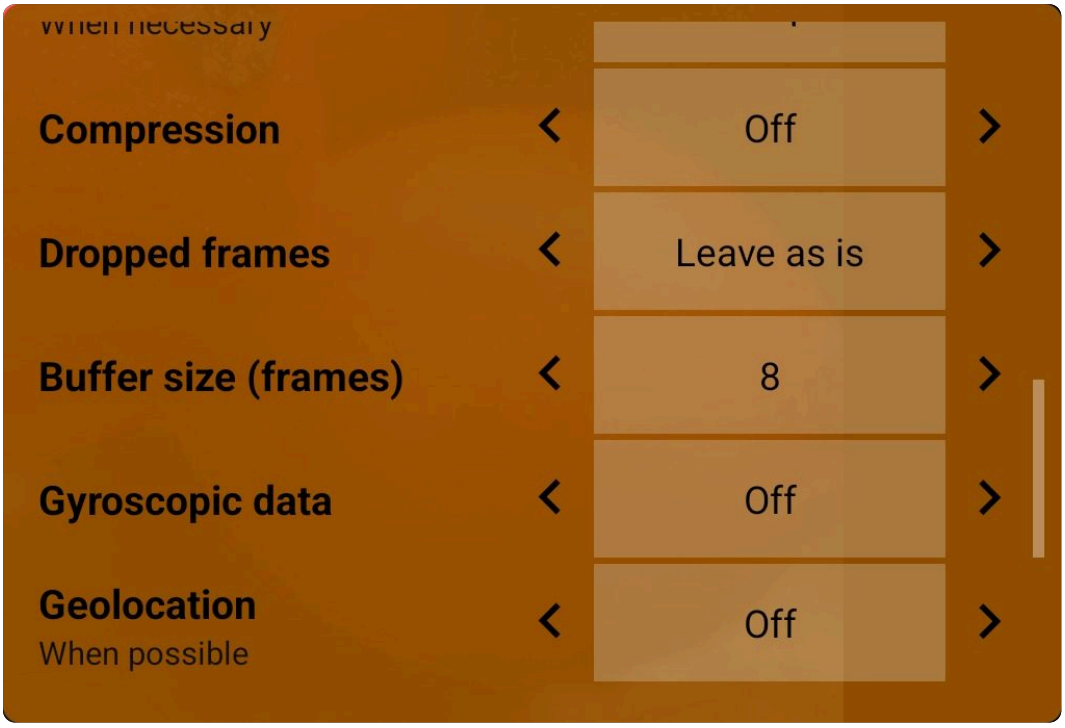


Compression

For ZIP: **Off**, **JPEG lossless**, **ZIP lossless** or **Zstandard lossless**. For .mcpro: Lossless, HQ, SQ or LT; SQ is visually lossless, LT the smallest. With .mcpro the expected data rate is shown on the screen. Defaults: **Off** for ZIP, SQ for .mcpro.

Dropped frames

What to do when the phone drops a frame: **Leave as is** (the DNG numbering keeps a gap) or **Ignore** (numbering stays continuous). Default: **Leave as is**.



Buffer size (frames)

How many RAW frames are held in memory before they are written: from 4 to 300. Hidden for .mcpro. Default: 8.

Gyroscopic data

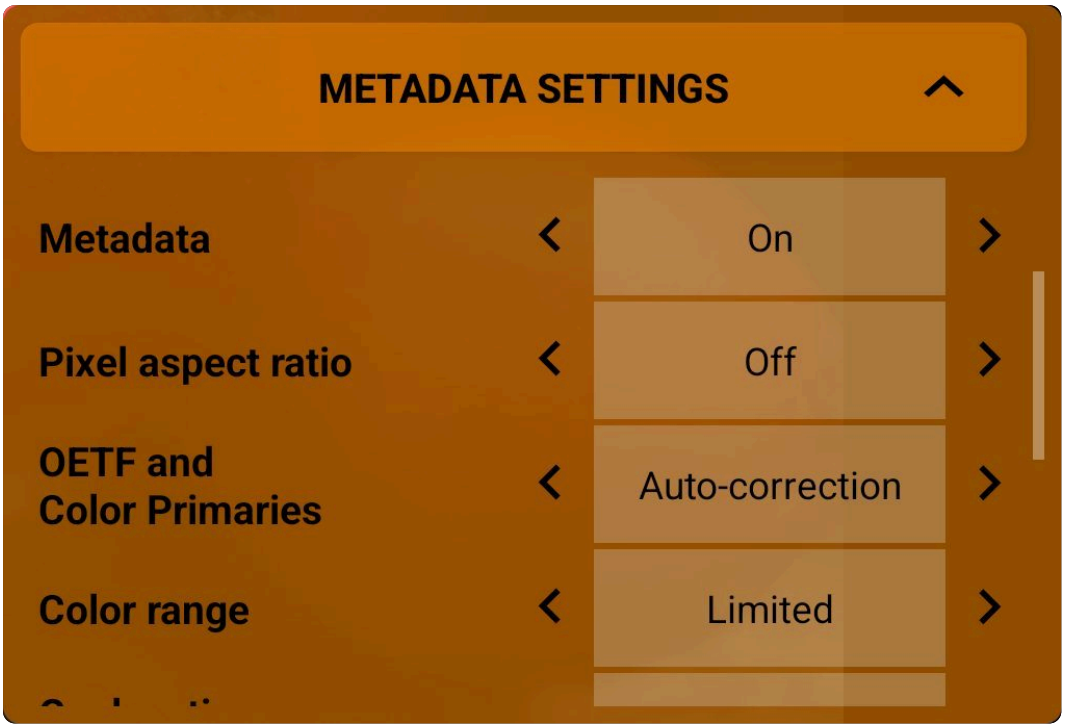
Gyro data for stabilisation in Gyroflow: **Off**, gcsv or Protobuf, written into the ZIP. With .mcpro the gyro data goes inside the recording. Default: **Off**.

Metadata settings

In the app: 7 → → Metadata settings

Metadata settings decide what is written into the video file besides the picture and sound: colour tags, pixel aspect ratio, location, timecode, gyro data and an embedded LUT. They take effect from the next recording.

The section is unavailable when the codec is RAW (the RAW codec settings have their own gyro row), and on Android older than 8.1.



Metadata

The main switch for this section: **On** / **Off**. Default: **On**.

With **On**, the file gets the app's own tags (phone, app version, colour curve, white balance, exposure and so on), and the other rows of this section become available. With **Off** the other rows are greyed out.

On the `system` container the file is rewritten after recording to add these tags. With **Off** that step is skipped and the file stays exactly as Android wrote it.

Pixel aspect ratio

Writes the pixel aspect ratio into the file, so that editing software shows anamorphic footage stretched to its true proportions: **Off** / **Same as viewfinder**. The ratio is taken from Desqueeze viewfinder in the viewfinder settings and is written only when that is more than 1. Stored separately for each camera. Default: **Off**.

Locked to **Off** when the video itself is desqueezed through the GPU: the frame is already stretched.

OETF and Color Primaries

What the file says about its transfer function and colour primaries, so that players and editors show the colours correctly:

- **Leave as is**: as written by the phone's encoder;
- **Auto-correction**: chosen from the selected colour curve and gamut (for example, linear for a linear curve, HLG for HLG, BT.709 for log curves);
- BT.709, PQ/BT.2020, HLG/BT.2020, BT.601 PAL, BT.601 NTSC, sRGB: fixed sets;
- Linear/Auto: linear transfer, primaries from the gamut.

Stored separately for each codec. Default: **Auto-correction**.

Color range

The colour range flag in the file: **Leave as is**, **Auto-correction** (the range the camera actually delivered), **Limited** or **Full**. A wrong flag makes the picture look washed out or too contrasty in other software. Stored separately for each codec. Default: **Limited**.

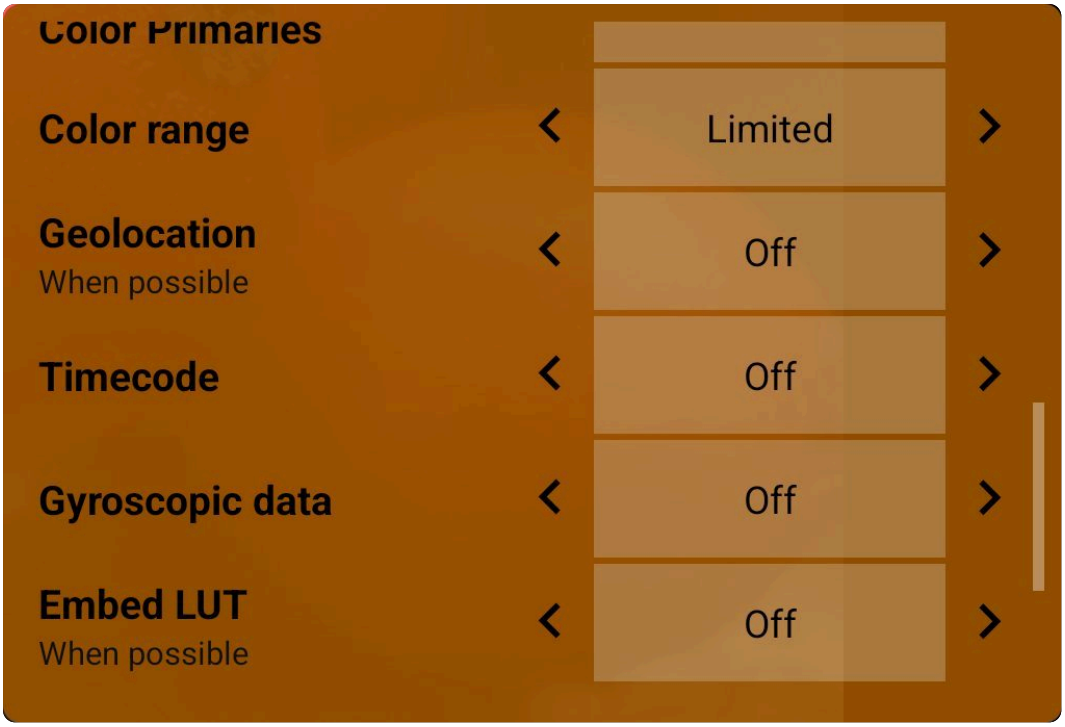
Geolocation

Writes the location into the file: **Off** / **On**. Turning it on asks for the location permission; without it the row stays **Off**. **When possible**: coordinates are written only if the phone already knows where it is. The same setting adds the location to snapshots and to RAW recordings. Default: **Off**.

Timecode

Adds a timecode track to the file: **Off**, **UTC** or **Local** (the phone's time zone). The timecode starts at the time of day of the first frame. In slow motion its frame rate matches the playback rate. In RAW recordings the same setting sets the timecode of DNG frames; with **Off** they count from 01:00:00:00. Default: **Off**.

On the `system` container the timecode is added after recording, and only to files larger than 1 MB.



Gyroscopic data

Records the phone's gyroscope for stabilisation in Gyroflow:

- **Off**;
- **GPMF**: a gyro track inside the clip, plus a `<clip>.lensprofile.json` file next to it. If the track can only hold a limited length at the current bitrate, the value shows the limit (for example, "max. 40 min");
- gcsv (**external file**): no track inside the clip; `<clip>.gcsv` and `<clip>.lensprofile.json` are saved next to it;
- **Protobuf**: a track inside the clip, with the lens profile included.

GPMF and gcsv open in the regular Gyroflow release, Protobuf only in Gyroflow nightly builds at the time of writing. If the phone has no gyroscope, nothing is recorded. If the lens changes during a recording, extra `<clip>-<frame>.gcsv` and `.lensprofile.json` files appear for each segment. Default: **Off**.

Embed LUT

Embeds the viewfinder LUT into the file, so that it can be extracted later and applied in editing:

- **Off**;
- **Viewfinder LUT x33 (or Rec.709)**: the LUT itself (33-point cube) plus the parameters to rebuild it;

- **Editable Meta-LUT only**: only the parameters, without the LUT.

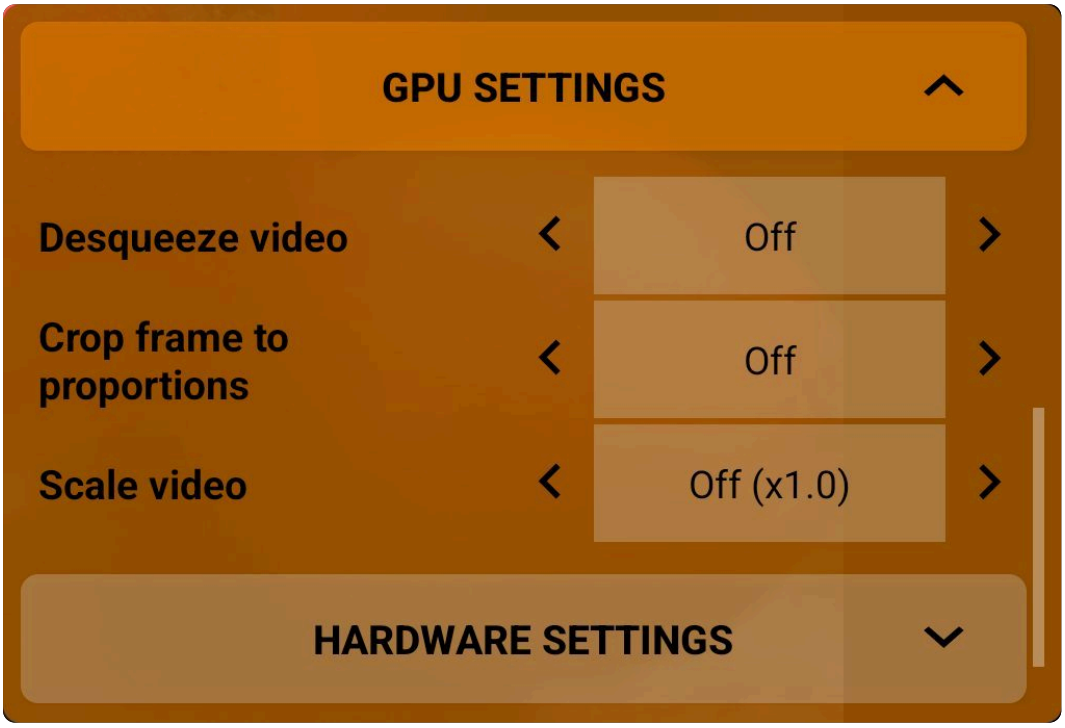
When possible: only when the selected colour curve allows building a LUT (log, linear, Rec.709, HLG, PQ). Never for RAW. Default: **Off**.

GPU settings

In the app: 7 → → GPU settings

GPU settings change the recorded frame itself: its proportions and resolution. They work only when recording goes through the GPU (**GPU** in Resolution and FPS); otherwise the rows are greyed out and show **Off**. Unavailable for RAW. All three are stored separately for each camera.

The frame is processed in this order: desqueeze, then crop, then scale.



Desqueeze video

Stretches anamorphic footage to its true proportions in the file: **Off**, or 1.25x, 1.33x, 1.43x, 1.55x, each **Horizontally** or **Vertically**.

- **Horizontally**: the width is multiplied, the height stays. 1920×1080 at 1.33x becomes 2552×1080.
- **Vertically**: the height is divided, the width stays. The file gets lower.

The pixels are stretched, so no pixel aspect ratio is written to the file. Zoom is reset. While desqueeze is on, Pixel aspect ratio is unavailable, and if no crop is set, the viewfinder frame lines show the resulting proportions (1.25x → 2.20:1, 1.33x → 2.35:1, 1.43x → 2.55:1, 1.55x → 2.76:1). Default: **Off**.

Crop frame to proportions

Crops the frame in the centre to the selected aspect ratio: **Off** or from 1.00:1 to 2.76:1 (4:3, 16:9, 1.85:1, 2.39:1 and others). The result is the actual resolution of the file. The viewfinder and HDMI frame lines show the same proportions. Default: **Off**.

Scale video

Scales the frame after desqueeze and crop: each side from 0.5 to 2.0 times. The value shows how the number of pixels changes: x0.25 at half size, x4.00 at double. **Off** (x1.0) keeps the size. The result is the actual resolution of the file. Default: **Off**.

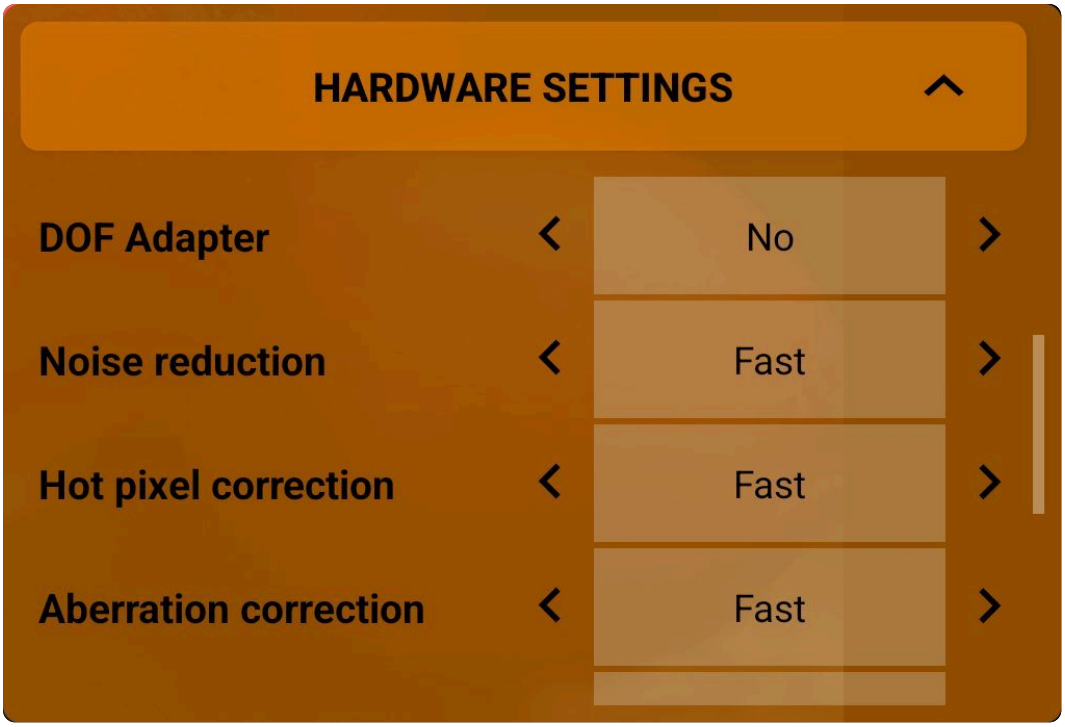
> Large frames (for example, 4K scaled up, or a wide horizontal desqueeze) may exceed what the phone's encoder can record.

Hardware settings

In the app: 7 → → Hardware settings

Hardware settings control the processing done by the phone's camera itself, before the image reaches the app. The list of values comes from the camera: a row appears only when the camera offers a choice, so the set of rows differs between phones and between cameras of one phone. All values are stored separately for each camera.

For RAW the section has its own set of rows (below).



DOF Adapter

No / **Yes**. For DOF adapters that turn the image upside down: rotates the viewfinder and the HDMI output by 180° and writes the matching orientation into videos, snapshots and RAW files. Default: **No**.

Distortion correction

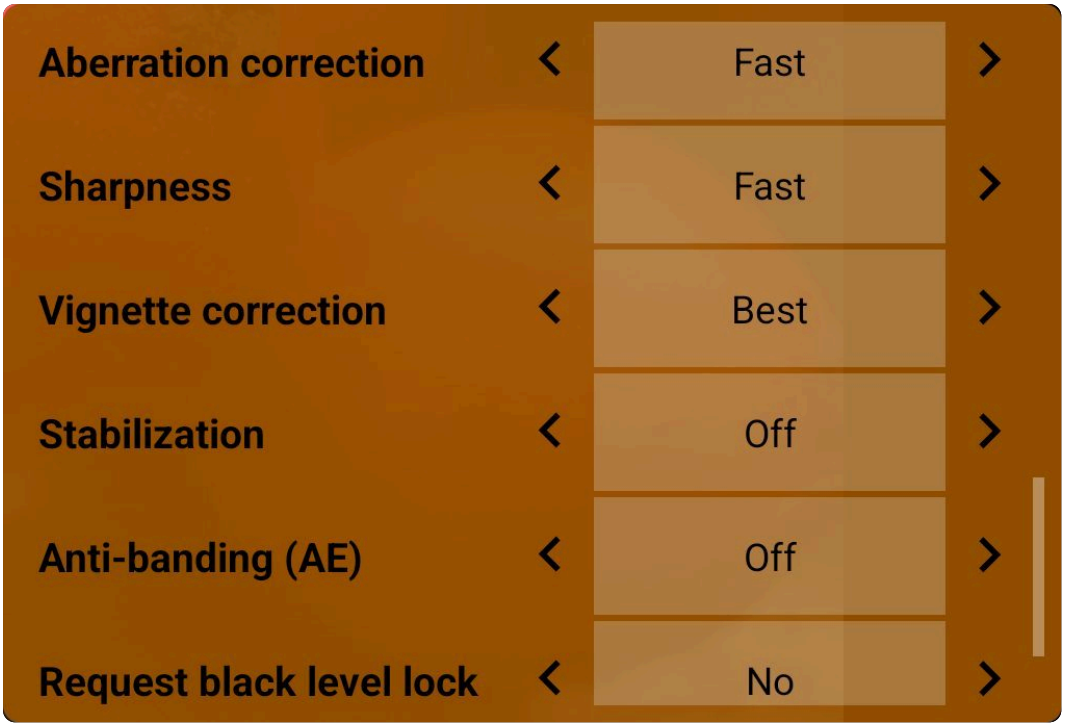
Lens distortion correction by the camera: **Off**, **Fast**, **Best**. The result is part of the recorded image.

Noise reduction

Noise reduction by the camera: **Off**, **Fast**, **Best**, **Minimal**, as the camera offers. Stronger noise reduction cleans the image but smears fine detail. On some phones the app also switches the manufacturer's multi-frame noise reduction. Changing it may restart the camera session.

Hot pixel correction

Correction of hot pixels: **Off**, **Fast**, **Best**.



Aberration correction

Correction of chromatic aberration (colour fringes): **Off**, **Fast**, **Best**.

Sharpness

Sharpening by the camera: **Off**, **Fast**, **Best**. With **Off** the image is softer but easier to grade and sharpen later. Changing it restarts the preview.

Vignette correction

Correction of vignetting (darker corners): **Off**, **Fast**, **Best**.

Stabilization

Image stabilisation: **Off**, **Optical**, **Digital** or **Opt.+Dig.** (optical and digital together), only the combinations the phone supports. Digital stabilisation crops the frame; switching it on or off resets zoom. On some phones optical stabilisation cannot be turned off.

Anti-banding (AE)

Suppresses flicker from mains-powered lights: **Off**, **50Hz**, **60Hz**, **Auto**. Choose the frequency of the local power grid (50 Hz in Europe, 60 Hz in North America). At 60 fps and higher frame rates the app uses 60 Hz if the camera supports it.

HDR

Only on some phones: Sony Xperia (HDR, MFHDR), LG (HDR, HDR10), Xiaomi Mi 10 and Mi 11 with 10-bit (HDR10), OnePlus 8. The manufacturer's HDR mode for video. Greyed out when HDR is not possible with the current settings.

Request black level lock

No / **Yes**. Asks the camera to keep the black level fixed, so that the shadows do not shift during a shot. Whether the camera honours it depends on the phone. Default: **No**.

RAW

With RAW the section shows **DOF Adapter**, **Stabilization** (optical only) and **Anti-banding (AE)**, plus three rows of its own. Sharpening, hot pixel and aberration correction and HDR are always off for RAW.

Distortion correction (RAW)

Metadata, when possible: **Include** writes the lens distortion data into the DNG files so that RAW software can correct it; **Exclude** leaves it out. The RAW pixels are not changed either way. Default: **Include**.

Vignette correction (RAW)

Off, or fast or best correction, either written into the DNG as metadata (**Fast Metadata**, **High quality Metadata**) or applied to the pixels (**Fast Baked in**, **High quality Baked in**).

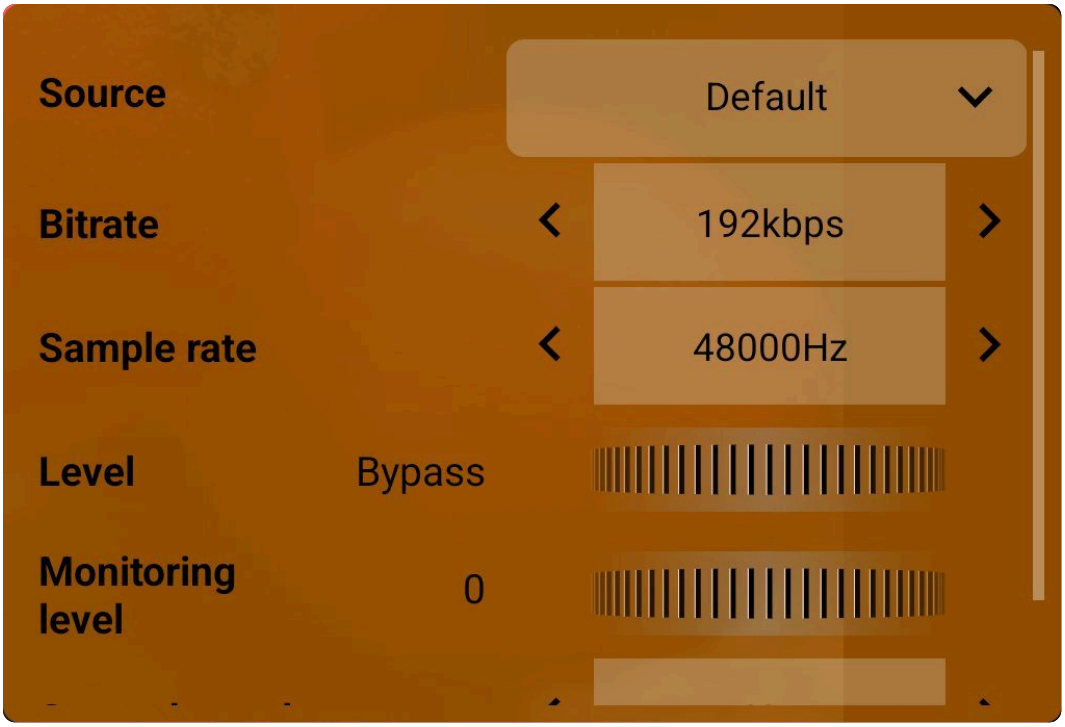
Noise profile

Metadata, when possible: **Include** writes the sensor's noise profile into the DNG files for noise reduction in RAW software; **Exclude** leaves it out. Default: **Include**.

Audio menu

In the app: 7 → 🎙

The microphone button opens the sound settings. They are shared by all cameras. The menu does not open during recording, but headphone monitoring keeps working.



Source

Tap the value to choose from the list:

- **Off**: video without sound;
- **Default**: the phone's default microphone setup;
- **Unprocessed**: the raw microphone signal without the phone's processing, where the phone supports it;
- **Camcorder**: the microphone tuned for video recording;
- **Mic**: the main microphone;
- **Voice**: tuned for speech;
- **Bluetooth**: a Bluetooth headset microphone.

Which microphone a USB or wired mic replaces is decided by Android. The first time you choose a source, the app asks for the microphone permission. If an external camera is connected to the phone, sound is turned off. Default: **Default**.

With **Off**, the other rows are greyed out.

Bitrate

This row picks the audio format:

- AAC from 64 to 1024 kbps (only the rates the phone's encoder supports): compressed sound in the video file;

- **PCM 16bit**, **PCM 32bit Float**: uncompressed sound in the video file. Works with the MOV and MP4 containers; with **System** the recording does not start and the app shows **PCM audio is not supported in the System container**;
- **WAV 16bit (separate file)**, **WAV 32bit Float (separate file)**: sound only as a separate WAV file next to the video, without an audio track in the video.

For RAW, uncompressed sound is always saved as WAV; with .mcpro only PCM and WAV are available. Default: 192 kbps AAC, or the highest rate the phone supports below it.

Sample rate

The sample rate. For AAC, the rates the phone's encoder supports, up to 48 kHz. For PCM and WAV, higher rates up to 192 kHz are added; whether the phone's microphone can deliver them depends on the phone. Default: the highest rate supported for AAC.

Level

Digital gain applied to the recorded sound, from −100 to +100. **Bypass** (the middle) leaves the sound untouched; double-tap the wheel to return to it. Negative values make the sound quieter, positive values amplify it, up to about 20 times. Too much gain clips the sound. Default: **Bypass**.

Monitoring level

Headphone volume for listening to the sound while you shoot. The sound goes only to wired, USB or Bluetooth headsets, never to the phone's speaker. This row changes the phone's media volume. Works during recording. Double-tap the wheel to mute. Default: 0 (off).

Swap channels

No / **Yes**: swaps the left and right channels in the recording and in the headphones. Useful when the phone is held upside down. Default: **No**.

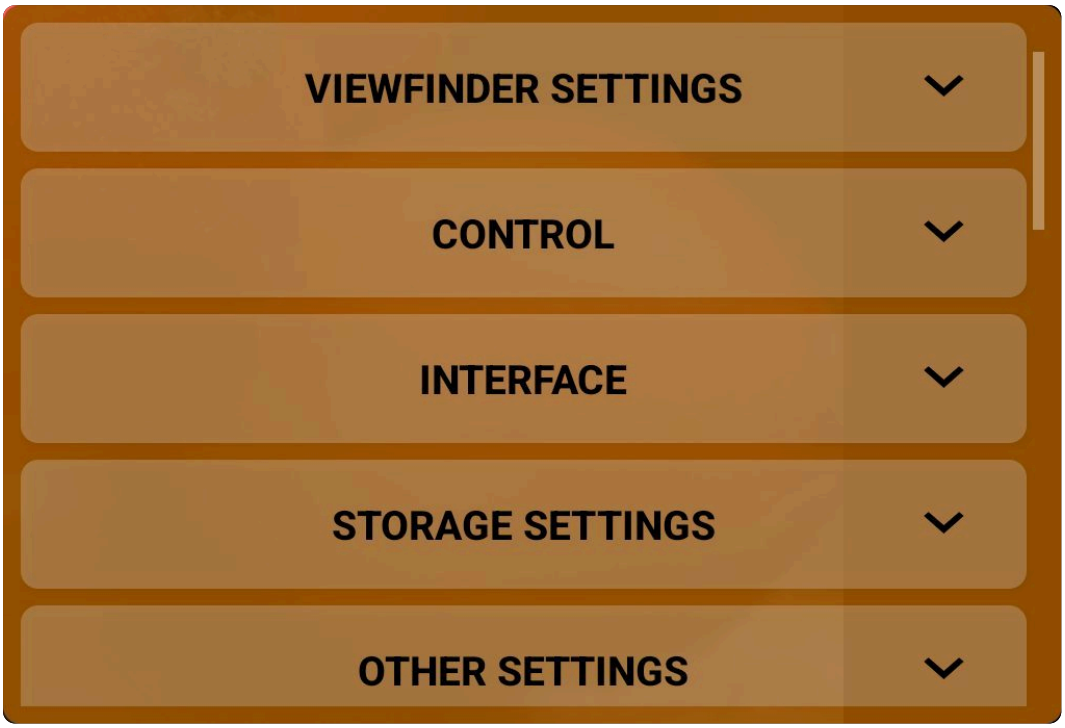
Settings menu

In the app: 7 → ⚙

The gear button opens the app settings. They are grouped into five sections; tap a section header to expand it:

- Viewfinder settings: what you see on the screen and on an HDMI monitor;
- Control: how the recording stops, sounds, auto-locks, hardware buttons;
- Interface: theme, brightness, which screen elements are shown, the information panel;
- Storage settings: where files are saved and how they are split;
- Other settings: auto-close, overheating, Do Not Disturb, orientation, screen brightness, language.

The menu does not open during recording.



Below the sections:

Global settings

Three buttons:

- The first button resets everything: after the **Clear all settings** confirmation, deletes all settings and presets and restarts the app. The language, theme, interface brightness and opacity and the navigation bar setting are kept. You will be asked to accept the privacy policy again.
- The second saves all settings and presets to a `.json` file in a place you choose. Use it as a backup or to move settings to another phone. On success the app shows **Settings backup saved**.

- The third loads settings from such a file, replacing all current settings, and restarts the app. If the file was saved on another phone model, the app warns with **Phone model does not match**: settings for another phone may not fit this one.

RAW Bundle

Shown when RAW Bundle can be bought for this phone and has not been bought yet. The button opens the purchase.

Support the project

One-time donations of 1, 2, 3 or 5 euros, shown in your currency. They support development and do not unlock anything.

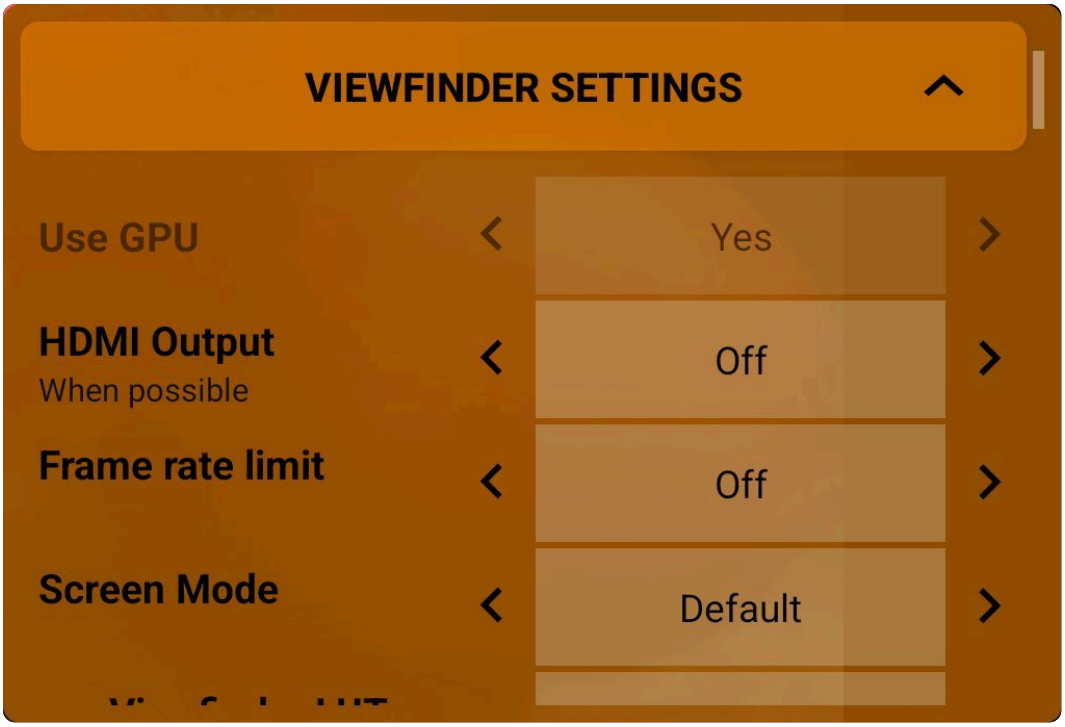
The last block of the menu shows the phone model, chip, Android and firmware version, and the open-source libraries the app uses with their licences. Quote the device line when you write to support.

Viewfinder settings

In the app: 7 → ⚙ → Viewfinder settings

Viewfinder settings control what you see on the phone screen and on an external HDMI monitor: the image path, monitoring LUT, histogram, exposure and focus aids, frame lines and grids. None of them change the recorded file; they only affect what you see.

Most tools here are drawn by the GPU. If the viewfinder does not go through the GPU, they are greyed out.



Use GPU

How the viewfinder image is drawn.

- **Yes**: the image goes through the GPU, with and without recording. All tools on this page are available.
- **No**: the image comes straight from the camera. The LUT, histogram, focus peaking, expo-peaking, EV and Kelvin indicators and **Screen Mode** are unavailable; **Frame rate limit** is hidden.
- **Turn off when recording**: GPU tools work while you frame the shot and are switched off for the recording. The camera session restarts briefly when recording starts and stops.

Default: **Yes** on Android 11 and later, **No** on older versions.

> If recording through the GPU is selected in the video menu, this row is locked to **Yes** and greyed out.

HDMI Output

Shows the viewfinder on an external display connected over HDMI or USB-C: **Off** / **On**. Frame lines and the grid are shown on the monitor too. Default: **Off**.

The monitor gets the viewfinder picture with your monitoring tools on it. For a clean picture for an external recorder, use **HDMI Output** in the video menu instead; while that one is on, this row does nothing.

Frame rate limit

Caps how often the viewfinder is redrawn: **Off**, 12, 24, 25, 30, 48, 50 or 60 fps. A lower limit takes load off the phone during heavy modes; the recording keeps its full frame rate. Default: **Off**.

The viewfinder drops whole camera frames to stay under the limit, so the actual rate can be lower: with the camera at 30 fps, a 25 fps limit gives 15 fps. Shown only when the viewfinder goes through the GPU.

Screen Mode

How the viewfinder is shown on the screen:

- **Default**: the usual screen mode;
- **HDR10**: HDR10 output, if the phone screen or the HDMI monitor supports it;
- **HLG**: HLG output, if supported. Before Android 14 it is emulated through PQ and shown as ~**HLG (PQ conversion)**;
- **Linear sRGB**: linear sRGB.

On an HDR screen, the sun glare and the clouds in the picture below glow brighter than the rest of the page: this is how the viewfinder looks in an HDR mode. On an ordinary screen the same picture looks as in **Default**.



Modes the screen does not support are skipped. While an HDR mode is on, a small HDR10 / HLG / Linear badge is shown on the screen. The setting is stored separately for each camera. Default: **Default**.

Unavailable without the GPU and when recording RAW. The row is hidden if the phone does not support screen colour modes.

Viewfinder LUT

A monitoring LUT: shows a log, flat or linear picture in a display standard so that you can judge the image while recording log. Values: **Off**, **Rec.709**, **Gamma 2.2**, **Gamma 2.4**, **sRGB**, **PQ**, **HLG**. Stored separately for each camera. Default: **Off**.

The LUT is applied only when a log, flat or linear profile (or HLG/PQ) is selected and the viewfinder goes through the GPU. The note "**When possible**" under the row name refers to this. When the LUT is active, a LUT button appears on the screen:

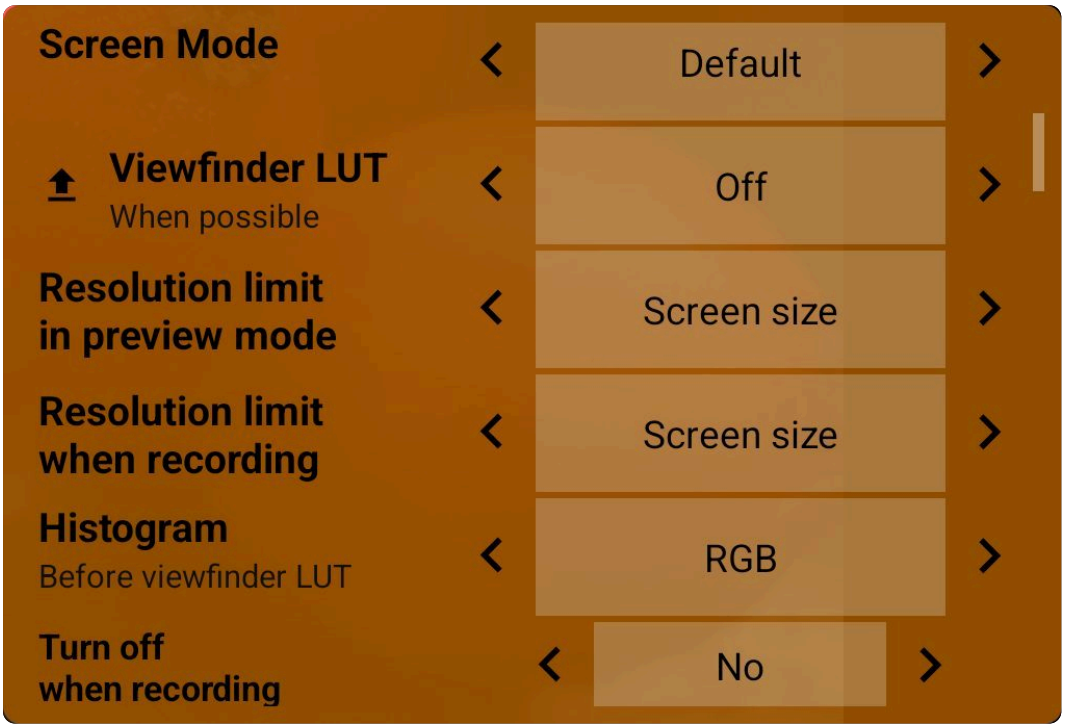
- tap it to switch the LUT off and on; when half-frame LUT mode is on, taps also go through the half-frame views: the LUT on the left or the right half only, to compare with the original;
- long-press it to open the menu for exporting LUTs.

Half-frame LUT mode is switched by long-pressing the LUT label among the indicators.

The download button next to the row saves the LUT as a `.cube` file for your editing software: choose the input and output profiles, the cube size (17, 33 or 64) and where to save it.

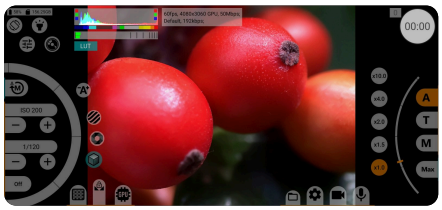
> **mcpro24fps Demo**
>
> In the demo version the LUT cannot be saved as a file: the save buttons show a lock.

Unavailable without the GPU, when recording RAW, and when **Screen Mode** is HLG on Android 13 and earlier.

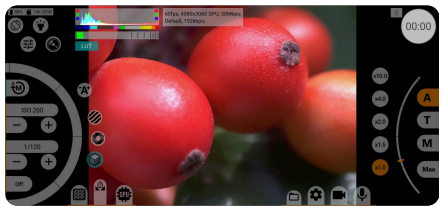




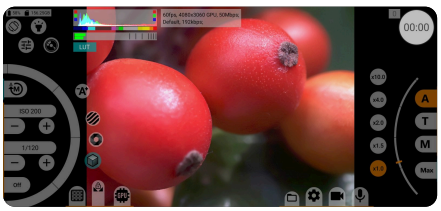
Off



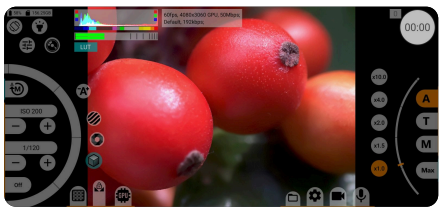
Rec.709



Gamma 2.2



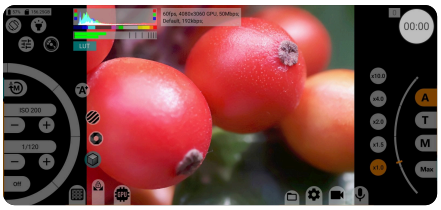
Gamma 2.4



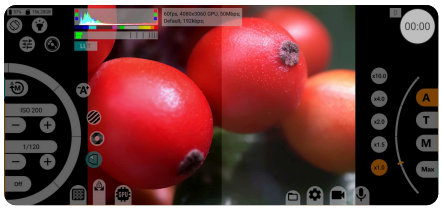
sRGB



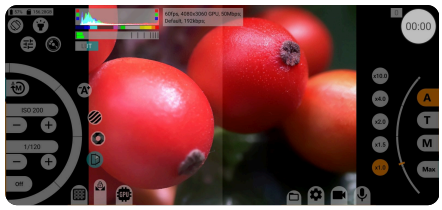
PQ



HLG



LUT on the left half



LUT on the right half

Resolution limit in preview mode

The maximum resolution of the viewfinder image while you are not recording. Values: **Off**, **Screen size**, 180p, 360p, 540p, 720p, 1080p, 1440p, 2160p, **Video size**, **Maximum**.

A lower resolution means less load on the phone; the recording is not affected. With the GPU, **Off** turns the viewfinder image off completely. Default: 1080p, or **Screen size** if the screen is smaller.

Resolution limit when recording

The same limit, applied during recording. Worth lowering in heavy modes (high frame rates, high bitrates), where the viewfinder competes with the recording for the phone's resources.

Histogram

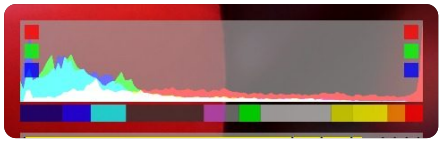
The histogram of the image, measured before the viewfinder LUT (**Before viewfinder LUT**).

- **Luminance**: brightness only;
- **RGB**: red, green and blue separately;
- **Luminance Max**: every brightness level present in the frame is drawn at full height: shows which levels exist at all, regardless of how many pixels they have;
- **Waveform**: brightness across the frame, left to right as in the picture, with lines at 10, 50 and 90 %; the panel is twice as tall;
- **RGB Parade**: the same for red, green and blue side by side;
- **Off**.

Tap the histogram on the screen to cycle through the types without **Off**. The expo-peaking limits are marked on the histogram views, not on the waveform and parade. More in Indicators & information area. Default: **RGB** on Android 11 and later.



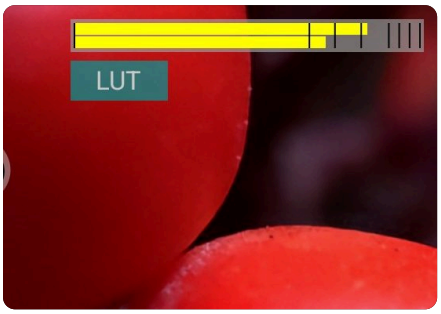
Luminance



RGB



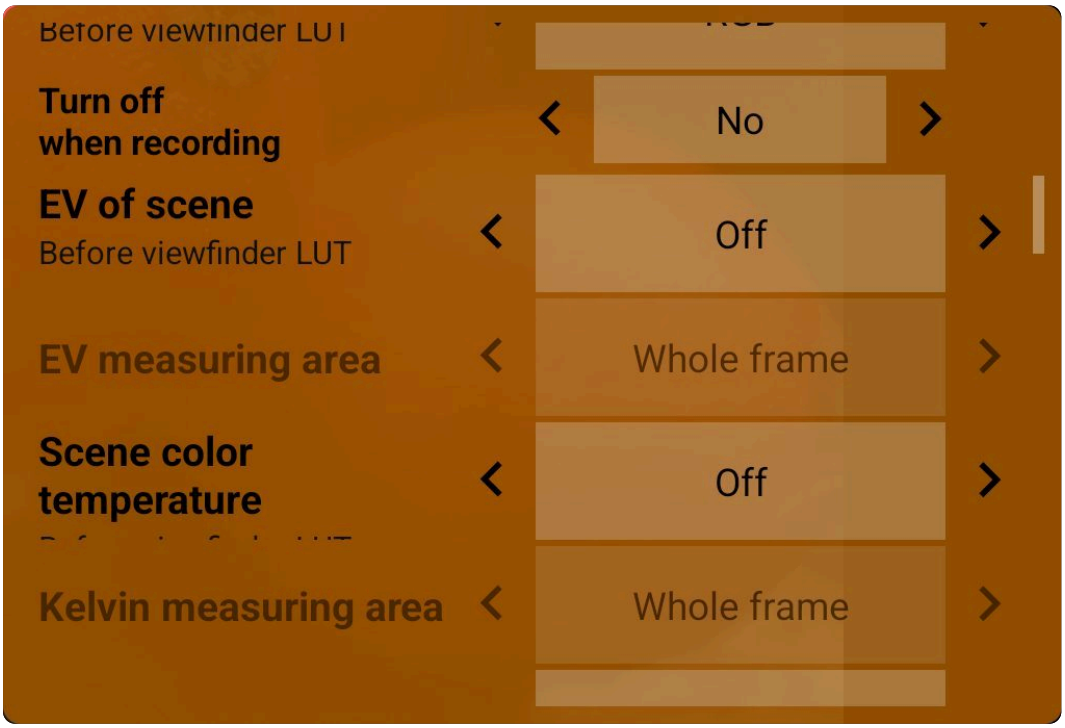
Luminance Max



Off

Turn off when recording

The row under the histogram: **Yes** hides the histogram for the time of recording, **No** keeps it on screen. Default: **No**.



EV of scene

An indicator of how bright the scene is relative to middle grey, in EV stops (from −4 to about +2.5 EV), measured before the viewfinder LUT. **Off** / **On** / **Turn off when recording**. Default: **Off**.

EV measuring area

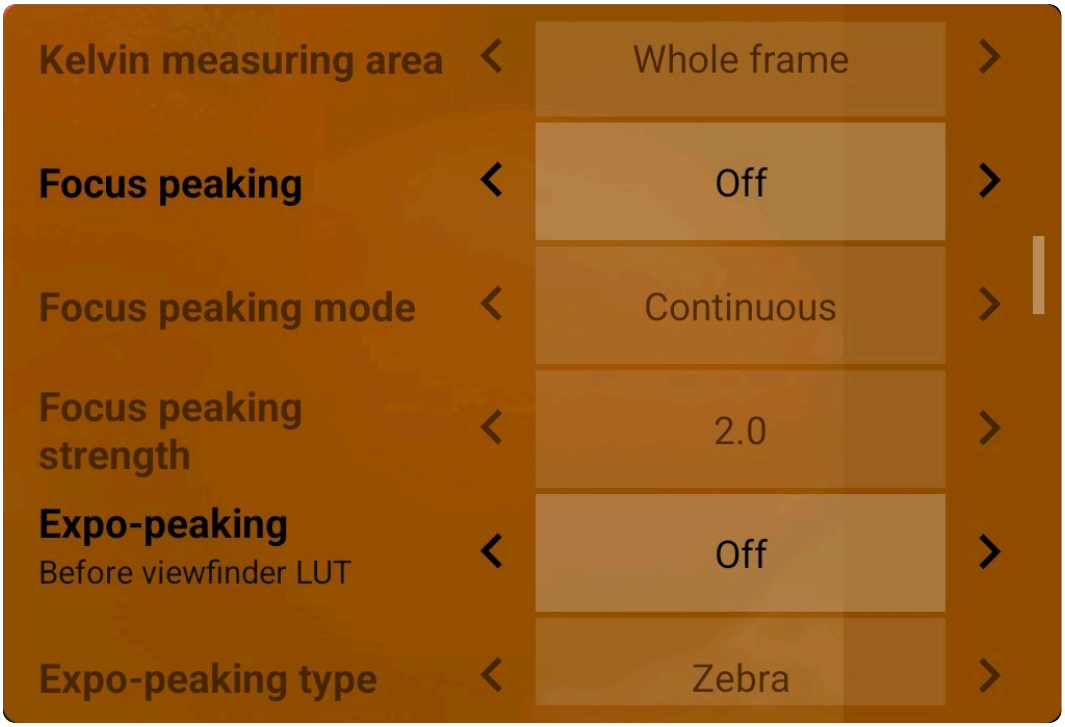
Which part of the frame the EV indicator measures: **Whole frame**, the central **2/3** or the central **1/3**.

Scene color temperature

An estimate of the scene's colour temperature in kelvins, from the average colour of the measured area, before the viewfinder LUT. **Off** / **On** / **Turn off when recording**. Default: **Off**.

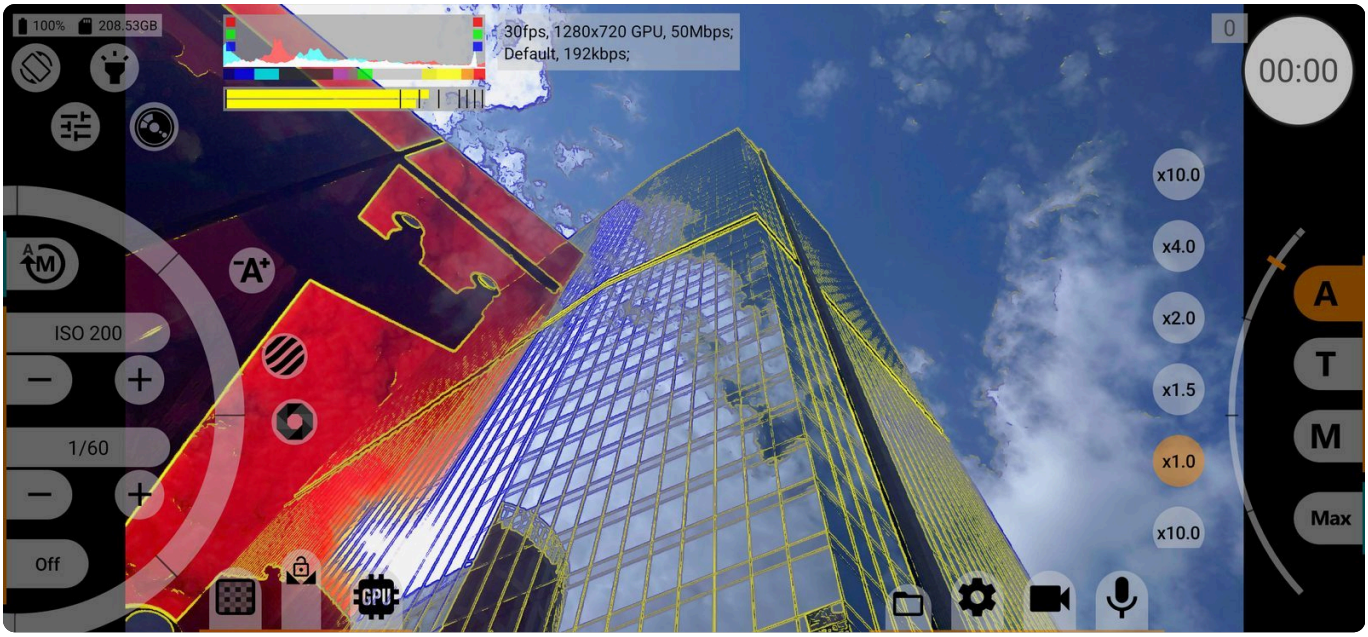
Kelvin measuring area

Which part of the frame the colour temperature is measured in: **Whole frame**, **2/3** or **1/3**, as for EV.



Focus peaking

Highlights sharp edges in the viewfinder, to help with manual focus. **Off** / **On** / **Turn off when recording**. Default: **Off**. The highlight is shown only in the viewfinder, never in the recording.



Focus peaking mode

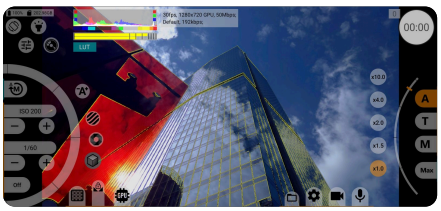
When peaking is shown:

- **By touching focus wheel**: only while your finger is on the focus wheel (or a hardware focus key is pressed);
- **Continuous**: all the time.

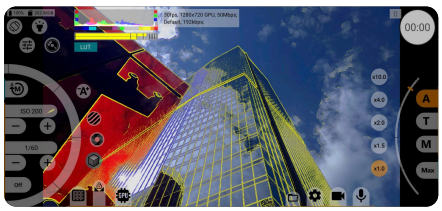
Default: **By touching focus wheel**.

Focus peaking strength

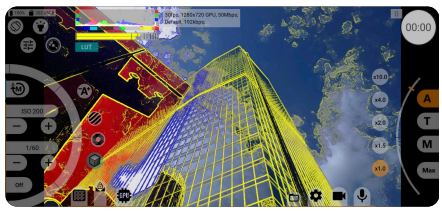
How strongly edges are highlighted: from 0.75 to 10. Higher values highlight more of the image. Default: 2.0.



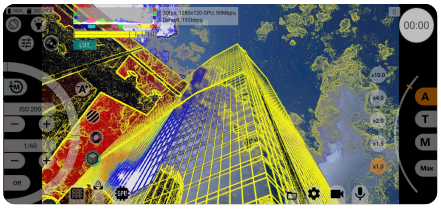
0.75



2.0



5.0

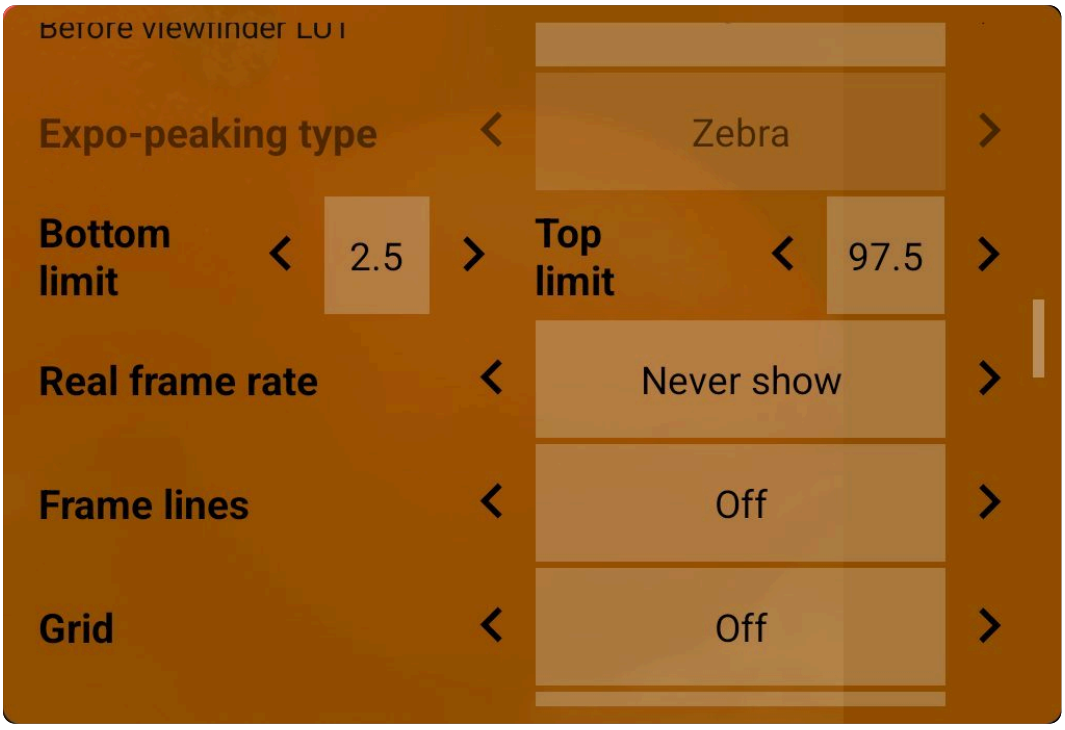


10

Expo-peaking

Expo-peaking marks over- and underexposed areas (as zebra or false colour) while your finger is on the ISO wheel, and hides them when you let go: **Off** / **By touching ISO wheel**. Default: **Off**.

To keep the zebra or false colour on the screen permanently, use the zebra and false colour buttons in the exposure controls. They work regardless of this row.



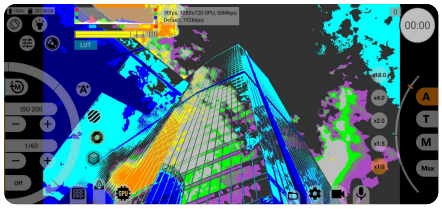
Expo-peaking type

- **Zebra**: diagonal stripes: dark red above the top limit, light blue below the bottom limit;
- **False Color**: brightness between the limits is painted with a scale of colours: from dark blue in the shadows through grey and green around the middle to yellow, orange and red near the top limit.

Default: **Zebra**.



Zebra



False Color

Bottom limit

The lower limit, in percent of the signal level: areas darker than this are marked as underexposed. From −7 to 49.5 in steps of 0.5. Default: 2.5.

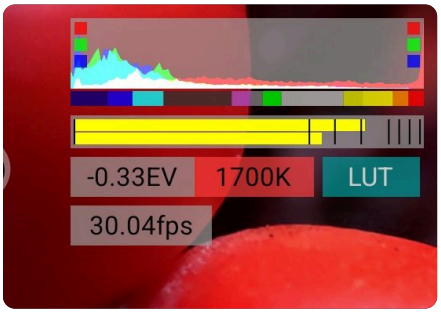
Top limit

The upper limit: areas brighter than this are marked as overexposed. From 50 to 109 in steps of 0.5. Default: 97.5.

Both limits apply to the zebra and to false colour, and are marked on the histogram.

Real frame rate

Shows the frame rate the camera actually delivers, measured from the camera's own frame timestamps: **Show** / **Never show**. Use it to check that the phone keeps up with the selected frame rate. Works without the GPU too.



Show

Frame lines

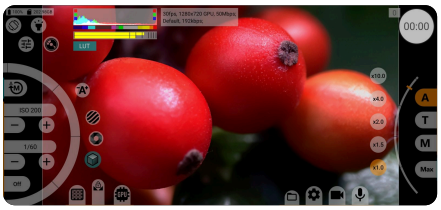
Frame lines over the viewfinder (and on the HDMI monitor):

- **Off**;
- **Viewfinder size**: the proportions of the video frame;

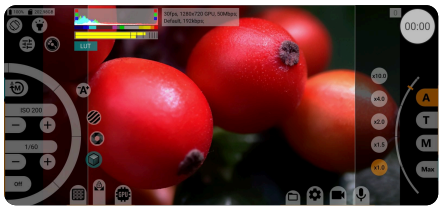
- fixed aspect ratios from 1.00:1 to 2.76:1, including 4:3, 16:9, 1.85:1, 2.39:1.

Stored separately for each camera. Desqueeze of the viewfinder is taken into account.

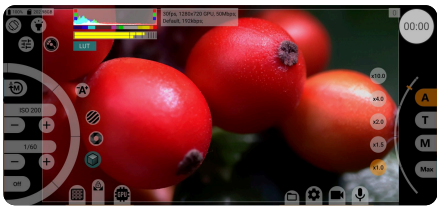
> If recording through the GPU crops the frame or desqueezes it (video menu), this row is locked and shows the resulting proportions.



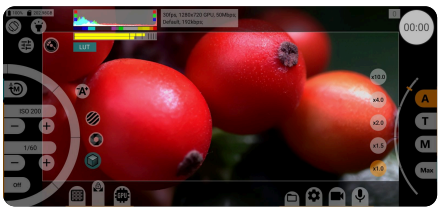
Viewfinder size



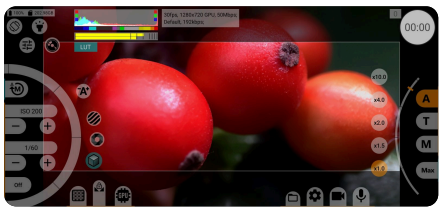
1.33:1 (4:3)



1.85:1



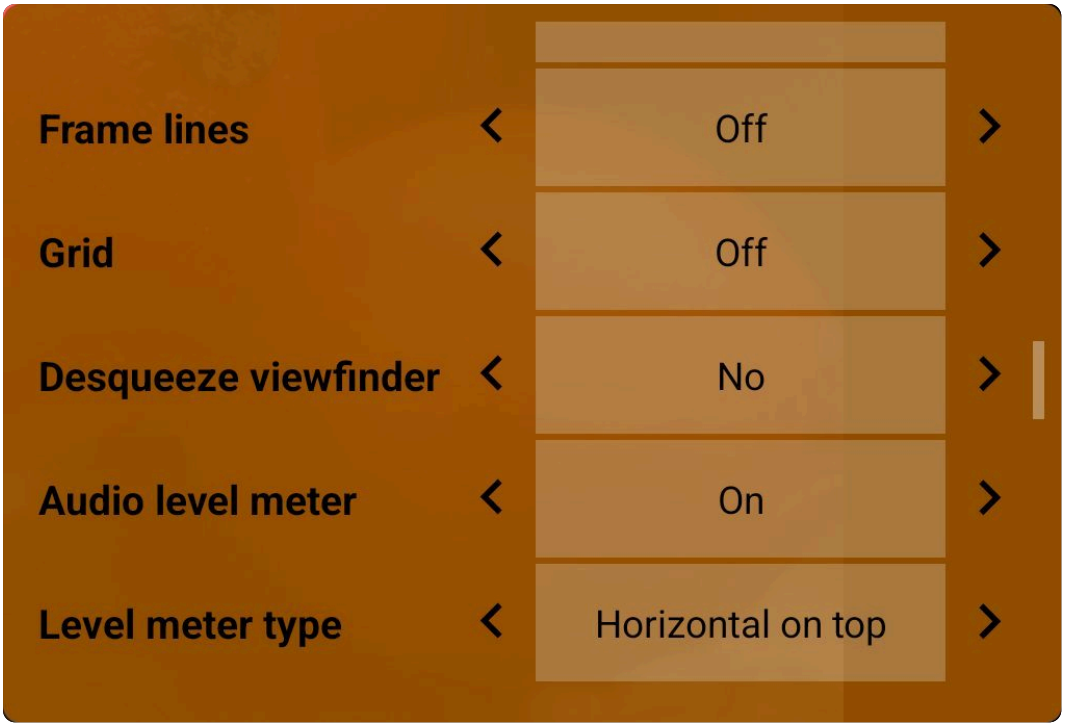
2.39:1



2.76:1

Grid

Composition guides over the viewfinder and on the HDMI monitor: 3×3, Fibonacci 3×3, 4×2, 4×4, 2×2, four golden spirals and two golden triangles, or **Off**. Stored separately for each camera.





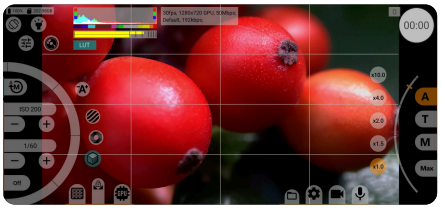
3x3



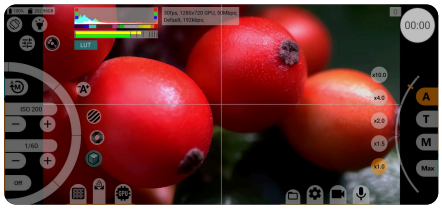
Fibonacci 3x3



4x2



4x4



2x2



Golden spiral #1



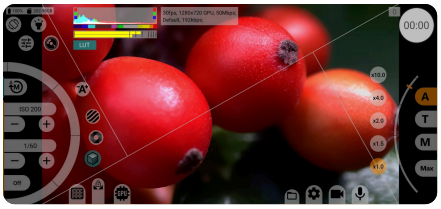
Golden spiral #2



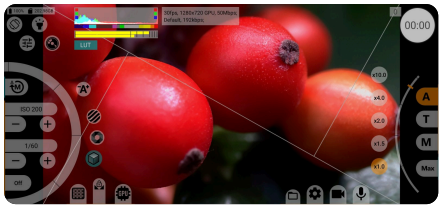
Golden spiral #3



Golden spiral #4



Golden triangle #1

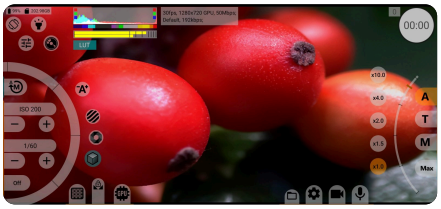


Golden triangle #2

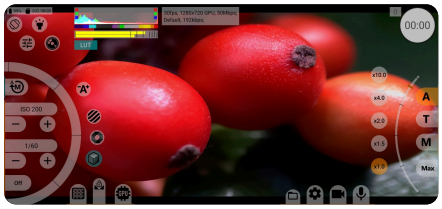
Desqueeze viewfinder

Stretches the viewfinder image horizontally for anamorphic lenses, so that you see the picture in its true proportions: **No**, 1.25x, 1.33x, 1.43x, 1.55x. The recording is not changed. Stored separately for each camera.

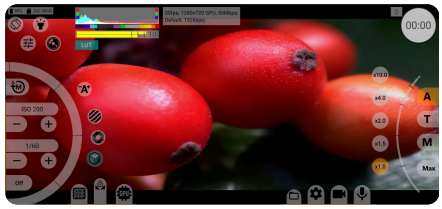
Locked when the video itself is desqueezed through the GPU (video menu).



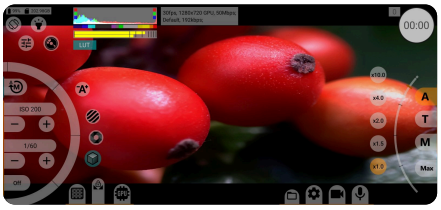
1.25x



1.33x



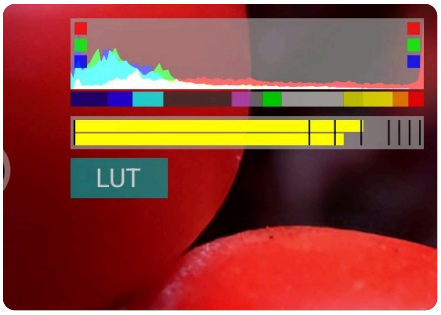
1.43x



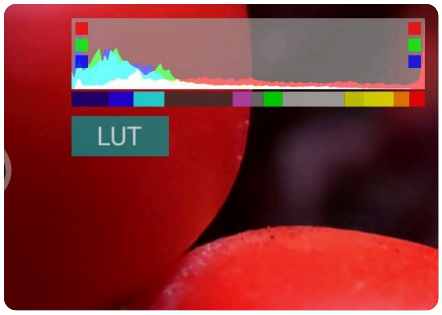
1.55x

Audio level meter

The audio level meter on the shooting screen: **Off** / **On** / **Turn off when recording**. Requires an audio source to be selected. Default: **On**. The sound in the recording is not affected.



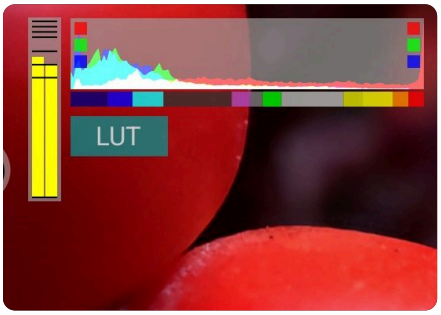
On



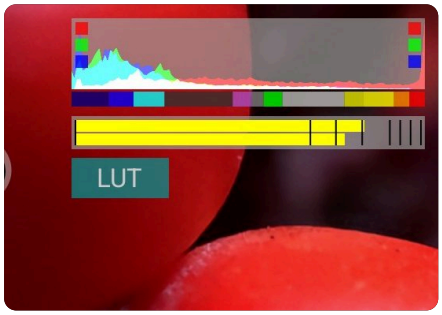
Off

Level meter type

Vertical at the side of the screen or **Horizontal on top**. Default: **Horizontal on top**.



Vertical

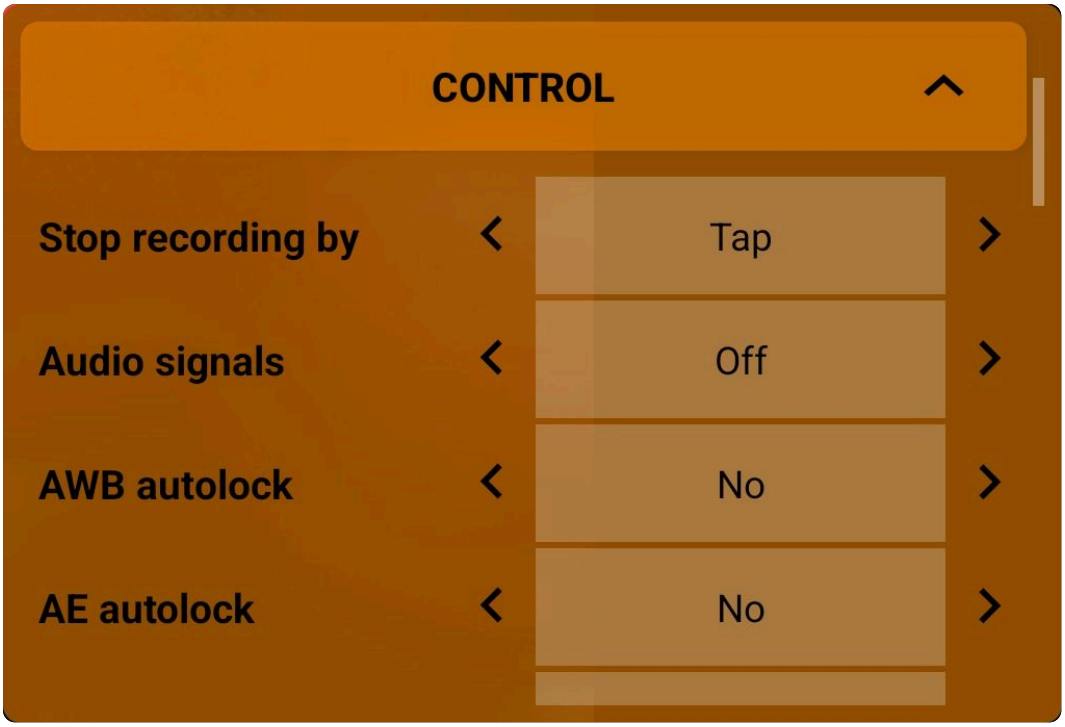


Horizontal on top

Control

In the app: 7 → ⚙ → Control

Control: how recording is stopped, the app's sounds, automatic locks at the start of recording, zoom limits and the phone's hardware buttons.



Stop recording by

Which gesture on the on-screen record button stops a recording: **Tap**, **Double tap** or **Long press**. Recording always starts with a single tap. A double tap or long press protects against stopping by accident. Hardware buttons and remotes are not affected. Default: **Tap**.

Audio signals

On / **Off**: sounds when recording starts and stops and when a snapshot is taken. They are not recorded into the video. Default: **On**.

AWB autolock

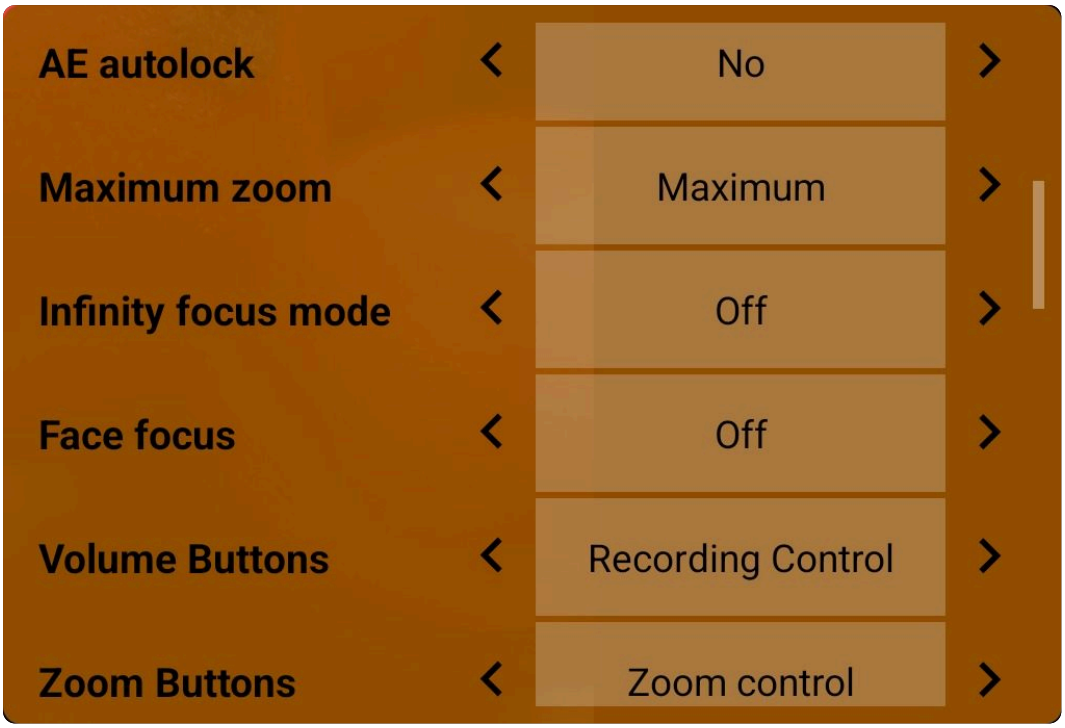
Locks the automatic white balance when recording starts, so the colour does not drift during the shot:

- **No**;
- **Recording only**: the lock is released when recording stops;
- **Keep after recording**: the lock stays after recording.

Works only with automatic white balance. Default: **No**.

AE autolock

The same for automatic exposure: **No**, **Recording only** or **Keep after recording**. Locks exposure at the start of recording, so brightness does not jump during the shot. Works only with automatic exposure. Default: **No**.



Maximum zoom

How far digital zoom can go:

- **Up to video size**: until the cropped area of the sensor equals the video size, without upscaling;
- **x1.5 from video size**, **x2.0 from video size**: allows up to 1.5 or 2 times upscaling;
- **Maximum**: up to the camera's limit.

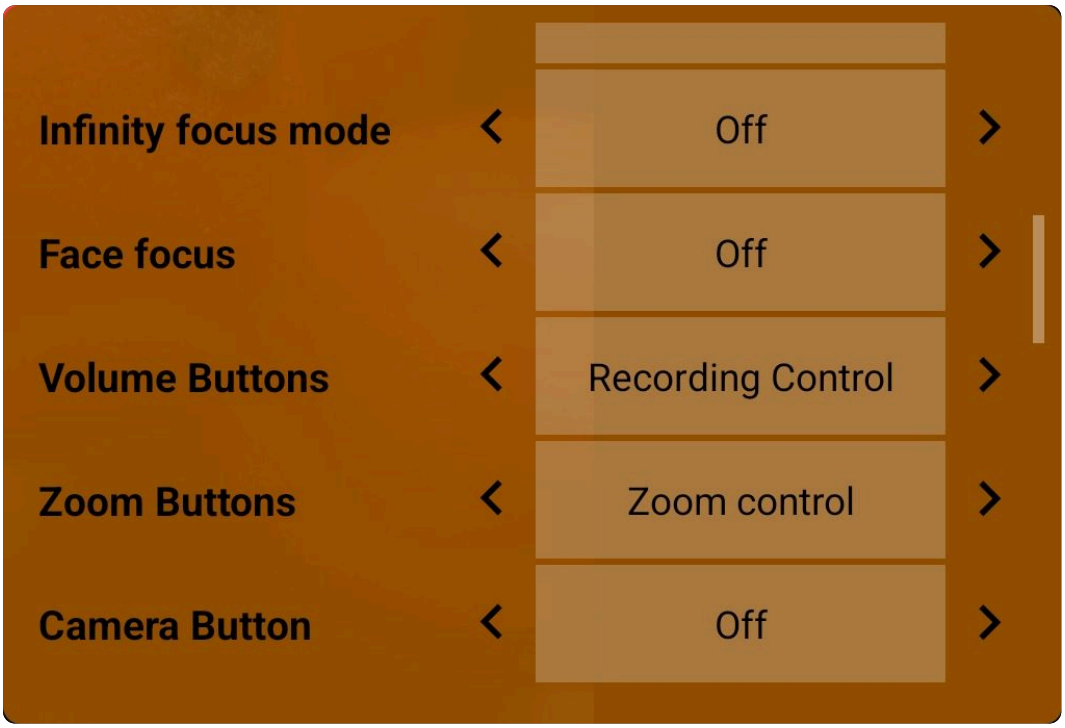
Long-press the zoom mode button next to the focus wheel to switch this too. Stored separately for each camera. Default: **Maximum**.

Infinity focus mode

Off / **On**. Many phones focus past infinity at the far end of the focus wheel. With **On** the far end of the wheel is your own saved infinity point instead; the M button shows ∞. Set the point in the focus pull settings (the gear between the focus limits). Stored separately for each camera. Default: **Off**.

Face focus

Off / **On**. In continuous autofocus the camera looks for faces and keeps the focus zone on the largest one. Faces are outlined in the viewfinder: the chosen one in yellow, the others in white. When the face is gone for about a second, the usual focus zone comes back. Only focus follows the face, exposure does not. Not used in tap and manual focus and above 30 fps. On Sony phones with eye autofocus the camera itself picks the face and the eye. One setting for all cameras; the row is shown only if the camera can detect faces. Default: **Off**.



Volume Buttons

What the phone's volume buttons do on the shooting screen:

- **Off**;
- **Recording Control**: either button starts and stops recording;
- **Focus control**: in manual focus, focus moves towards the far (volume up) or near (volume down) limit while the button is held;
- **Zoom control**: the same for zoom;
- **Start/stop program. focus+zoom**: starts or stops the programmed focus and zoom move;
- **EV Correction/Shutter Speed**: exposure compensation in automatic exposure, shutter speed in manual (volume up is brighter).

While a menu is open, the buttons work as usual. Default: **Recording Control**.

Zoom Buttons

The same choice for the zoom rocker on phones that have one. Default: **Zoom control**.

Camera Button

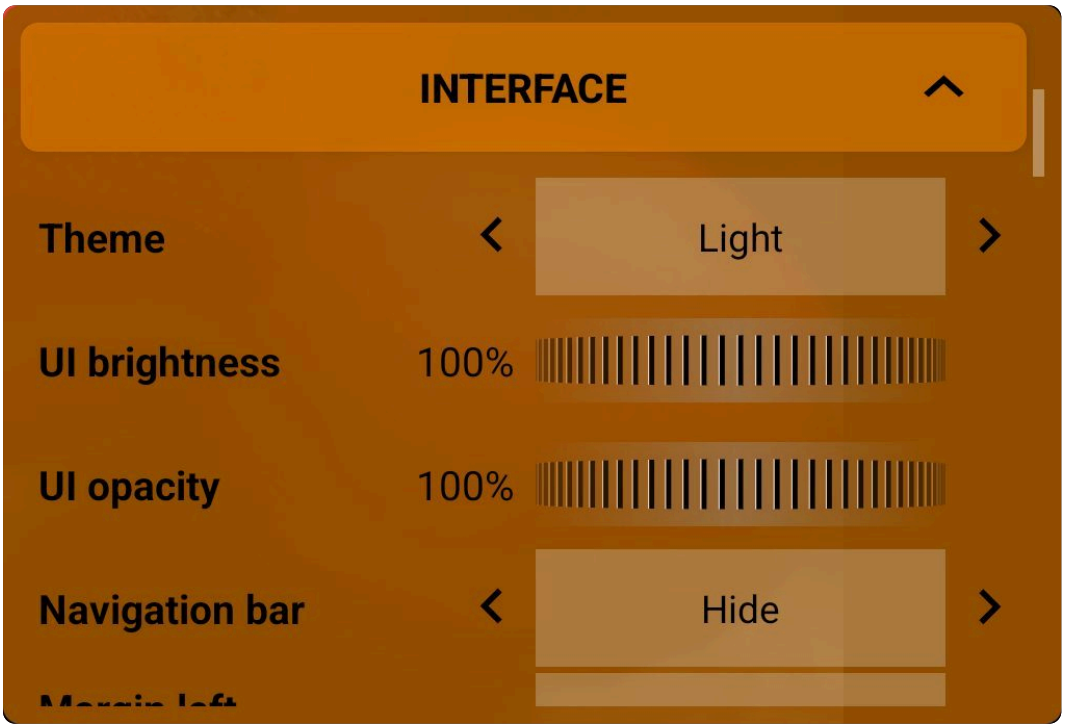
The same choice, without exposure control, for the hardware camera button and for media buttons (play, pause, record), for example on a wired or Bluetooth remote. For focus and zoom the button works as a toggle: the first press starts the move towards the far limit, the second stops it. Default: **Off**.

A half-press of the camera button always starts autofocus in auto and touch focus modes.

Interface

In the app: 7 → ⚙ → Interface

Interface: how the shooting screen looks and which of its elements are shown. None of these settings affect the recording.



Theme

System default, **Light** or **Dark**: the colour of buttons and menus. Changing it restarts the camera and the screen. Available on Android 10 and later. Default: **Light**.

UI brightness

Dims the buttons and menus, from 10 to 100 %, so that they do not distract in the dark. The viewfinder is not affected. Double-tap the wheel to return to 100 %. Default: 100 %.

UI opacity

How solid the buttons and menus are, from 10 to 150 %. Lower values let more of the viewfinder show through, values above 100 % make the backgrounds denser. Double-tap the wheel to return to 100 %. Default: 100 %.

> mcpro24fps Demo
>
> In the demo version the dark theme and brightness or opacity other than 100 % are marked with a lock: with them, recording and snapshots open the window offering the full version.

Navigation bar

Hide / **Show**: Android's navigation bar on the shooting screen. With the bar shown, the Back button closes the app only when pressed twice. Default: **Hide**.

Margin left (top)

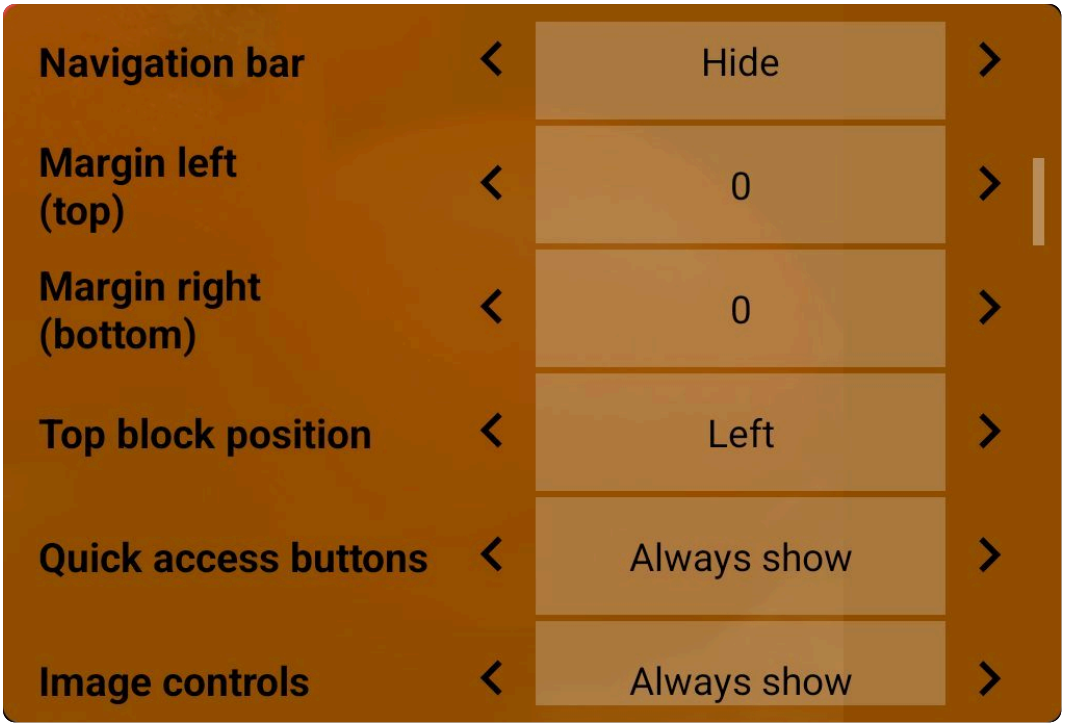
Moves all controls in from the left edge of the screen (the top edge in portrait), in steps of 6 dp. Useful with a phone cage or a case that covers the edge. Default: 0.

Margin right (bottom)

The same from the right edge (the bottom edge in portrait). The two margins together cannot leave less than about 540 dp for the controls.

Top block position

Left or **Center**: where the top block (battery and storage, quick access buttons, indicators) sits. Centred, the information panel moves down. Default: **Left**.



Screen elements

The next seven rows control the seven groups of elements on the shooting screen. Each has the same four modes:

- **Always show**: the group is always on the screen;
- **Toggle by swipe**: a swipe across the screen hides and shows the group, with or without recording;
- **Toggle by swipe during recording**: the group hides by itself when recording starts and comes back when it stops; during recording a swipe shows and hides it, so you do not need to touch buttons while shooting;
- **Never show**: the group is never shown; only this menu brings it back.

A swipe is a stroke of at least about 60 dp over an empty part of the screen. During recording one swipe switches all groups in the second and third modes together. Default for all seven: **Always show**.

Quick access buttons

The quick access buttons: orientation, flashlight, presets, camera choice.

Image controls

The image controls: white balance, its lock, manual white balance, the GPU menu.

Settings buttons & media manager

Settings buttons & media manager: the buttons that open the media manager, the settings and the video and audio menus. This group has no **Never show** mode, otherwise the menus could not be reached.

Focus and zoom controls

Focus and zoom controls: the focus wheel, focus modes, zoom factor buttons, programmed moves and limits.

Exposure controls

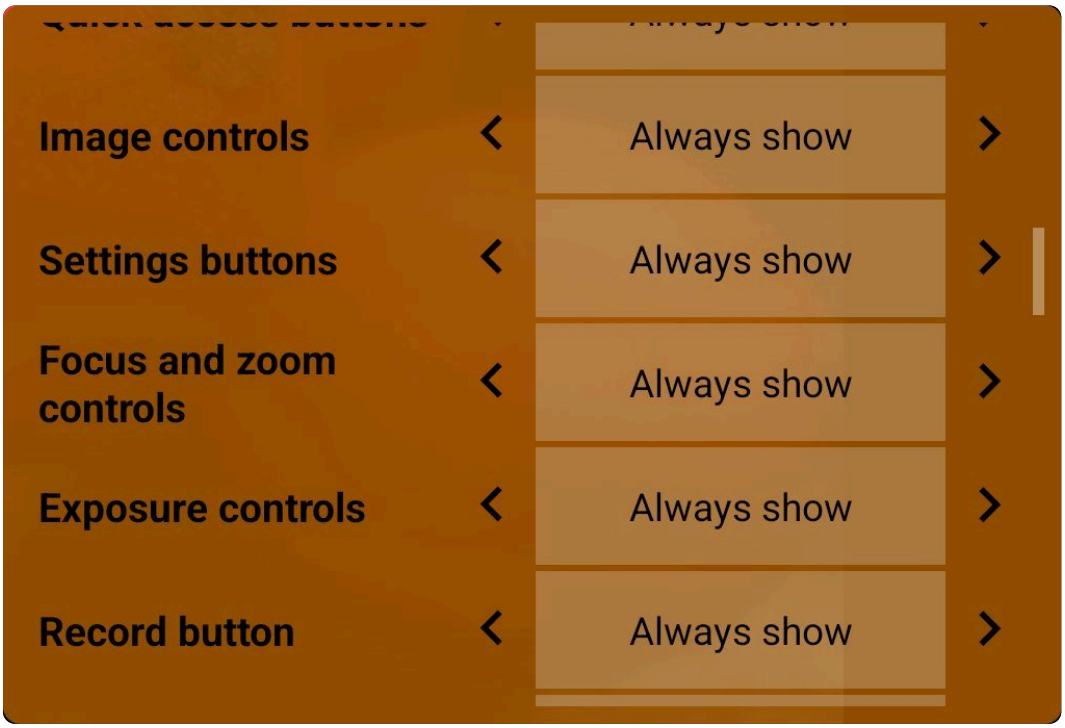
Exposure controls: ISO and shutter speed, exposure compensation and lock, zebra, false colour and the viewfinder LUT button.

Record button

The record button with the recording time and size, the snapshot button and the dropped frames counter.

Indicators & information area

The indicators and information area: histogram, audio level meter, battery and storage, warnings and the information panel.

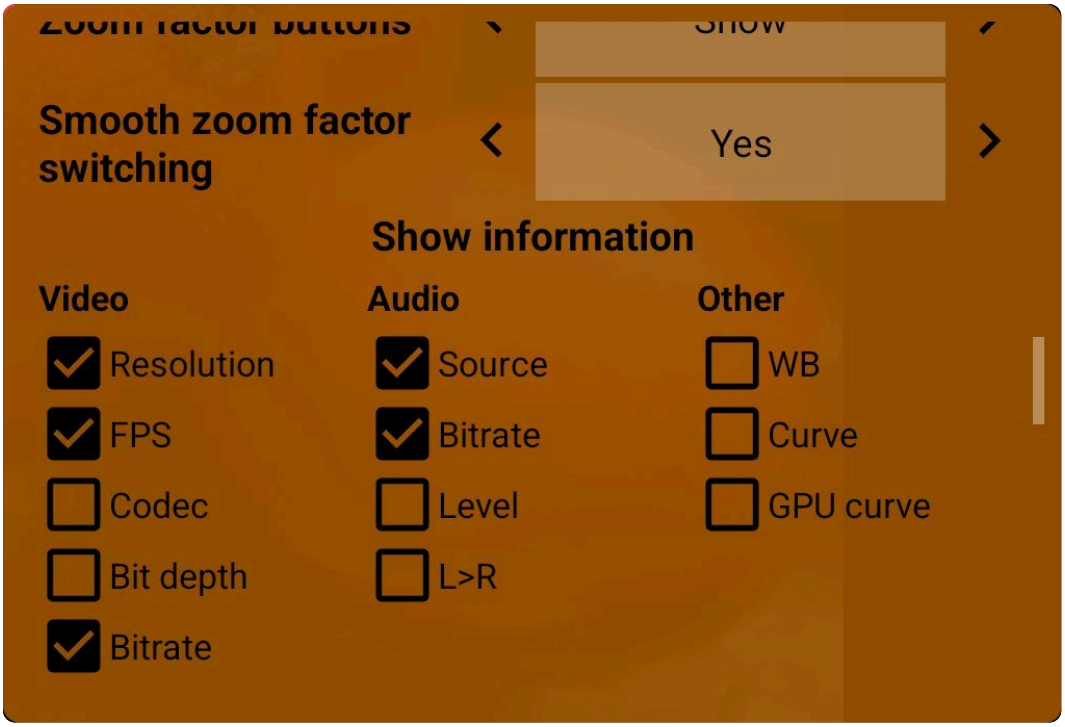


Zoom factor buttons

Show / **Never show**: the row of zoom factor buttons (x0.6, x1, x2…) next to the focus wheel. Shown by default when the camera has zoom factors.

Smooth zoom factor switching

Yes: tapping a zoom factor zooms smoothly. **No**: it jumps straight to the new zoom. Default: **Yes**.



Show information

What the information panel on the shooting screen shows, ticked in three groups:

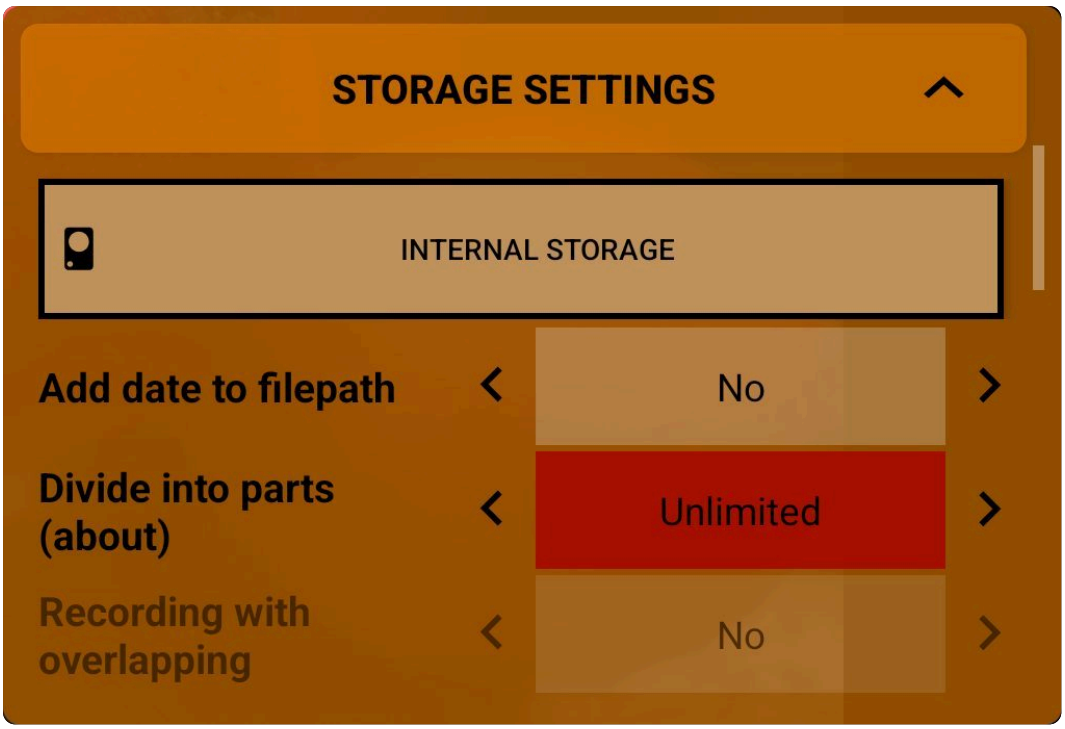
- **Video**: **Resolution**, **FPS**, **Codec**, **Bit depth**, **Bitrate**;
- **Audio**: **Source**, **Bitrate**, **Level** (shown only when not at **Bypass**), **L>R** (shown only when channels are swapped);
- **Other**: **WB**, **Curve**, **GPU curve**.

The frame size shown is the size of the file, after desqueeze, crop and scale. With slow motion the frame rate is shown as "120>24". Untick everything to hide the panel. Default: resolution, frame rate, bitrate, audio source and audio bitrate.

Storage settings

In the app: 7 → ⚙ → Storage settings

Storage settings: where recordings are saved and how long recordings are split into files.



Storage

The section starts with a button for each storage: the phone's memory (**Internal** or the volume name), an SD card, and on Android 8 and later a USB drive. Tap a button to record there. Default: the phone's memory.

- The first time you choose an SD card or USB drive, the app asks to confirm (**Writing to SD Card / Flash Storage**), and for a USB drive Android asks you to choose a folder. Tap the USB button again later to choose another folder.
- The ↶ button next to an SD card or USB drive revokes the app's access to its folder.
- If the chosen folder is not on that drive, the app shows **Path is not allowed**.

Where the files go:

- phone memory and SD card: videos and snapshots in `DCIM/mcpro24fps/`, RAW recordings (ZIP, .mcpro) in `Download/mcpro24fps/`, separate WAV files in `Recordings/mcpro24fps/` (`Music/mcpro24fps/` before Android 12);
- USB drive: straight into the chosen folder.

Before recording the app checks free space: with less than 50 MB (500 MB for RAW) it shows **Not enough space on the media.** and does not start.

Add date to filepath

Yes: files go into a subfolder named after the date, for example `DCIM/mcpro24fps/2026-10-23/`. Default: **No**.

Divide into parts (about)

Splits long recordings into several files of about 512 MB, 1 GB, 2 GB or 3.7 GB, or **Unlimited** (one file). Parts come out about 10 % smaller than the label. 3.7 GB fits the 4 GB file limit of FAT32 cards. Not used for RAW. Default: **Unlimited** on Android 12 and later, 3.7 GB on older versions.

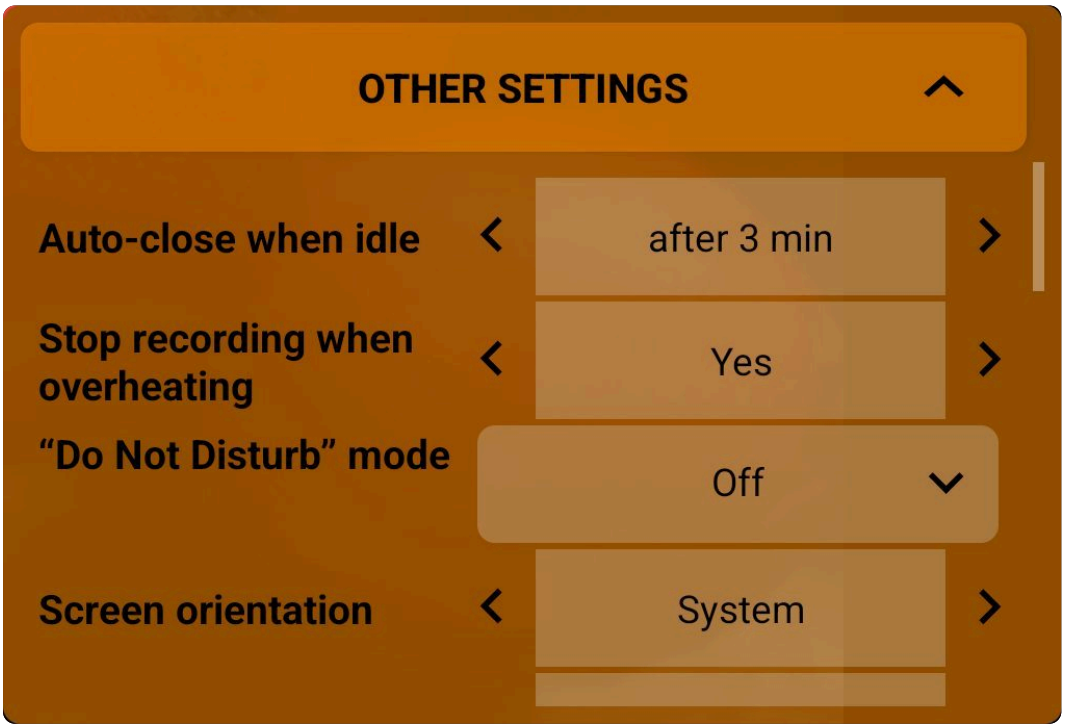
Recording with overlapping

Yes: neighbouring parts overlap by roughly one keyframe interval, so no frame is lost at the joint when you edit them together. **No**: parts follow each other end to end. Unavailable with **Unlimited** and for RAW. Default: **No**.

Other settings

In the app: 7 → ⚙ → Other settings

Other settings: when the app closes by itself, what happens on overheating, notifications, screen orientation and brightness, statistics and language.



Auto-close when idle

Closes the app when the screen has not been touched for 1, 3, 5 or 10 minutes, to save the battery; or **Off**. About 30 seconds before closing a warning counts down (**The application will close due to inactivity after … seconds**); any touch resets it. Never closes during recording or while an HDMI display is connected. Default: 3 minutes.

Stop recording when overheating

Yes: when the phone reports critical heat, recording stops (**Overheat, recording stopped**). Before that, at high heat, the app warns (**High heat, recording may stop**). **No**: only the warnings. Works on Android 10 and later. Default: **Yes**.

“Do Not Disturb” mode

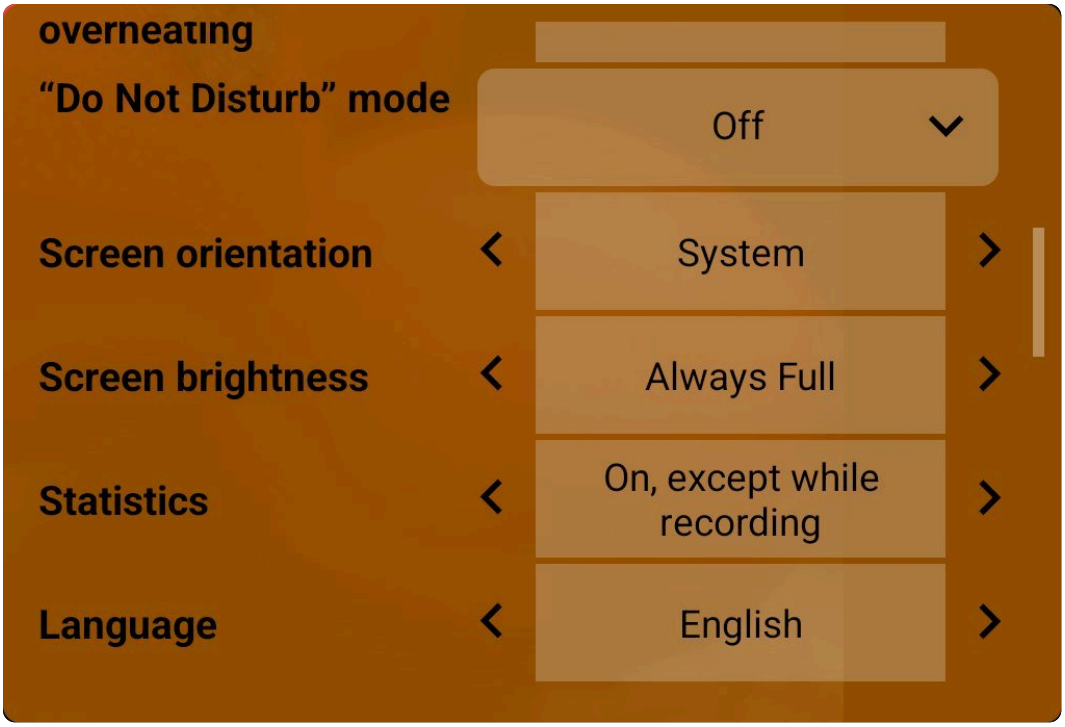
Mutes notification sounds, vibration and pop-up notifications while a recording is running, so that a message or a call does not interrupt the shot. Media sound stays on.

- **Off**: notifications work as usual;
- **During recording**: the app's own Do Not Disturb mode is on from the start to the end of every recording.

The app needs Do Not Disturb access; when you choose **During recording** without it, Android's settings open. The mode is always switched off when recording stops, and also when you return to the app after a crash. The row is shown on Android 10 and later. Default: **Off**.

Screen orientation

System (rotates with the phone in all four directions), **Landscape**, **Portrait**, **Landscape reverse** or **Portrait reverse**. During recording the orientation is fixed as it was at the start. The orientation button among the quick access buttons does the same: double-tap it to choose, long-press to fix the current orientation. Default: **System**.



Screen brightness

Always Full, **Preview: full Rec.: system** (full brightness while framing, the phone's own brightness during recording, which saves battery and heat) or **System**. Default: **Always Full**.

Statistics

On, except while recording / **Off**: anonymous usage statistics that help improve the app. They are paused during recording. Crash reports are sent either way. Default: **On, except while recording**.

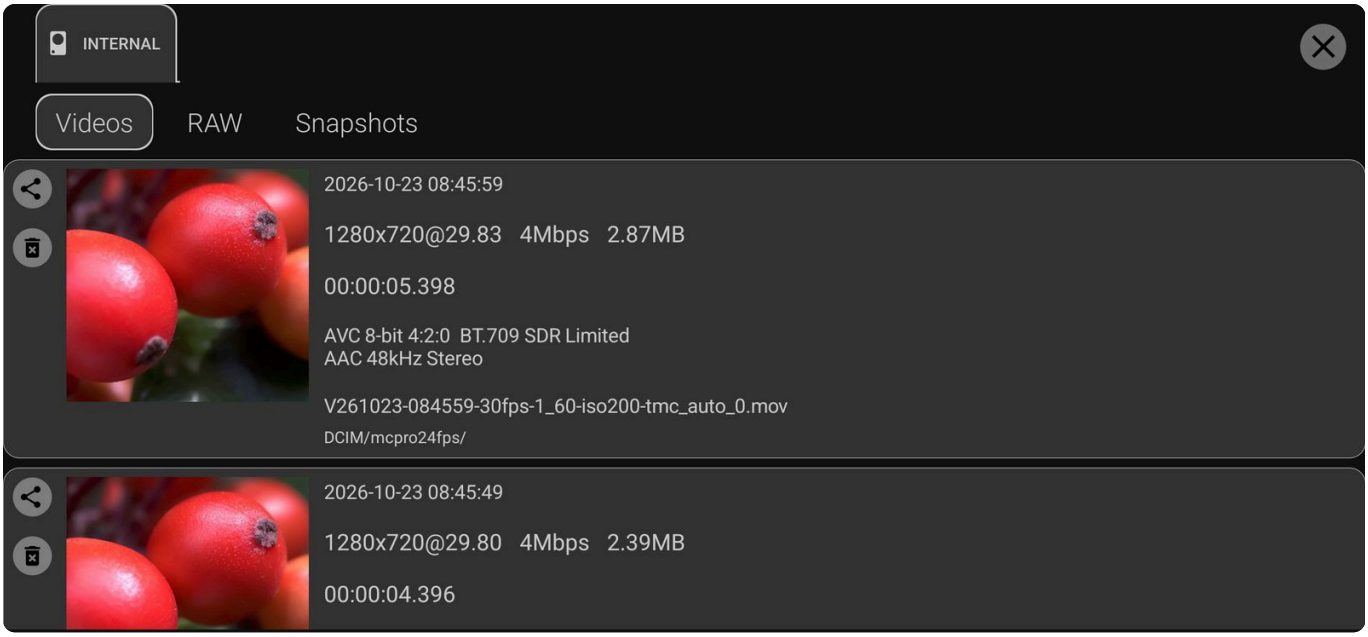
Language

System or one of 15 languages, each shown in its own name. Changing it restarts the screen. Default: **System**.

Media manager

In the app: 7 → 🗀

The folder button opens the list of your recordings. The camera keeps running underneath; close the list with the cross in the top right corner or the Back button. The list does not open during recording.



Storage and file type

The tabs at the top are the storages: **Internal**, an SD card, a USB drive. The tab of the current recording location opens first. Switching tabs does not change where new recordings go.

Below the tabs choose what to show: **Videos**, **RAW** (RAW ZIP and .mcpro recordings) or **Snapshots**. Newest files are at the top.

What each file shows

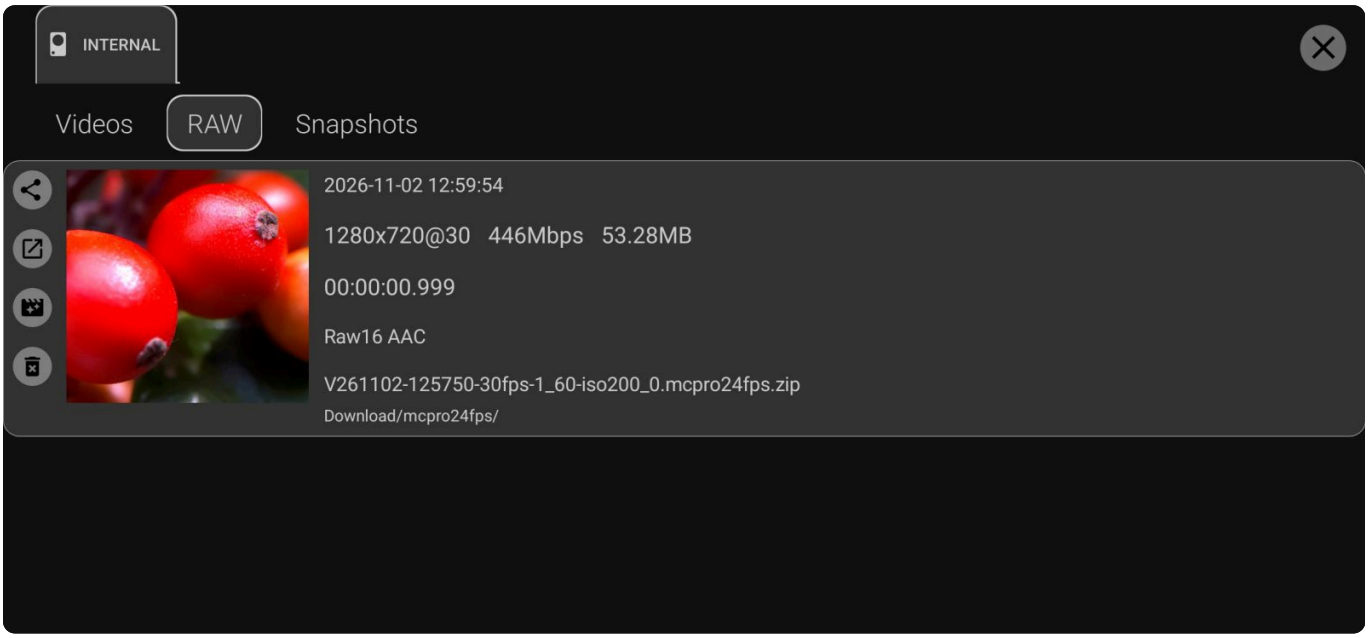
Next to the thumbnail: date and time, frame size and rate, data rate and file size, duration, and a line with technical details. For videos the details include the codec, bit depth, chroma subsampling, colour primaries, transfer, range, pixel aspect ratio, audio and the starting timecode. For RAW: the RAW type, compression and sound format; for slow or fast motion the frame rate is shown as shooting rate and playback rate.

Actions

- Tap a video or snapshot to open it in another app for viewing.
- Tap a RAW recording to play it in the built-in RAW player (on Android 9 and later, 64-bit phones). Next to it are buttons to open the file in another app and to convert it; conversion is part of RAW Bundle.
- The share button sends the file to another app.
- The delete button deletes the file for good, there is no recycle bin. Gyro data files saved next to a video are deleted with it.

- Long-press a file to select several. Tap more files to add them, then delete them together or, for RAW recordings, convert them. The bar at the bottom shows **Selected files:** and the number.

> RAW Bundle
>
> Playing RAW recordings is free. Converting them and the player's tools (exposure, white balance, LUT, distortion correction, HDR, saving a frame as DNG) are part of **RAW Bundle** (what it includes).



There is no renaming, sorting or search in the media manager; for that, open the files in another app on the phone, such as Files or My Files.

RAW player and converter

Playing RAW recordings on the phone and converting them to video or CinemaDNG.

RAW player

In the app: 7 → → *RAW recording*

The RAW player plays RAW ZIP and .mcpro recordings on the phone, with sound. Tap a RAW recording in the media manager to open it. The player needs Android 9 or later and a 64-bit phone with OpenGL ES 3.1. On other phones the tap opens the recording in another app.

> RAW Bundle
>
> Playback, seeking, sound and the recording summary are free. The image buttons (**Output profile**, **Exposure**, **White balance**, LUT, **Lens distortion correction**), saving a frame as DNG and the converter are part of RAW Bundle. Without the purchase these buttons show a lock, and a tap opens the purchase window.



The screen

The picture fills the screen. The top left shows the file name, frame size, frame rate and RAW type. At the top right are **Convert**, **Save frame as DNG** and close. Along the side (above the timeline in portrait) is a column of buttons: the image buttons first, then **Sound** and **Statistics**. On the right, in the middle, are **Previous frame**, **Play** and **Next frame**. The timeline is at the bottom.

During playback the buttons fade after 3 seconds without a touch, leaving a thin progress line at the bottom edge. Tap the picture to show or hide them. They stay on screen while paused and while a wheel is open.

Buttons that don't apply to this screen or recording are hidden: **Output profile** on a screen without HDR, **White balance** when the DNG has no color matrices, **Lens distortion correction** when the recording has no lens distortion data. If the buttons don't fit in one row, they move to a second one.

Top right

1 Convert

Opens the converter panel. The player stays underneath, and everything you set up with the image buttons goes into the conversion.

2 Save frame as DNG

Saves the frame on screen as a separate DNG file. The file comes from the recording as it is, without the player's exposure, white balance or LUT: it is the original frame for a RAW editor. A frame from a RAW ZIP recording is saved exactly as it is stored in the archive; a frame from .mcpro is rebuilt as a DNG. A damaged frame is not saved.

The file is named `<recording name>_<frame number>.dng` and goes into the same folder as snapshots: `DCIM/<app folder>`, with a date subfolder if **Add date to filepath** is on in the storage settings.

Buttons on the left

The image buttons (**Output profile**, **Exposure**, **White balance**, LUT, **Lens distortion correction**) work on the picture. The player develops every DNG frame on the fly, and these buttons change only what you see on screen and what goes into the converter. The recording itself is not changed. A button that is on turns orange. Next to them are **Sound** and **Statistics**.

3 Output profile

How the picture is sent to the screen: Rec709, HLG or HDR10. Each tap moves to the next one, and only profiles the screen supports are offered. On a screen without HDR the button is not there and the picture is always Rec709. The button shows the current profile.

14 Exposure

Opens an exposure wheel above the timeline: −4 to +4 stops in steps of 0.01. Double-tap the wheel to return to 0. When exposure is not 0, the value is shown on the button.



15 White balance

Opens two wheels: color temperature from 2000 to 15000 K in steps of 50 K, and tint from −150 to +150 below it. They start at the white balance the clip was shot with. Double-tap either wheel to go back to "as shot". White balance is not remembered: every recording opens with the balance it was shot with.

Only one wheel is open above the timeline at a time: exposure, white balance or frames. Back closes the open wheel. The player remembers which wheel was open and opens it again next time.



6 LUT

Applies a LUT in .cube format. The first tap opens a file picker; after that a tap turns the LUT on and off, and holding the button picks another file. Files over 64 MB are not read. If the file was moved or deleted, the player shows the picture without a LUT.

7 Sound

Turns the sound on and off. If the recording was shot in slow motion or speed-up and the sound was not adjusted to it, the player plays without sound and says so.

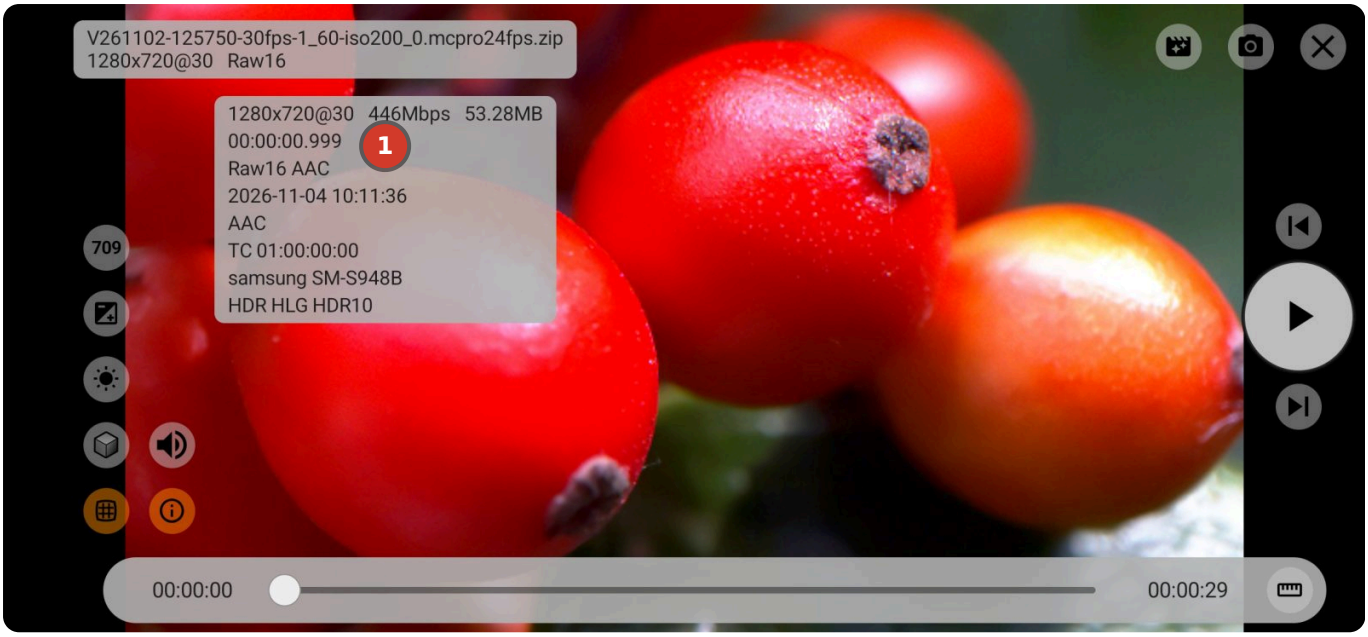
8 Lens distortion correction

Corrects lens distortion using the data the camera wrote into the DNG. On by default.

Profile, exposure, LUT and distortion correction are remembered and apply the next time you open any recording.

19 Statistics

Opens a summary of the recording, like the card in the media manager: frame size and rate, data rate and file size, duration, RAW type and compression, sound, start timecode, the number of dropped frames (if any), the camera, and which HDR formats the screen supports. Tap the button again, tap the picture or press Back to close it.



Buttons on the right

10 Previous frame

Steps one frame back. The button appears only while paused.

11 Play

Starts and pauses playback. At the end of the recording, playback stops on the last frame.

12 Next frame

Steps one frame forward. The button appears only while paused.

Bottom

13 Timeline

Current time on the left, duration on the right. Tap the time to switch to the frame's timecode and the frame number out of the total; tap again to go back to time.

Drag the bar or tap where you want to go. Playback pauses while you drag and resumes afterwards.

1 14 Seek mode: bar or frame wheel

The ruler button next to the timeline opens a frame wheel above it: one tick is one frame, labeled long ticks are seconds. Turn the wheel with your finger; a flick keeps it spinning and it stops exactly on a frame. While the wheel is open and playback is paused, the player keeps frames on both sides of the current one in memory, so scrubbing has no lag. The player remembers which seek mode you chose.



Converter

In the app: 7 → → *RAW recording* → Convert

The converter turns a RAW ZIP or .mcpro recording into a regular video or a folder of CinemaDNG frames, right on the phone. It needs Android 9 or later and a 64-bit phone with OpenGL ES 3.1.

> RAW Bundle
>
> The converter is part of RAW Bundle. Without the purchase the converter button shows a lock, and a tap opens the purchase window.

There are three ways to open the **Converter** panel:

- the **Convert** button in the RAW player;
- the "convert" button next to a RAW recording in the media manager;

- selecting several recordings in the media manager (long press) and using the same button at the bottom. Each recording is converted separately with the same settings; the panel shows the settings for the first one.



Every choice is remembered for next time. The **Convert** button at the bottom of the panel puts the recording in the queue; what happens next is described in Conversion progress.

What the video takes from the player

When the converter is opened from the player, the video gets the exposure, white balance, LUT and distortion correction exactly as they are on screen. When it is opened from the media manager, it uses the exposure, LUT and distortion the player last remembered, and white balance as shot.

A CinemaDNG folder does not get these settings: it holds the original frames.

1 Output

Video or **CinemaDNG folder**. For a CinemaDNG folder only the **Folder** row stays in the panel: the DNG frames are saved as they are, with the sound in a WAV file and the gyro files next to them. Dropped frames are filled with a repeat of the previous frame, so the sequence has no gaps. Default: **Video**.

The rest of the rows apply to video only.

2 Profile

Rec709 · 8-bit, **HLG · 10-bit** or **HDR10 · 10-bit**. Rec709 is regular video that any screen can show. HLG and HDR10 are high dynamic range video for HDR screens and are written in 10 bits. HDR10 files also carry brightness information measured from the frames.

HLG and HDR10 need a 10-bit hardware encoder. If the phone doesn't have one, the conversion stops with an error instead of quietly producing Rec709. Until you pick a profile here for the first time, the converter uses the screen profile from the player.

3 Codec

Auto, HEVC, AVC, AV1 or APV. Only codecs the phone has a hardware encoder for, suitable for the profile and the size of this recording, are listed. AVC writes Rec709 only. AV1 needs Android 10 or later, APV Android 16 or later; APV always writes 10-bit 4:2:2, Rec709 included.

Auto takes the first one available: for Rec709 HEVC, AVC, AV1, APV; for HLG and HDR10 HEVC, AV1, APV. The codec it picked is shown in brackets. While the app is checking the phone's encoders, the row says **Checking the phone's encoders…** and the **Convert** button is unavailable. Default: **Auto**.

Size

Options: **original**, 2160p or 1080p. 2160p fits the frame into 3840×2160 and 1080p into 1920×1080, keeping the proportions; each option shows the resulting size. The converter doesn't upscale, so if the recording is smaller than 3840×2160, the 2160p option is not shown. An option is also missing when the encoder doesn't accept that size. Default: **original**.

Some encoders only accept a width that is a multiple of their step. Then the frame is cropped at the center, and a note with the resulting size appears under the row.

Frame rate

For information only: the video always keeps the recording's frame rate.

Frame timing

How frames are placed in time when the recording has dropped frames:

- **As shot**: each frame sits where the sensor captured it. Where a frame was dropped, the previous one stays on screen longer, and the sound stays in sync with the picture.
- **Frame-rate grid**: an even frame rate, with dropped frames filled by a repeat of the previous one. On long clips the sound may drift slightly.
- **Ignore dropped**: frames back to back, with no repeats or gaps. The video gets shorter by the dropped frames, and the sound drifts from the picture by the same amount.

The note under the row says what the chosen option means for the sound. A frame that could not be read from the archive counts as dropped. Default: **As shot**.

Bitrate

The video data rate: 20 to 200 Mbit/s for HEVC, AVC and AV1, 100 to 600 Mbit/s for APV. Values the phone's encoder doesn't support are hidden. The value is remembered separately for each codec. Default: 50 Mbit/s, 200 Mbit/s for APV.

Debayer

How the sensor mosaic becomes a color frame:

- **MHC**: fast and sharp, fine almost always.
- **AHD**: cleaner on fine detail and colored edges, slower.
- **AHD + color noise reduction**: AHD plus color noise reduction, the slowest. For dark, noisy footage.
- **Bilinear**: the simplest. Fine detail is softer, but it leaves the fewest color fringes on sharp edges of saturated colors.

Default: **MHC**.

Downscale filter

Shown only when the size is smaller than the original. How the frame is scaled down:

- **Softer**: averages neighboring pixels. A softer picture without light or dark halos along edges.
- **Sharper**: a Catmull-Rom filter that keeps more fine detail.

Default: **Softer**.

Container

MOV or MP4. They differ only in sound: MOV can keep it uncompressed (PCM), MP4 always uses AAC. Default: MOV.

Sound

The options depend on the sound recorded in the archive:

- WAV or PCM sound into MOV: **As in the archive (PCM)**, AAC or **No sound**. If the sound is 32-bit float, there is also **PCM 16-bit**, which more programs can read.
- WAV or PCM sound into MP4: **AAC (MP4 has no PCM)** or **No sound**.
- AAC sound: **As in the archive (AAC)** (copied without re-encoding) or **No sound**.

If the archive has no sound, the row says **No sound in the archive**. In older slow-motion or speed-up recordings the sound was not adjusted to the picture, so they are converted without sound. Default: as in the archive.

AAC bitrate and AAC sample rate

Shown only when WAV sound is encoded to AAC. Bitrate from 96 to 320 kbit/s, 192 kbit/s by default. Sample rate: the first option is the recording's own rate (or the nearest lower one the AAC encoder supports), followed by lower ones.

Gyro data

Gyro data for stabilization in Gyroflow, if the recording has it (see Stabilizing in Gyroflow):

- GPMF: a gyro track inside the video and a lens profile file `.lensprofile.json` next to it.
- gcsv: gyro data and lens profile as separate files next to the video, no track.
- Protobuf: gyro data and lens profile in a track inside the video.
- **No gyro**: no gyro data.

On Android 11 and later the files next to the video go into `Download/<app folder>`, because Android doesn't allow such files in DCIM. If the recording has no gyro data, the video is written without it. Default: GPMF.

Folder

Default, **My folder** or **Choose folder…**. By default the video goes where the app saves its recordings: `DCIM/<app folder>` (with a date subfolder if **Add date to filepath** is on), on the storage chosen in the app. The default CinemaDNG folder is `Download/<app folder>/<recording name>`.

There is one own folder for both video and CinemaDNG; a CinemaDNG folder is created inside it with the recording's name. If the app no longer has access to your folder, the file goes to the default folder. The note under the row says exactly where the file will be saved.

The video is named after the recording, the profile and a number: `<recording name>-rec709_1.mov`. If such a file already exists, the number goes up.

Conversion progress

In the app: 7 → 🗀 → *RAW recording* → Convert → Convert

After **Convert** the conversion runs in the background: you can close the player, go back to the media manager or switch away from the app.

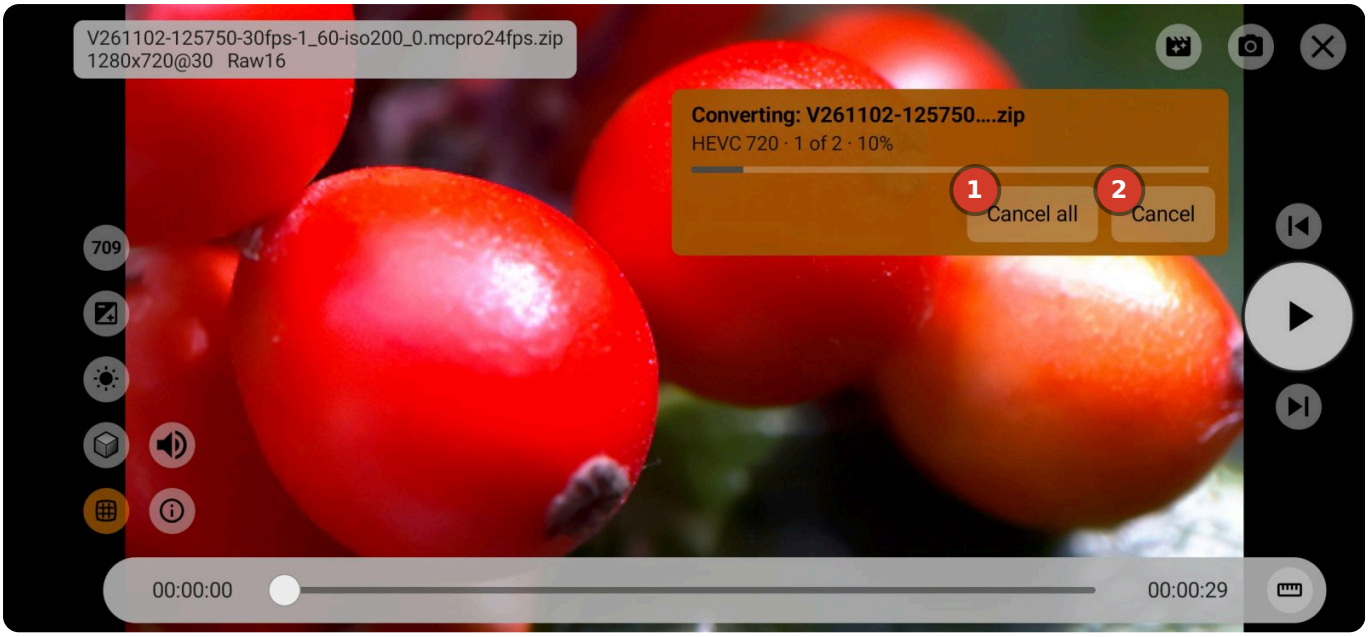
Queue

One recording is converted at a time; the others wait in the order you added them. After **Convert** a short message says whether the conversion started or the recording joined the queue, and its place in it. If the system closes the app, the queue is lost, and the app removes the unfinished files later by itself.

Panel and notification

While the player or the media manager is open, a panel over the screen shows the progress: the recording name, percent and place in the queue. At the end the panel says "Done" with an **Open** button, or shows an error with the reason. The new file is highlighted in the media manager.

When the app is in the background, a notification shows the same: progress with percent and cancel buttons, then the result with **Open** and **Share**. Tapping the notification opens the media manager. On Android 13 and later the app asks for permission to show notifications before the first conversion. Without it the conversion still runs, but no notifications are shown.



2 Cancel

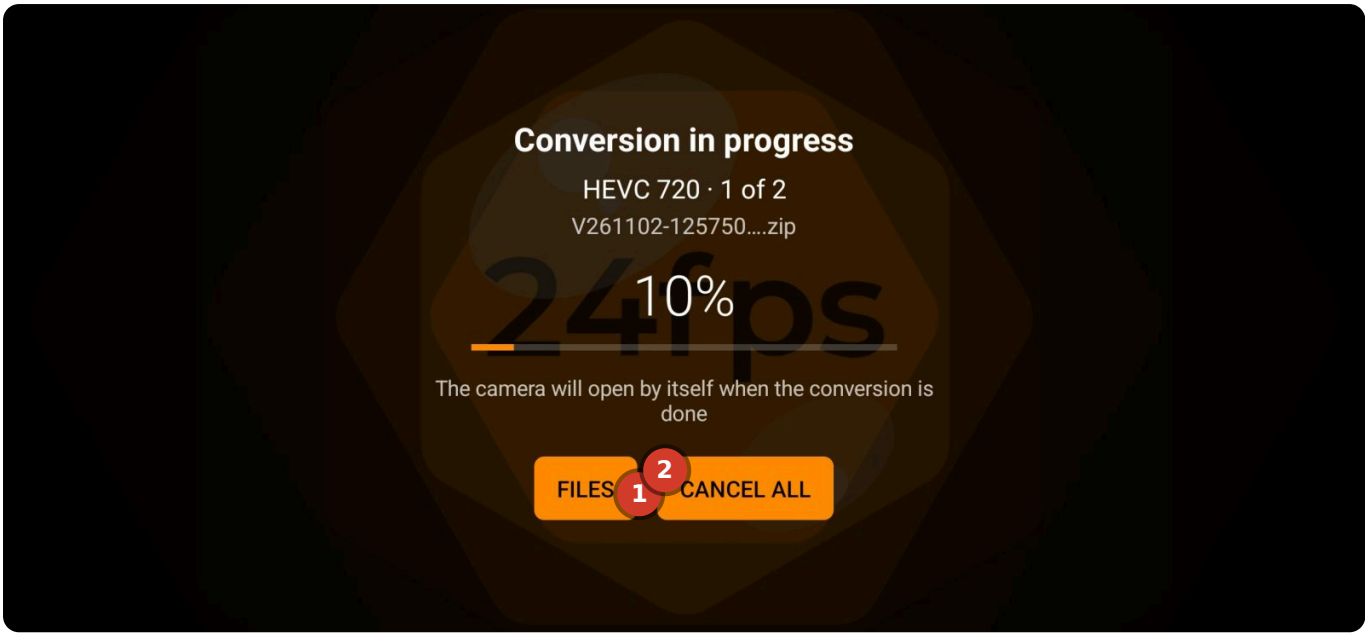
Cancels this recording only. The rest of the queue goes on.

1 Cancel all

Cancels this recording and the whole queue. A cancelled conversion leaves no file behind.

The camera during conversion

While the queue has recordings in it, you can't shoot. The camera is closed; instead of the picture there is a **Conversion in progress** window with the progress and a **Cancel all** button, which works as on the panel. When the queue is done, the camera opens by itself. If the conversion started while the camera was open, the bottom of the screen says **Conversion in progress — recording is not available**.



1 Files

Opens the media manager.

Before it starts

Before each recording the converter estimates whether there is enough space and whether the encoder accepts its size. If not, the conversion doesn't start, and a **Conversion not started** panel explains why:

- not enough space: it shows how much is needed and how much is free. **Start anyway** starts the conversion without the check, since the estimate is on the safe side. If the space does run out, the file is deleted.
- the phone's encoder doesn't accept the recording's size: a button offers to make the video in 2160p.

Errors

If a conversion fails, the unfinished file and the files next to it are deleted, so no truncated video is left in the folder. The panel or notification gives the reason:

- **Storage ran out during the conversion — the file was deleted**: free up space and start again.
- **This phone has no 10-bit hardware encoder for HLG and HDR10 — choose Rec709**.
- **No suitable hardware encoder on this phone**: the phone has no encoder for this profile and size, choose another codec or size.

- **Could not read the RAW archive**: the archive is damaged or not available.
- **Could not create the output file** or **Could not write the file**: check the destination folder and the storage.
- **Not enough memory**: close other apps or choose a smaller size.
- **Android stopped the conversion: background work is limited to 6 hours a day**: on Android 15 and later the system allows background work for no more than 6 hours a day.
- **Android did not allow the conversion to run in the background**: the system didn't allow the background work to start. Check whether background activity is restricted for the app in the battery settings.
- **The converter is a paid feature**: you need RAW Bundle.

How to

Step-by-step articles for common tasks.

Set up before the first shoot

A few settings decide what kind of file you get. It is worth going through them once on a new phone, and again for each camera you use: most of them are stored per camera.

1. Choose the camera. Tap the camera button among the quick access buttons and pick the lens you want to shoot with.
2. Set the frame size and rate. Open the video menu, tap **Resolution and FPS**, turn the wheels and tap **Apply**. For most work 24, 25 or 30 fps is the place to start; see the video menu for what the dimmed and red values mean.
3. Choose the codec and bitrate in the codec settings. HEVC gives better quality than AVC at the same bitrate, but older editing computers decode it more slowly. 50 Mbps is enough for 1080p; for 4K, 100 to 200 Mbps leaves more room for grading.
4. Choose where to save: open the settings, then Storage settings. If you record to an SD card formatted as FAT32, set **Divide into parts (about)** to 3.7 GB.
5. Check the sound: in the audio menu choose **Source**. If you will add sound later from a separate recorder, the camera microphone is still useful for syncing.
6. Clear the screen. In Interface hide the groups you do not need, or set them to show on a swipe.
7. Make a short test recording and play it back from the media manager. Check the dropped frames counter: if it turns red at your settings, lower the bitrate or the frame size.

When the setup works, save it as a preset so that you can return to it in one tap.

Set manual exposure with the 180° rule

In video, the shutter speed shapes motion blur, so it is usually fixed first and brightness is set with ISO (and ND filters outside). The common choice is the 180° rule: the shutter is half the frame time, 1/48 at 24 fps, 1/60 at 30 fps. The app uses this value by default.

1. Switch the exposure column to manual: tap the exposure mode switch at the top of the **Exposure controls**.
2. Check the shutter speed reading. If it is not 1/(2 × frame rate), step to it with the − and + buttons.

3. Hold the "A" button for a moment and release it. The app takes the exposure the camera would choose and turns it into manual settings, keeping the shutter where it is.
4. Fine-tune with the ISO wheel. Turn on **Zebra** to see where highlights clip, or **False Color** to judge the whole frame. Both need the viewfinder to go through the GPU.
5. If the picture is too bright even at the lowest ISO, use an ND filter rather than a shorter shutter: a short shutter makes motion look choppy.

If the ISO reading is highlighted, the camera has gone past the sensor's analogue gain and adds digital gain. Noise rises quickly from there; add light instead if you can.

Under mains-powered lights, also see how to remove flicker.

Shoot log with a monitoring LUT

A log curve keeps more of the highlights and shadows for grading, but the picture looks flat on the screen. A monitoring LUT shows it with normal contrast while you shoot, without changing the recording.

1. If the phone supports it, set 10-bit in the codec settings: log in 8-bit is prone to banding in skies and gradients.
2. Open the white balance menu and go to the curve tab. Choose a curve: If the app warns about an aggressive curve, read the advice in the window: on many phones it is better to use manual white balance with such curves.
    - mLog 60%, 80% or 100% for the app's own log with adjustable sliders;
    - a version of a known camera log (mS-Log3, mLog-C, mV-Log and others) if you want to use the matching conversion in your editor.
3. In manual white balance choose the colour gamut that matches your conversion, for example S-Gamut3.Cine for mS-Log3.
4. In Viewfinder settings set **Viewfinder LUT**, usually Rec.709. A LUT button appears on the shooting screen: tap it to compare with the log picture. For half-frame views, long-press the LUT label among the indicators, then tap the button.
5. Expose by the zebra or false colour, not by how the LUT picture looks. Both work on the log signal.
6. For editing, either save the LUT as a `.cube` file with the download button next to **Viewfinder LUT**, or turn on **Embed LUT** in the metadata settings to embed it in every clip.

> mcpro24fps Demo

> In the demo version the LUT cannot be saved as a `.cube` file.

Leave **OETF and Color Primaries** at **Auto-correction**: the file then tells editors which curve was used, and log footage is not shown with the wrong gamma.

Remove flicker from lights

Many lamps on AC mains pulse at twice the mains frequency: 100 times a second in 50 Hz countries (Europe, most of Asia and Africa), 120 in 60 Hz countries (the Americas, part of Japan). If the shutter is not open for a whole number of these pulses, the footage flickers or shows dark bands rolling through the frame.

Manual exposure

1. Tap the button next to the shutter speed reading in the manual exposure column until it shows the base for your mains: 25, 50 or 100 for 50 Hz, 30, 60 or 120 for 60 Hz.
2. The shutter steps now follow the mains instead of the frame rate. At 24 fps with the 50 Hz base: 1/25, 1/37, 1/50, 1/75, 1/100. Pick 1/50 (or 1/100) for the cleanest result.

At 25 and 50 fps in 50 Hz countries, and at 30 and 60 fps in 60 Hz countries, the normal shutter speeds already fit the mains and nothing needs to change.

Automatic exposure

Set **Anti-banding (AE)** in the auto exposure column to ⋮ **50Hz** or ⋮ **60Hz**, or to automatic if the camera supports it.

If some lights still flicker, they are probably LED or fluorescent fixtures with their own driver frequency. Try other shutter speeds while watching the screen, or change the light.

Pull focus and zoom smoothly

A programmed pull moves focus (or zoom) between two set points at an even speed, which is hard to do by hand on a touch screen.

1. Tap M in the **Focus and zoom controls** to switch to manual focus. The limit buttons and ⏭ appear.
2. Focus on the first subject with the wheel. Long-press the top or bottom limit button to set this point; the app shows **Top limit set** (or the bottom one).

3. Focus on the second subject and long-press the other limit button.
4. Tap the gear between the limit buttons and set **Duration**, the time of the whole pull. Start with 2 to 4 seconds. **Curvature** changes how the speed is spread along the way; leave the default at first.
5. Start recording and tap the limit button of the point you want to go to. Focus moves there smoothly; the button shows ■, tap it again to stop early. To pull back, tap the other limit button.

Turn on focus peaking in Viewfinder settings to see both points clearly while setting them.

⏩ starts focus and zoom together: focus goes to whichever of its limits is further from where it is now, and so does zoom. Without zoom limits, zoom goes to the end of its range. Use ⏩ when you want both to move, for example a slow push-in with a focus change.

A zoom move on its own works the same way as a focus pull, with the zoom limit buttons in zoom mode.

To pull focus without touching the screen, set **Volume Buttons** to **Focus control** in Control: focus moves towards the far limit while volume up is held and towards the near one while volume down is held. On the camera button or a remote the same choice works as a toggle: the first press starts the move, the second stops it. The "**Start/stop program. focus+zoom**" choice (start or stop the programmed focus and zoom move) does the same as ⏩.

Shoot slow motion

There are two ways to get slow motion: record at a high frame rate and slow the clip down in the editor, or let the app write the file at a lower playback rate so that it plays slow everywhere.

1. Open the video menu, tap **Resolution and FPS** and choose a high frame rate, for example 120 fps, and a size the phone supports at that rate. Tap **Apply**.
2. If you want the file itself to play slow, set **Target frame rate** to your project rate, for example 24. A label with "24fps" appears on the shooting screen. Leave it **Off** to slow the clip down in the editor instead.
3. Light the scene well: at 120 fps the longest shutter is 1/120, and above 60 fps many phones switch to automatic exposure.
4. Record. With slow motion on, the sound is slowed down with the picture.

Some things to know:

- Above 60 fps the camera works in high-speed mode, where manual settings, the GPU and some codecs are often unavailable. The picker dims what does not work.
- At 120 fps and above, the button for mains-frequency shutter speeds has no effect. Under mains lighting, see how to remove flicker before choosing the frame rate.
- Check the Real frame rate indicator: some phones deliver fewer frames than requested in low light.

Fast motion works the same way: shoot at a low rate (for example 6 fps) and set **Target frame rate** higher.

Record RAW

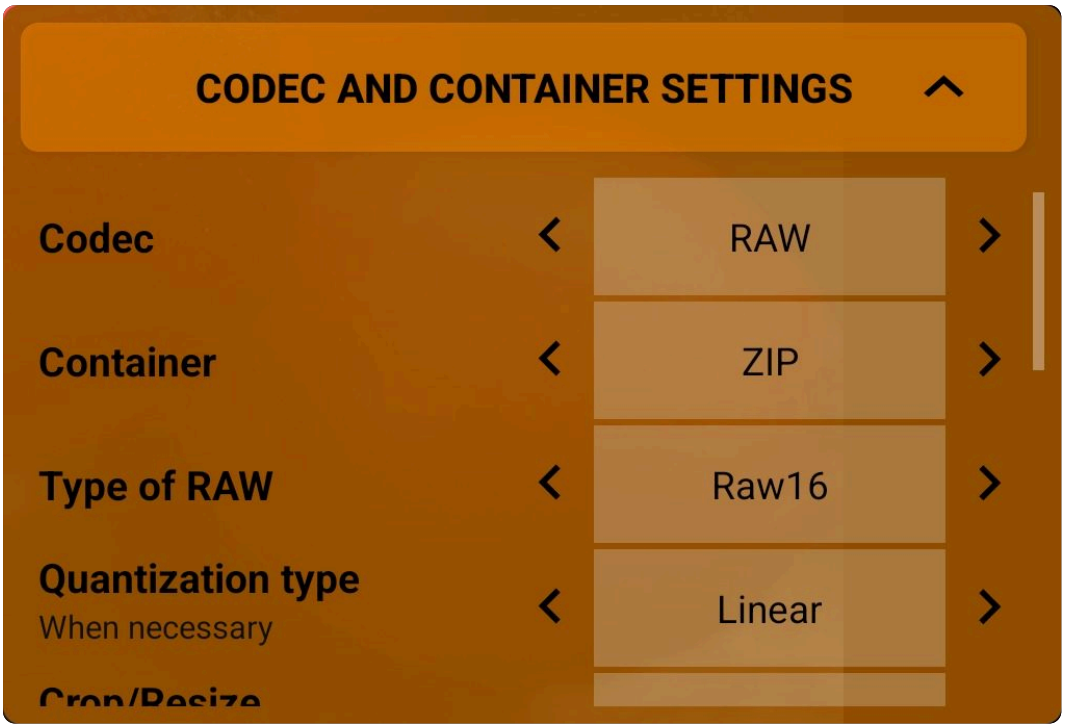
RAW recording saves the sensor data as DNG frames, before the phone's noise reduction, sharpening and colour processing. You get the most room for grading, at the cost of very large files. It is available only on cameras that provide RAW.

> RAW Bundle
>
> Recording RAW as a ZIP of DNG frames and playing it back are free. Recording in **.mcpro**, the RAW player's tools (exposure, white balance, LUT, distortion correction, HDR, saving a frame as DNG) and converting recordings on the phone need **RAW Bundle**, a separate one-time purchase. After signing in you can try it free for 7 days. You can buy it from any button with a lock or in the settings, with RAW Bundle. The full list is at the end of this page.

> mcpro24fps Demo
>
> The demo version does not record RAW: with RAW selected, the record button opens the window offering the full version. There is no **RAW Bundle** in the demo.

1. In the codec settings set **Codec** to **RAW**. The app adjusts the frame size and rate to what RAW can do and reopens the camera.
2. Choose **Container**:
    - **ZIP**: a ZIP of DNG frames that most RAW tools can unpack;
    - **.mcpro**: the app's own format, several times smaller (Android 10+, 64-bit phones, part of **RAW Bundle**).

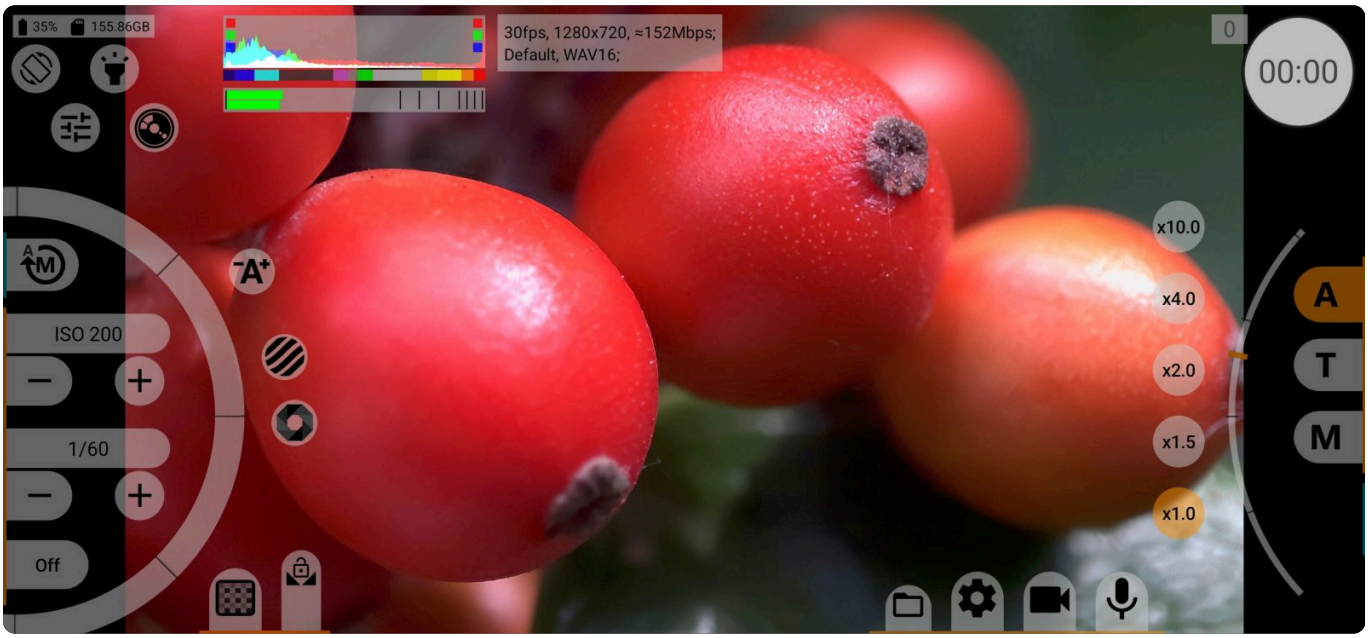
3. For ZIP, a lower **Type of RAW** (for example Raw12 or Raw10) makes the files smaller. **Compression** makes them smaller too but loads the processor; try both on your phone. For .mcpro, SQ is visually lossless and is a good start.
4. Make sure there is space. RAW does not start with less than 500 MB free, and a minute of 4K RAW in ZIP can take gigabytes. Fast internal memory works better than most SD cards.
5. Record a test clip and watch the dropped frames counter. If it turns red, lower the frame rate, the frame size or the bit depth, or increase **Buffer size (frames)**.



RAW recordings are saved in `Download/mcpro24fps/`. In the media manager a tap plays a recording in the built-in RAW player (Android 9 and later, 64-bit phones). The convert button turns it into other formats on the phone; conversion is part of **RAW Bundle**.



In RAW the camera curve, the GPU menu, the video metadata settings and zoom mode are not available. White balance does not change the pixels: it is written to the DNG, and you set the final balance when developing.



What comes with the app and what is in RAW Bundle

The app itself records RAW as a ZIP of DNG frames, and its RAW player plays those recordings: play and pause, frame by frame, the timeline, sound and recording details. This stays free.

RAW Bundle is a separate one-time purchase. It adds:

- recording in **.mcpro**;

- in the RAW player: exposure, white balance, your own LUT, lens distortion correction, HDR output (HLG or HDR10, on an HDR screen) and saving a frame as a DNG;
- converting a RAW recording on the phone into a video (HEVC, AVC, AV1 or APV in MP4 or MOV) or into a CinemaDNG folder.

Without **RAW Bundle** these buttons show a lock, and a tap opens the purchase. After signing in you can try everything free for 7 days. **RAW Bundle** is offered only on phones that can run it: Android 10 or later, a 64-bit processor, OpenGL ES 3.1 and at least one camera with RAW. On other phones the locked buttons and the purchase do not appear at all.





Record good sound

1. Connect the microphone. A USB or wired microphone replaces one of the phone's own; which one is decided by Android.
2. In the audio menu choose **Source**. **Unprocessed** gives the cleanest signal where the phone supports it; **Camcorder** is a safe choice otherwise. For a Bluetooth headset choose **Bluetooth**; a Bluetooth label then appears among the indicators.
3. Choose the format in **Bitrate**: AAC at 192 kbps or more for everyday work, PCM for editing without loss, or WAV to get the sound as a separate file.
4. Watch the **Audio level meter** at the top of the screen while the subject speaks. Peaks should stay in the yellow zone and only occasionally touch red. If the sound is too quiet, raise **Level**; keep it at **Bypass** if the level is fine, since digital gain also raises noise.
5. To listen while recording, plug in headphones and set **Monitoring level**. The sound never goes to the phone's speaker.

If the phone is mounted upside down, swap the channels in the audio menu so that left stays left.

With slow motion the sound is slowed down with the picture. When an external USB camera is connected, the app records without sound.

Use an external monitor or recorder

A monitor or recorder connects through a USB-C to HDMI adapter, on phones that output video over USB-C. The app has two different HDMI settings, depending on what you need on the external screen.

A bigger viewfinder

Use this to frame and focus on a monitor while the phone records.

1. Connect the monitor.
2. In Viewfinder settings set **HDMI Output** to **On**.
3. The monitor shows the viewfinder picture with your tools: LUT, zebra, false colour, focus peaking, frame lines and the grid. The phone records as usual.

A clean signal for a recorder

Use this when an external recorder records the picture.

1. Connect the recorder.
2. In the video menu set **HDMI Output** to **On**. If no display is found, the app shows **HDMI connection not found**.
3. The recorder gets the clean video stream without any overlays. The phone itself does not record in this mode: pressing the record button shows **Recording via HDMI is On**.

Without GPU recording, the external display gets the picture only in sizes and frame rates it can take. While the video menu setting is on, the viewfinder setting has no effect.

Stabilise in Gyroflow

Gyroflow is a free desktop program that stabilises footage using the phone's gyroscope readings recorded during the shot. The result is usually smoother than the phone's own stabilisation, and you choose how much to crop afterwards.

1. In the hardware settings set **Stabilization** to **Off**. The phone's own stabilisation moves the picture in ways the gyro data does not show, and Gyroflow then corrects the wrong motion.
2. In the metadata settings set **Gyroscopic data**:
   - **GPMF**: the gyro track goes inside the clip, and a lens profile is saved next to it. Opens in the regular Gyroflow release;
   - gcsv: the data goes into a separate `.gcsv` file next to the clip, with the lens profile;
   - **Protobuf**: everything inside the clip, but at the time of writing only Gyroflow nightly builds read it.
3. For RAW, use **Gyroscopic data** in the codec settings instead.
4. Shoot. Use a shutter that is not too long: motion blur inside a frame cannot be removed by stabilisation, so at 24 fps 1/100 or shorter gives cleaner results for handheld walking shots.
5. Copy the clip together with the `.lensprofile.json` (and `.gcsv`, if used) to the computer and open the clip in Gyroflow. It finds the files next to it.

If GPMF can hold only a limited length at the current bitrate, the setting shows the limit, for example "max. 40 min".

Shoot with an anamorphic lens

An anamorphic adapter squeezes a wide image into the frame horizontally. The picture has to be stretched back (desqueezed) to look right. The app can do this on the screen only, mark the file so that editors stretch it, or stretch the recording itself.

1. In Viewfinder settings set **Desqueeze viewfinder** to your lens factor, for example 1.33x. The viewfinder now shows true proportions; the recording is not changed.
2. Set **Frame lines** to the aspect ratio you are framing for, for example 2.39:1.
3. Choose how the file is handled:
    - leave the recording squeezed and set **Pixel aspect ratio** to **Same as viewfinder** in the metadata settings. Editors that read the pixel aspect ratio show the clip stretched, and you keep every recorded pixel;
    - or record through the GPU and set **Desqueeze video** in the GPU settings. The file is stretched for real, and plays correctly anywhere. 1920×1080 at 1.33x becomes 2552×1080.
4. Make a test clip and check it in your editor.

Large stretched frames may exceed what the phone's encoder can record; if recording fails, lower the frame size or use the first option.

Switch between setups with presets

If you shoot different kinds of scenes, for example interviews at 25 fps with log and B-roll at 50 fps, a preset brings back a whole setup in one tap.

1. Set everything up for the first scene: camera, frame size and rate, codec, bitrate, curve and LUT, white balance, sound.
2. Open **Camera module presets** among the quick access buttons and tap +. Give the preset a short name you will recognise, such as "Interview log 25".
3. Set up the next scene and save it as another preset.
4. To switch, open the list and tap a card. After confirmation the app restarts the screen with the preset's settings and switches to its camera.

ISO, shutter speed, focus and exposure compensation are not part of a preset: they depend on the light at the moment. To change a preset, apply it, adjust the settings and use the card's overwrite button.

Keep in mind that most settings are already stored separately for each camera. If your two setups differ only by lens, switching cameras may be enough.

To move all settings and presets to another phone or keep a backup, use the save and load buttons under Global settings.

Icons

Every icon of the shooting screen. The link leads to the description of the button.

 Orientation: turns with the phone

 Orientation fixed: landscape

 Orientation fixed: portrait

 Orientation fixed: reverse landscape

 Orientation fixed: reverse portrait

 Flashlight on/off

 Presets: save and apply camera setups

 Camera choice

 Bluetooth remote (not shown in this version)

 Battery level

 Free space on the selected storage

 Sound comes from a Bluetooth microphone

 This format needs a purchase

 Take a snapshot

 Manual exposure on: tap for automatic

 Automatic exposure on: tap for manual

 Lower ISO by one step



Raise ISO by one step



Shorter shutter: darker frame



Longer shutter: brighter frame



Hold to set exposure automatically once



Zebra: marks over- and underexposed areas



False Color: colours the frame by brightness



Viewfinder LUT on the whole frame



Viewfinder LUT on the left half



Viewfinder LUT on the right half



Exposure compensation value



Darker: lower exposure compensation



Brighter: raise exposure compensation



Automatic exposure follows the scene



Automatic exposure is locked



Continuous autofocus



Tap to focus: tap the frame to focus there



Manual focus



Manual focus to your own infinity point



Zoom mode, limit: up to video size



Zoom mode, limit ×1.5



Zoom mode, limit ×2.0



Zoom mode, limit: camera maximum



Start a programmed focus and zoom pull



Programmed pull is running: tap to stop



Focus to the top limit; long-press sets it



Focus pull settings



Focus to the bottom limit; long-press sets it



Focus is moving to a limit: tap to stop



Zoom to the top limit; long-press sets it



Zoom pull settings



Zoom to the bottom limit; long-press sets it



Zoom is moving to a limit: tap to stop



White balance menu



Automatic white balance follows the scene



Automatic white balance is locked



Hold to set white balance automatically once



A saved white balance preset is selected



GPU processing menu



Hold to set white balance automatically once



Save the balance as a preset



Back to the saved preset values



Delete the preset



White balance panel



Colour gamut panel



Colour matrix panel



Fixes highlight artefacts with steep curves



Marks skin tones (wide selection)



Marks skin tones



Marks neutral, unsaturated areas



Settings buttons folded: tap to show



Media manager: your recordings and snapshots



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