

ALEXA Mini

QUICK GUIDE

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Imprint

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should be treated as such.

Original version.

NOTICE

This document is a Quick Guide only. For detailed operation instructions, please
refer to the User Manual.

For further assistance

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Contents

1	For your safety / 为了您的安全.....	5
1.1	Risk levels and alert symbols / 危险级别和警示标志.....	5
1.2	Vital precautions / 重要安全措施.....	6
1.3	General precautions / 般安全措施.....	7
2	Audience and intended use.....	9
3	Scope of delivery and warranty.....	10
4	Camera layout.....	11
4.1	Product identification.....	17
5	Power supply.....	18
6	Switching on/off.....	19
7	Connectors.....	21
7.1	Front connectors.....	21
7.2	I/O panel.....	22
7.3	Media panel.....	24
7.3.1	Preparing a USB memory stick.....	25
7.3.2	Changing a CFast 2.0 card.....	26
8	Lens mount/filters.....	28
8.1	ND filter module.....	28
8.2	Changing a lens.....	29
8.3	Lens control.....	30
8.3.1	Manual iris adjustment.....	30
8.3.2	Iris control via user button.....	31
8.3.3	Auto iris.....	32
9	Camera controls.....	33
9.1	Function button FN and camera buttons 1-3.....	33
9.2	Recording button.....	34
10	MVF-1 controls.....	37
10.1	EVF image/monitor.....	38
10.2	MVF-1 buttons.....	39
10.2.1	PK peaking button.....	39
10.2.2	EXP exposure tool button.....	40
10.2.3	VF1 & VF2 user buttons.....	41
10.2.4	PLAY button.....	41
10.2.4.1	Playback screen controls.....	42
10.3	Diopter adjustment.....	42

10.4	Adjusting the monitor.....	42
10.5	Changing the monitor mode.....	43
10.6	Live monitor.....	43
10.7	User monitor.....	45
10.8	Adjusting the monitor brightness.....	45
11	Overlay menu.....	47
12	Web remote.....	49
13	Camera preparation.....	52
13.1	Adjusting the MVF-1.....	52
13.2	Mounting to a bridge plate.....	53
14	Assembly and retrofits.....	56
14.1	MVF-1 and EVF cable.....	56
14.2	Camera handle.....	58
14.3	Antenna.....	59
14.4	Changing a lens mount.....	60
14.5	CCP-1.....	62
14.6	Transvideo StarliteHD5-ARRI Monitor.....	64
15	Licensing and updating.....	67
15.1	Camera update.....	67
15.2	Licensing.....	67
15.2.1	Deleting a license.....	67
16	Appendix.....	69
16.1	Technical data.....	69
16.2	Dimensional drawings.....	73
16.3	Declarations of conformity.....	73

1 For your safety / 为了您的安全

Before use, please ensure that all users comprehensively read, understand, and follow the instructions in this document. / 使用前，请确保所有的用户都已经阅读、理解，并遵循本文档内的操作说明。

1.1 Risk levels and alert symbols / 危险级别和警示标志

Safety warnings, safety alert symbols, and signal words in these instructions indicate different risk levels:

▲ DANGER!

DANGER indicates an imminent hazardous situation which, if not avoided, **will result in** death or serious injury.

▲ WARNING!

WARNING indicates a potentially hazardous situation which, if not avoided, **may result in** death or serious injury.

▲ CAUTION!

CAUTION indicates a potentially hazardous situation which, if not avoided, **may result in** minor or moderate injury.

NOTICE

NOTICE explains practices not related to physical injury. No safety alert symbol appears with this signal word.

Note: Provides additional information to clarify or simplify a procedure.

本文档内的安全警告、安全警示标志和标识词语指示不同的危险级别：

▲ 危险

危险表示危急、有危害的情景，若不防范，则会导致死亡或严重的伤害。

▲ 警告

警告表示有潜在危害的情景，若不防范，则可能会导致死亡或严重的伤害。

▲ 小心

小心表示有潜在危害的情景，若不防范，则可能会导致中等或较轻的伤害。

提示

注意表示此行为不会导致人身伤害。因此此标识词语中不含警告标志。

注：注意中会提供用于解释或简化工作的额外信息。

1.2 Vital precautions / 重要安全措施

▲ DANGER!

High voltage! Risk of electric shock and fire!

Short-circuits may entail lethal damage!

Before use, read and follow all valid instructions.

Use solely and exclusively as described in the instructions.

Never open. Never insert objects.

For operation, always use a power source as indicated in the instructions.

Always unplug the power cable by gripping the power plug, not the cable.

Never try to repair. All repair work should be done by a qualified ARRI Service Center.

Never remove or deactivate any safety equipment (incl. warning stickers or paint-marked screws).

Always protect from moisture, cold, heat, dirt, vibration, shock, or aggressive substances.

Never cover any fan openings.

▲ 危险

高电压！有触电或起火风险！

短路将引起致命危险。

使用之前，请仔细阅读所有未过期的使用说明，并严格遵循。

切勿打开机身。切入插入任何物体。

操作时，请务必使用说明中指出的电源。

断开电源时请握住电源插头，而不是电线。

切勿尝试自行维修。所有的维修工作必须由具备资质的ARRI 维修中心进行。

切勿移除或毁坏任何安全设施（例如警告贴纸或涂漆标示的螺丝）。

务必避免潮湿、寒冷、炎热、多尘、震动、冲击或严酷的使用环境。

切勿覆盖任何风扇开口。

▲ CAUTION!**Condensation! Risk of electric shock and fire!**

Condensation may form on the sensor and electrical connections when exposing the camera to sudden changes of temperature or humidity!

To avoid injury and damage, never operate the camera when condensation occurs.

▲ 小心**冷凝！有触电或火灾风险！**

当将摄影机暴露于温度或湿度迅速变化的环境中时，影像传感器和电子部件连接处可能会产为了您的安全 6 生的冷凝。

为了避免受伤或设备损坏，在冷凝发生时切勿操作摄影机。

▲ CAUTION!**Heavy weight! Risk of injury and damage!**

If placed on an unstable surface, the camera can fall and cause serious harm!

Always place the camera on proper support devices. Safely attach it as described in the instructions.

▲ 小心**设备重量较大！有受伤或设备损坏风险！**

若安置于不稳定的位置，则摄影机可能会掉落，并造成严重的伤害。

务必将摄影机安装于适当的支撑设备上。请按照说明中所描述的方法来安全地安装摄影机。

▲ CAUTION!**Hot surfaces! Risk of injury and damage!**

During extended operation or operation in high ambient temperatures, the fan outlet at the camera rear, the CFast drive and the CFast card can get hot.

Never cover, obstruct or block the fan in- or outlets while the camera is powered.

1.3 General precautions / 般安全措施

NOTICE

Even rugged cameras use components sensitive to improper use.

Always unplug the camera from power sources before making changes to the setup or system (in particular: changing cables).

Direct sunlight can result in camera housing temperatures above 60 °C (140 °F). At ambient temperatures above 25 °C (77 °F), protect the camera from direct sunlight.

Protect the optical system and sensor: Never point the camera or viewfinder into direct sunlight.

Avoid permanent sensor damage: Never let any direct light or reflections from high-energy light sources (e.g. laser beams) enter the camera's optical path.

Protect the sensor: Always keep a lens or protective cap on the empty lens mount. Change lenses in dry, dust-free environments only.

Always clean the sensor cover glass according to ARRI instructions.

Only use the tools, materials and procedures recommended in this document. For the correct use of other equipment, see the manufacturer's instructions.

提示

即使本摄影机非常坚固，也是由敏感的组件所组成的，请谨慎使用。

当改变摄影机安装支撑设备或系统时（特别是更换电缆），请务必断开摄影机电源。

注意保护光学系统和影像传感器：切勿将摄影机或取景器直接面朝直射阳光。

避免对影像传感器造成永久性伤害：切勿让任何来自高能量光源（例如激光）的直射光或反射光进入摄影机的光路系统。

注意保护影像传感器：空镜头卡口上务必安装镜头或保护盖。更换镜头时，务必在干燥、无尘的环境中进行。

请完全并仅按照用户手册中所描述的方法来清洁影像传感器保护玻璃。若清洁不成功，请咨询ARRI维修中心。切勿尝试打开保护玻璃。

清洁影像传感器保护玻璃时，务必遵守ARRI说明书中描述的方法。

仅使用本文档中建议使用的工具、材料和操作方法。若要正确地使用其他设备，请参阅其制造商的说明书。

2 Audience and intended use

NOTICE

The product is solely and exclusively available for commercial costumers and shall be used by skilled personnel only. Every user should be trained according to ARRI guidelines.

Use the product only for the purpose described in this document. Always follow the valid instructions and system requirements for all equipment involved.

The ALEXA Mini is a 35 mm digital camera solely and exclusively for recording images at various resolutions suitable for a variety of distribution formats:

- ProRes 422, ProRes 422 HQ, ProRes 4444, ProRes 4444 XQ, and ARRIRAW* codec
- REC 709 encoding (through use of look files), Log C or ARRIRAW* encoding
- CFast 2.0 card recording
- Up to 200 fps with full image quality
- 35 mm CMOS sensor in 16:9 or 4:3* modes
- EVF with OLED eyepiece
- Fold-away monitor for both live view and user interface access
- Small and lightweight built for high mobility and special applications

* Feature requires licensing.

3 Scope of delivery and warranty

NOTICE

Product and packaging contain recyclable materials. Always store, ship, and dispose of according to local regulations.

ARRI is not liable for consequences from inadequate storage, shipment or disposal.

Delivery

On delivery, please check if package and content are intact. Never accept a damaged/incomplete delivery. A complete delivery includes:

- ALEXA Mini camera with lens mount according to order: titanium PL, AMIRA PL, EF
- Antenna
- USB memory stick
- 3 mm Allen key
- Quick Guide
- Original packaging incl. drying agent

NOTICE

ARRI offers an increasing variety of product bundles and additional accessories.

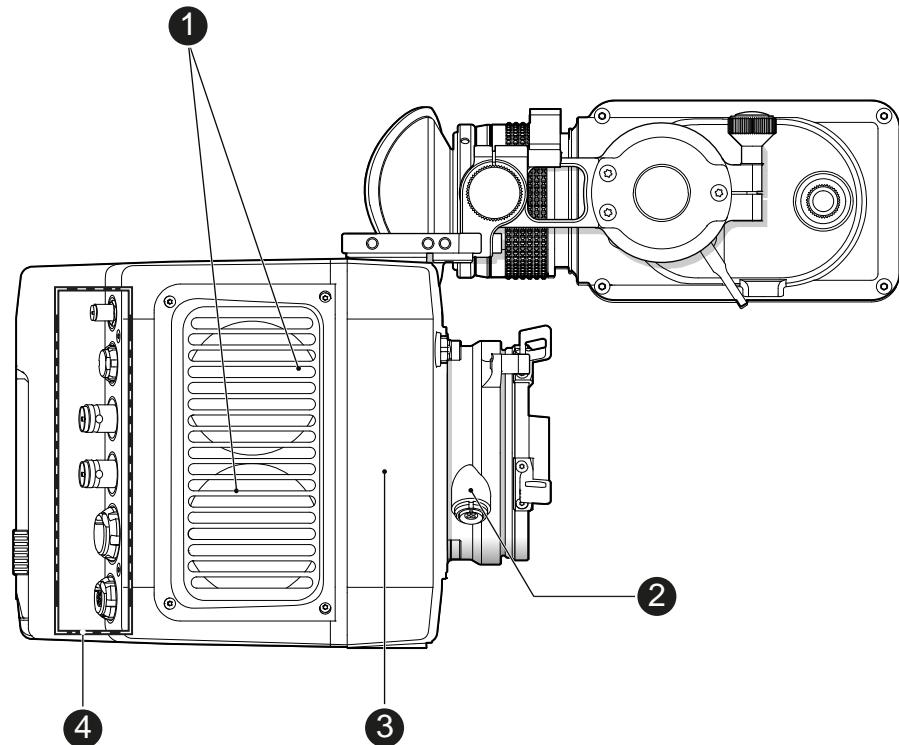
For details, please consult our website or your local ARRI Service Partner.

Warranty

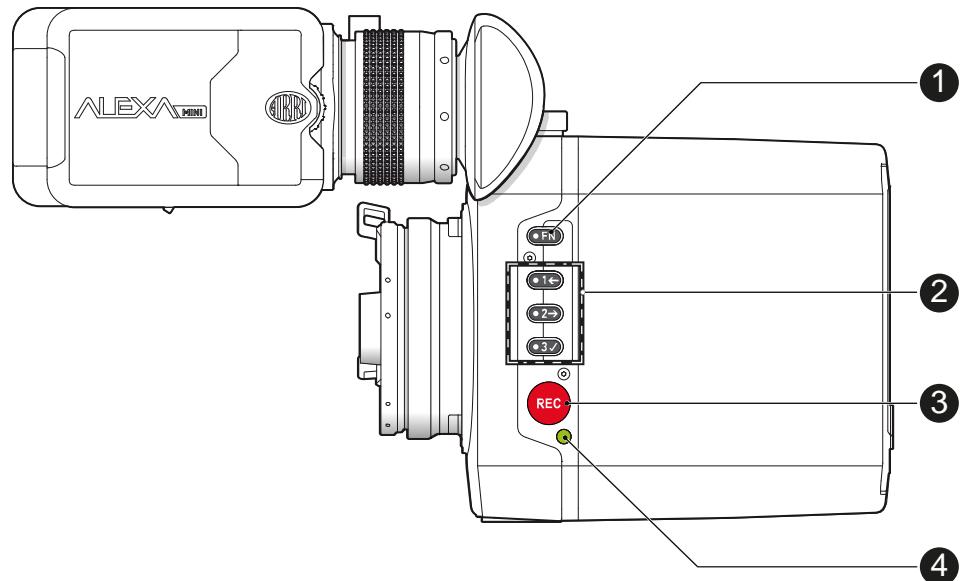
For scope of warranty, please ask your local ARRI Service Partner. ARRI is not liable for consequences from inadequate shipment, improper use, or third-party products.

4 Camera layout

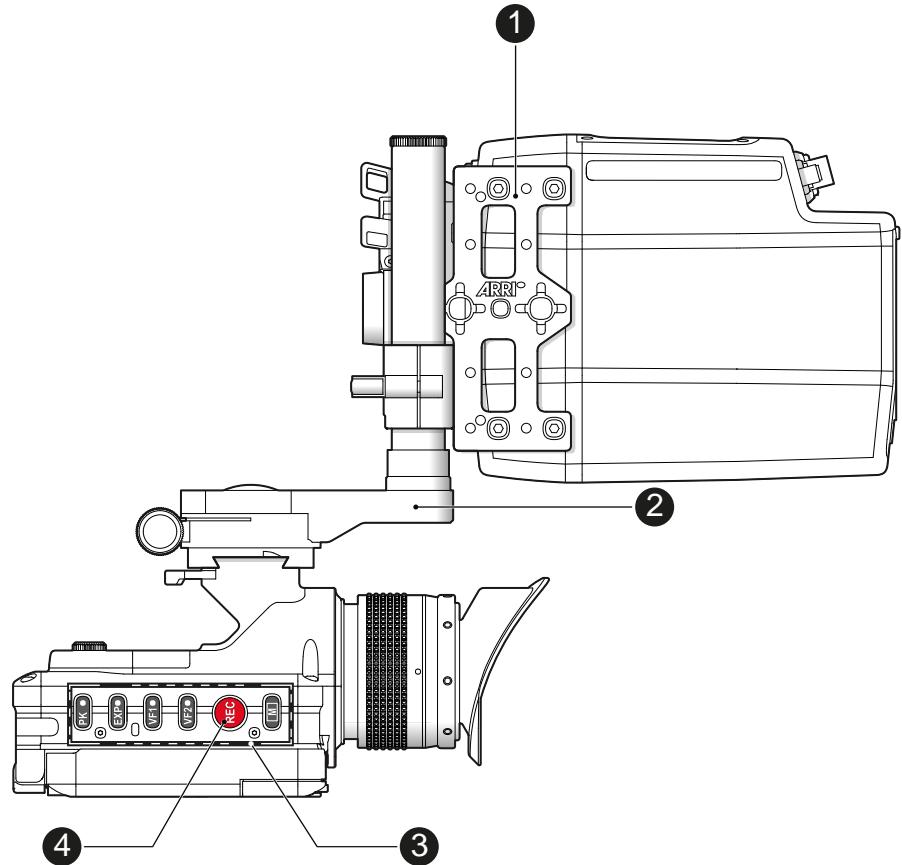
Right



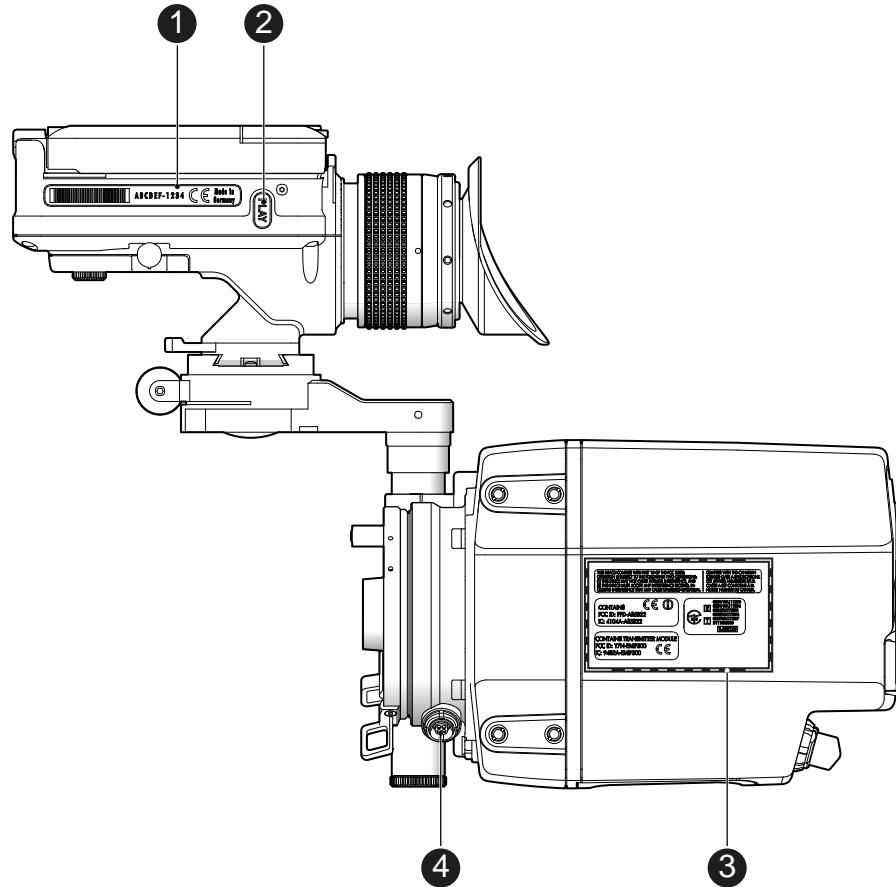
- 1 Fan intake
- 2 LBUS connector
- 3 integrated WiFi antenna
- 4 I/O panel

Left

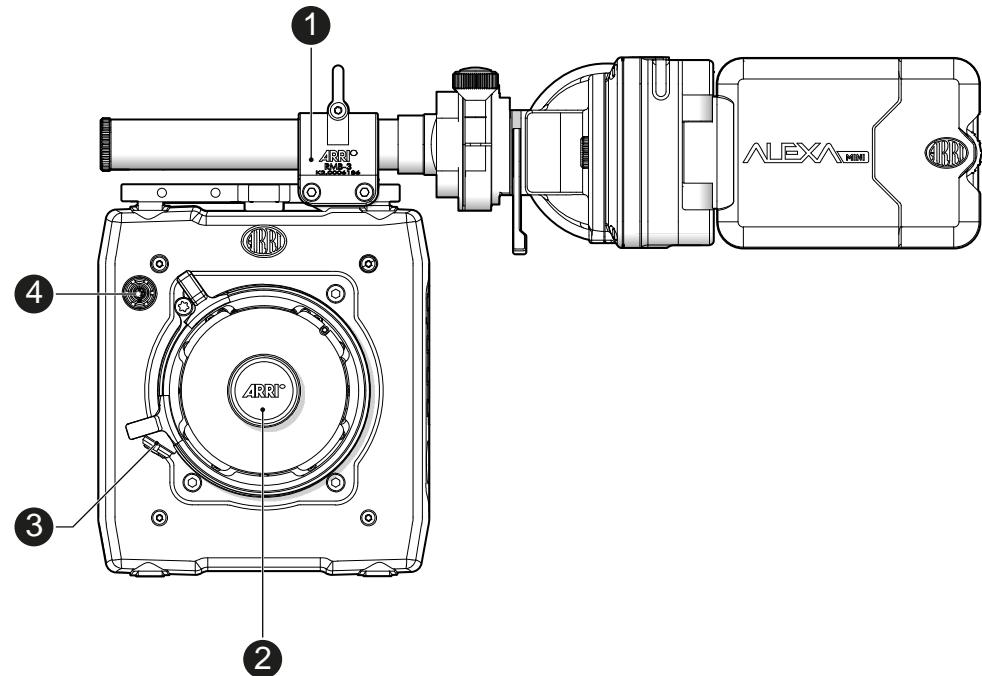
- 1** Function button
- 2** Camera buttons 1-3
- 3** Recording button
- 4** Status LED

Top

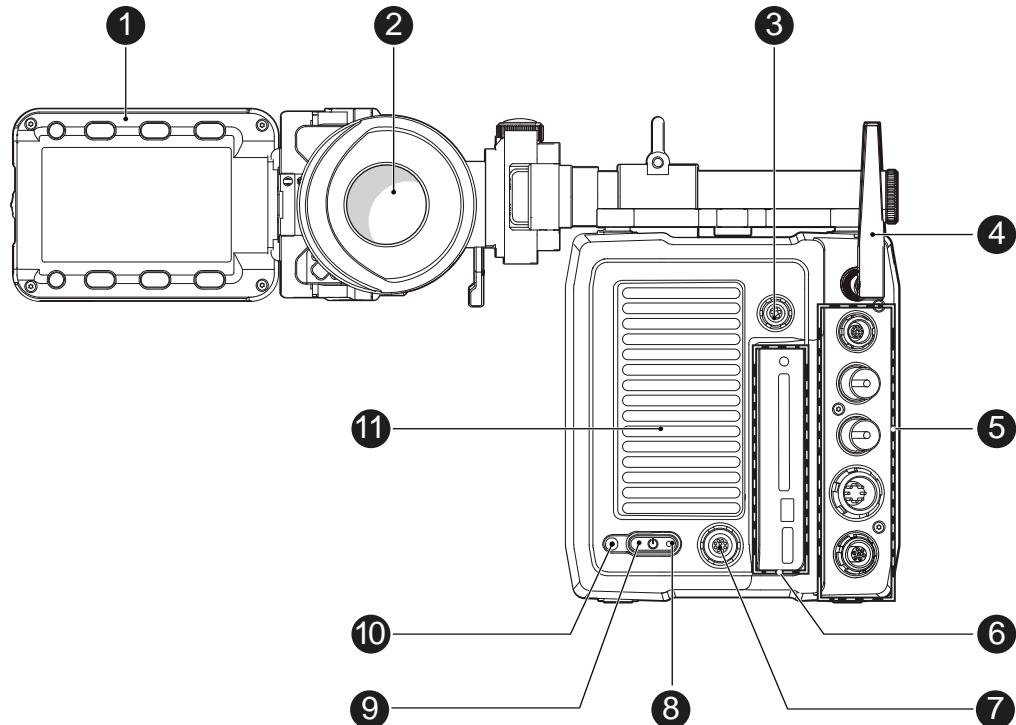
- 1 MAP-1
- 2 MVB-1
- 3 MVF-1 buttons
- 4 Record button

Bottom

- 1 MVF-1 type label
- 2 PLAY button
- 3 Camera type labels
- 4 LBUS connector

Front

- 1** RMB-3
- 2** Lens mount (here: titanium PL)
- 3** LBUS connector
- 4** Audio connector

Back

- 1** Fold-away monitor (MVF-1)
- 2** OLED eyepiece
- 3** Timecode connector
- 4** White radio antenna
- 5** I/O panel
- 6** Media panel (CFast 2.0 card slot, USB)
- 7** Ethernet connector
- 8** Boot status LED
- 9** Power button
- 10** Recording status LED
- 11** Fan outlet

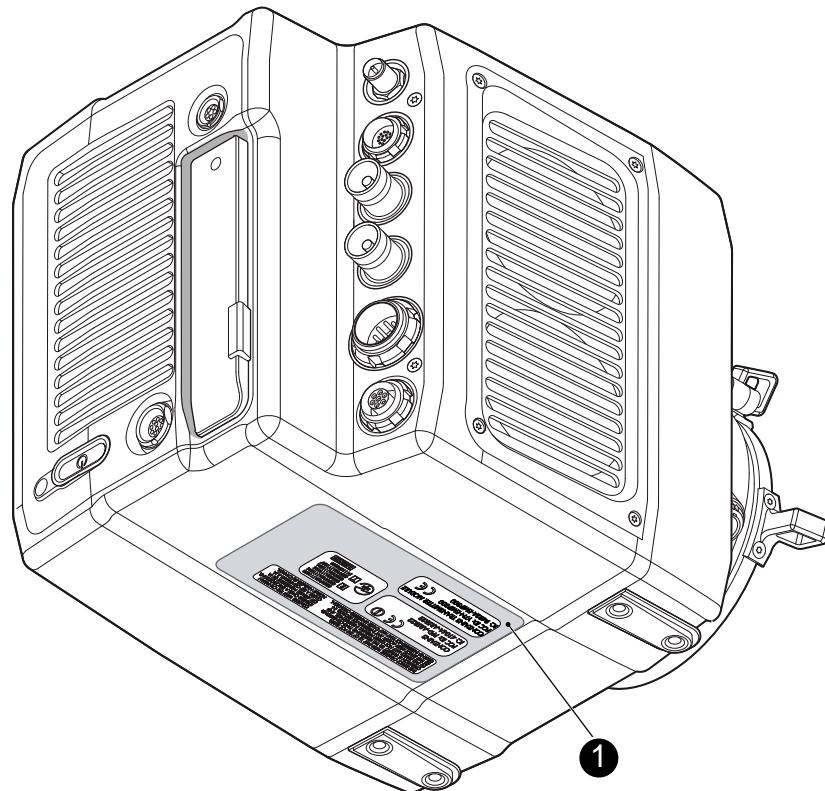
▲ CAUTION!

Hot surfaces! Risk of injury and damage!

During extended operation or operation in high ambient temperatures, the fan outlet at the camera rear, the CFast drive and the CFast card can get hot.

Never cover, obstruct or block the fan in- or outlets while the camera is powered.

4.1 Product identification



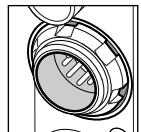
The FCC conformity label and the CE type label with serial number (1) are on the camera bottom. The serial number consists of the last 5 digits of the equipment number K1.0003873-XXXXX.

5 Power supply

The camera power is supplied by external power sources only.

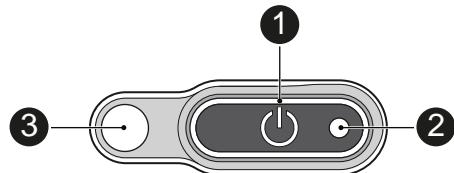
NOTICE

If the power supply is interrupted with the camera switched on, the camera will automatically repower and boot-up on reconnection.



Use the 8-pin LEMO connector and a KC50-S or KC50-SP-S cable to supply the camera with 10.5 to 34 V DC.

6 Switching on/off



NOTICE

Before switching on, ensure that the camera is connected to an external power source.

The power button background illumination is on when the power is in the valid range.

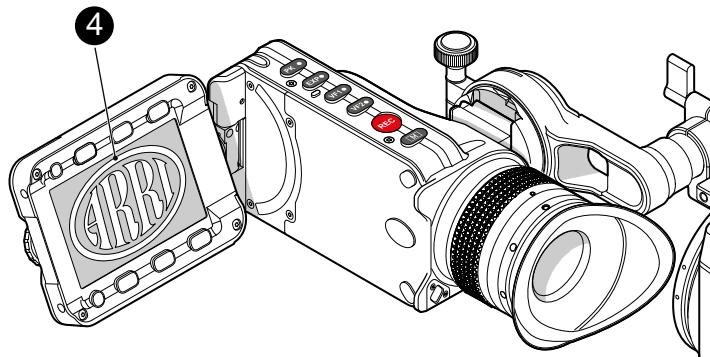
To switch on the camera:

- ▶ Press the power button (1).

The camera starts booting. The boot status is indicated as follows:

Boot status LED (2) is...	Camera
flashing blue	is booting
solid blue	has finished the boot process

For mounted MVF-1 only: During the boot process, the ARRI logo appears in the monitor of the MVF-1 (4).



To switch off the camera:

- ▶ Press and hold the power button (1) until the camera has switched off and the boot status LED (2) turns off.

For mounted MVF-1 only: On the monitor of the MVF-1, a countdown appears. On reaching zero, the camera switches off.

To check the recording status

The recording status is indicated as follows:

Record status LED (3) is...	Camera is...
solid green	ready for recording
solid red	recording
off	not ready for recording. Check, if the CFast 2.0 card is valid. If not: Insert a valid CFast 2.0 card. See page 52.
flashing green/red alternately	not ready for recording due to an error. Check alert screen on MVF-1 for reasons. Reboot camera.

NOTICE

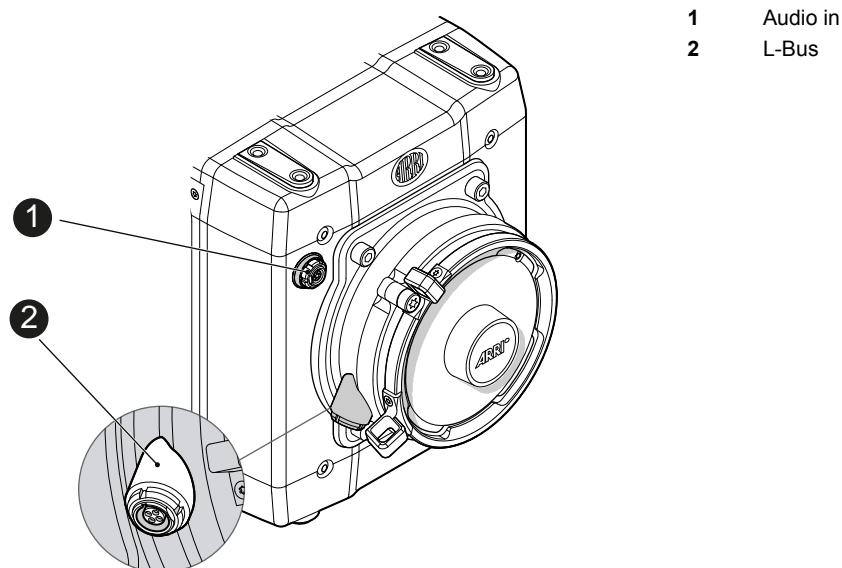
The recording status is also visible in the home screen, the live screen, the EVF image, and the SDI image.

7 Connectors

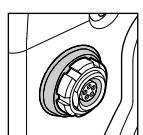
NOTICE

Connecting or disconnecting devices or cables while recording can disturb the audio/image signal due to static electricity.

7.1 Front connectors

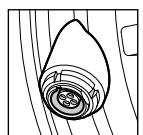


Audio in (5-pin LEMO)



2-channel line level audio input.

LBUS (4-pin LEMO)

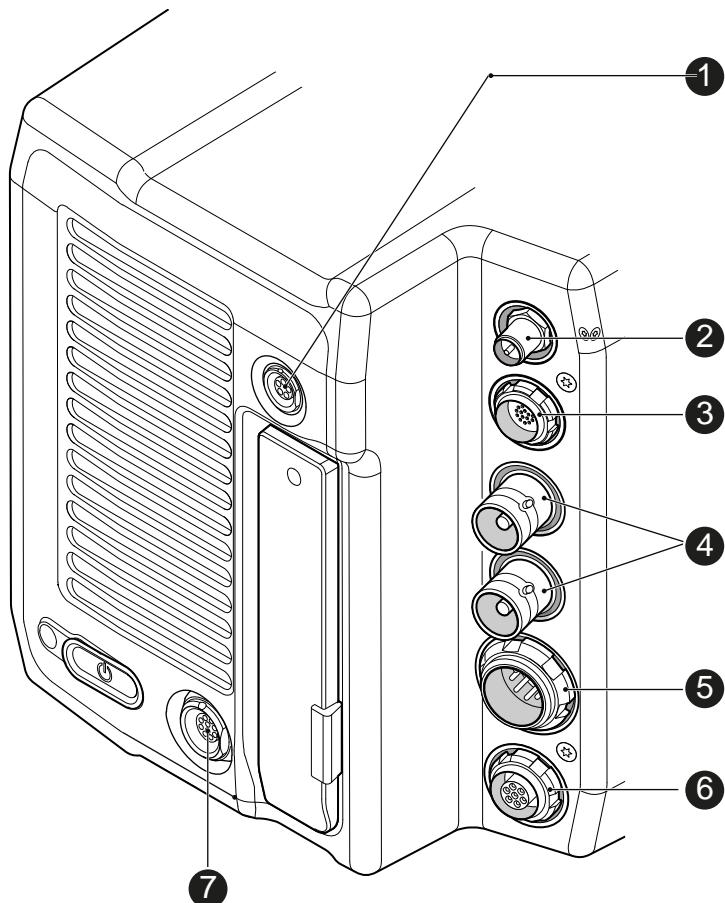


LBUS output for daisy-chainable active lens motors.
Supports CMotion cforce motor and ARRI cforce mini motor.

7.2 I/O panel

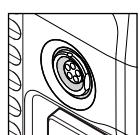
NOTICE

If the power supply is interrupted with the camera switched on, the camera will automatically repower and boot-up on reconnection.



- | | | | |
|----------|------------------------|----------|--------------------|
| 1 | Timecode connector | 5 | BAT main power in |
| 2 | White radio antenna | 6 | EXT connector |
| 3 | MVF-1 or CCP-1 | 7 | Ethernet connector |
| 4 | HD-SDI image out 1 & 2 | | |

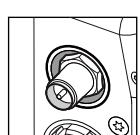
TC (5-pin LEMO)



The TC connector is a 5-pin LEMO socket. It accepts and distributes LTC (Longitudinal Time Code) signals.

Note: The camera has a TC buffer to keep a synced external TC for up to three minutes while camera power is disconnected.

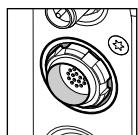
White radio antenna



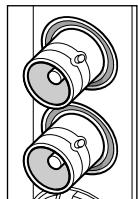
Mounting point for white radio antenna for lens control.

NOTICE

Do not leave the antenna connector open during operation or transport. The radio module inside could be damaged by electrostatic discharge on the open connector. ARRI recommends using the originally supplied antenna only (order number: K2.0001996).

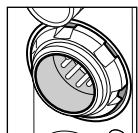
EVF (16-Pin ODU)

Hot swappable interface for MVF-1 or CCP-1.

SDI OUT 1 & 2 (BNC)

Both BNC outputs deliver image outputs in 1920 x 1080 422 1.5G, 422 3G, 444 3G and 422 6G* single link formats. Through a hardware modification, SDI 2 can be reconfigured into a SYNC connector for analog genlock signals (Black burst, Tri-level sync). Please contact an ARRI camera service center for more information.

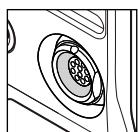
*Only on SDI 2 in UHD recording format

BAT (8-pin LEMO)

Via cables KC50-S (2 m, straight) and KC50-SP-S (coiled), this main power supply input accepts 10.5 to 34 V DC.

EXT (7-pin LEMO)

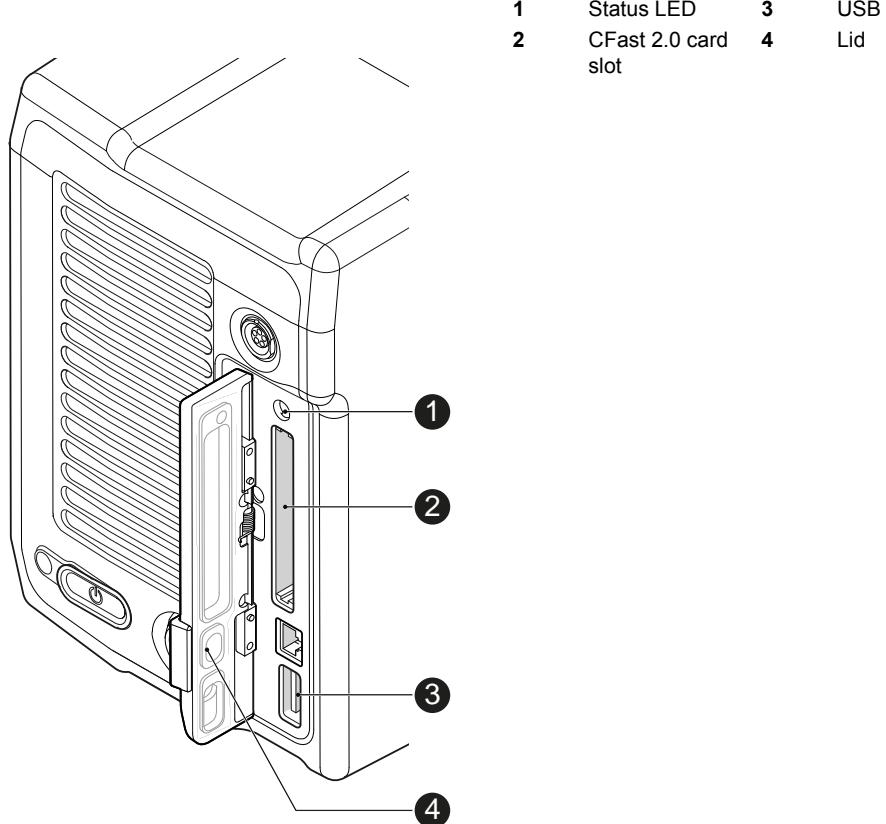
A connector for external accessories, carrying two CAN buses and accessory power output at camera voltage level (1.0 A max.). With an external adapter, R/S functionality is supported.

ETH (10-pin LEMO)

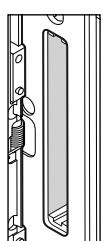
Standard Ethernet connectors don't deliver the durability and reliability required by ARRI, so ALEXA Mini uses a 10-pin LEMO connector. A special cable, available from ARRI (model KC-153-S), is required to connect the Ethernet connector to a standard RJ-45 Ethernet connector.

Note: The RCU-4 cannot be used with an ALEXA Mini.

7.3 Media panel

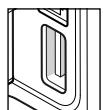


Card (CFast 2.0)



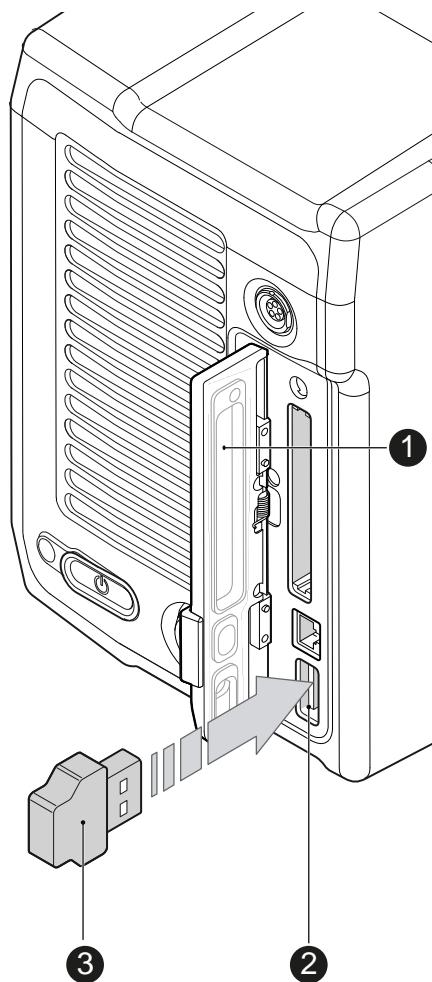
Storage media slot for CFast 2.0 recording cards.

USB



Interface for USB memory sticks with FAT file system. Can also be used to charge USB devices. Supplies 5V with a maximum current of 500mA.

7.3.1 Preparing a USB memory stick



USB memory sticks for the ALEXA Mini must have a specific folder structure which can be created with the camera.

1. To prepare a USB memory stick: Open the media lid (1).
2. Connect a FAT-formatted USB stick (3) to the camera (2).
3. From the home screen, navigate to *Menu > Media > Prepare USB medium*.
4. Press *CONFIRM* to prepare the folder structure.
5. The USB stick (3) is now ready for use with the camera.
6. **Note:** To avoid file corruption, never remove the USB stick during write access.
7. You can remove the stick from the camera without unmounting.

7.3.2 Changing a CFast 2.0 card

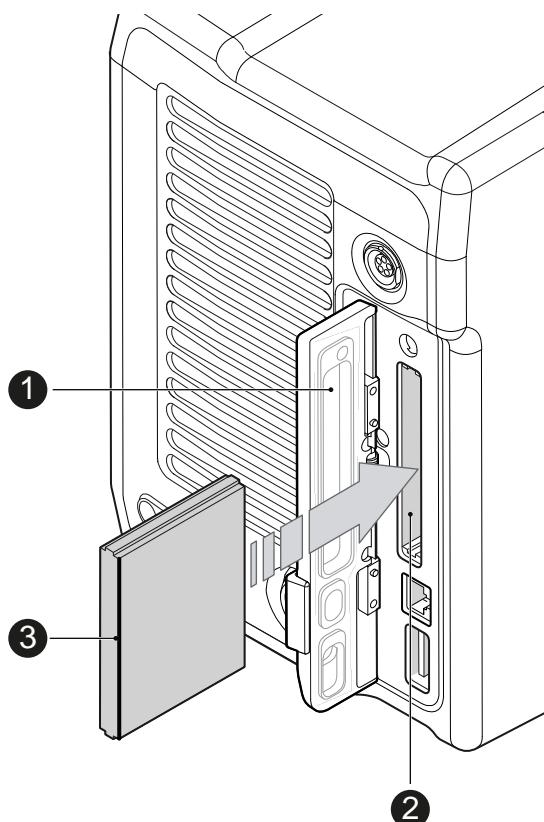
NOTICE

ALEXA Mini does not accept ALEXA-formatted CFAST 2.0 cards, and vice versa.

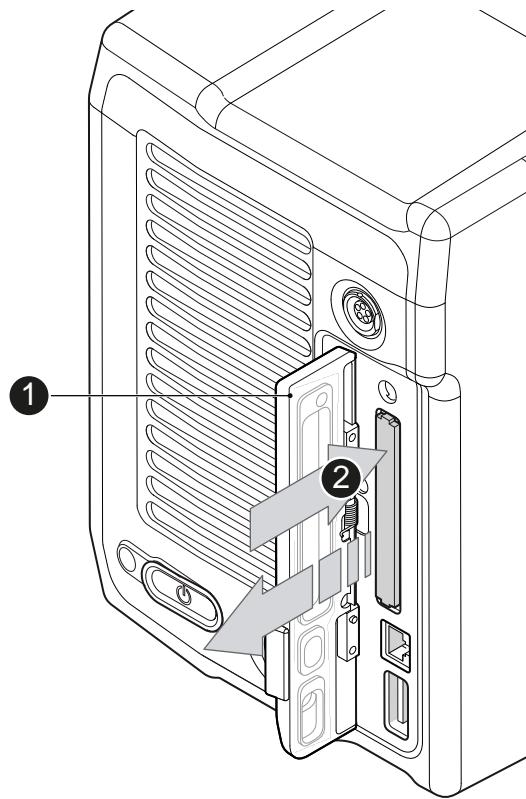
Before using a CFAST 2.0 card with ALEXA Mini, you **must** erase it in-camera to create the required file system.

Avoid damage to the contacts of both camera and card. Always insert cards as described in this document.

Never change memory cards when recording - this may damage the recorded clip.

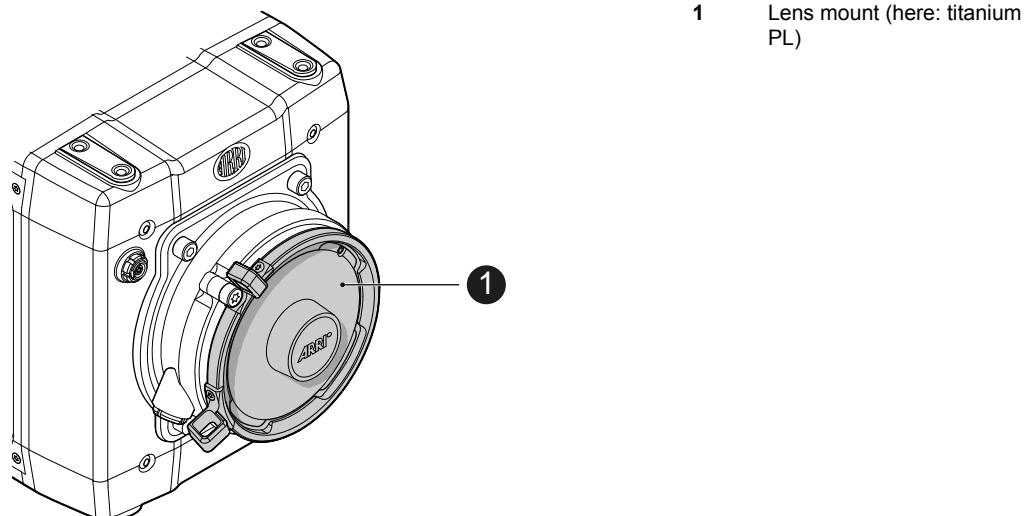


1. Open the lid (1).
2. Align the card's positive edge (3) facing the camera rear.
3. With the contact pins first, gently insert the card, until it audibly locks (2).
4. Gently close the lid (1). **Never** force it closed on an unlocked card.



5. **For card removal:** Open the lid (1).
6. Push the card in until it audibly unlocks (2).
7. Remove the card.

8 Lens mount/filters



Cooke /i support

The camera supports the Cooke /i protocol for lenses running FW versions according to the following table.

Lens type	FW version
S4 /i Prime lens (10-bit)	0.29 or higher
S4 /i Prime lens (12 bit)	0.39 or higher
S4 /i Zoom lens (10 bit)	1.29 or higher
S4 /i Zoom lens (12 bit)	1.39 or higher

The FW version can be retrieved from the lens with the *Cooke Viewer Lens Display* program. For detailed info, please contact Cooke Optics directly.

8.1 ND filter module

NOTICE

ALEXA Mini uses FSND (Full Spectrum Neutral Density) filters, which are linear across the full spectrum of the camera sensor. This prevents artifacts from infrared wavelengths and the need for additional IR filters.

The camera contains an internal ND filter module, consisting of ND 0 (Clear), 0.6, 1.2 and 2.1 filters. The filters can be operated via user buttons, MVF-1, web remote, or WCU-4.

8.2 Changing a lens

NOTICE

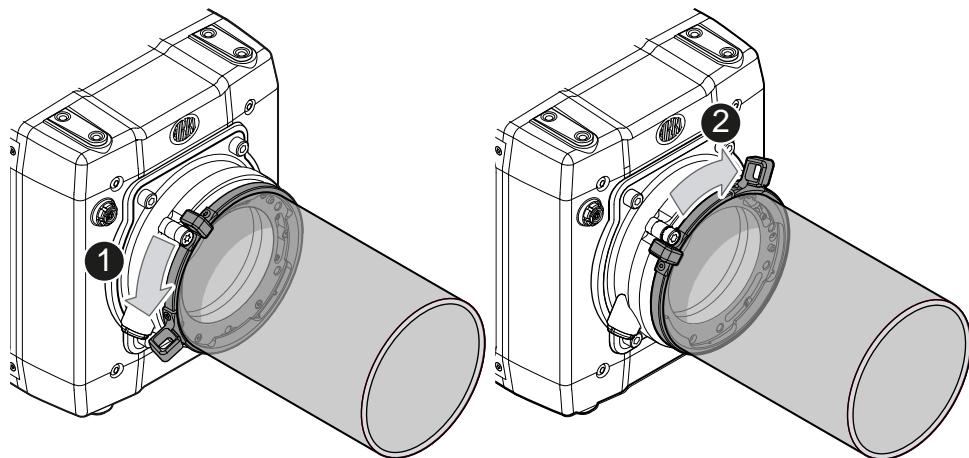
Protect the sensor: Always keep a lens or protective cap on the empty lens mount.

Change lenses in dry, dust-free environments only.

Never exceed the maximum lens dimensions.

Have every lens properly shimmed as prescribed by the manufacturer.

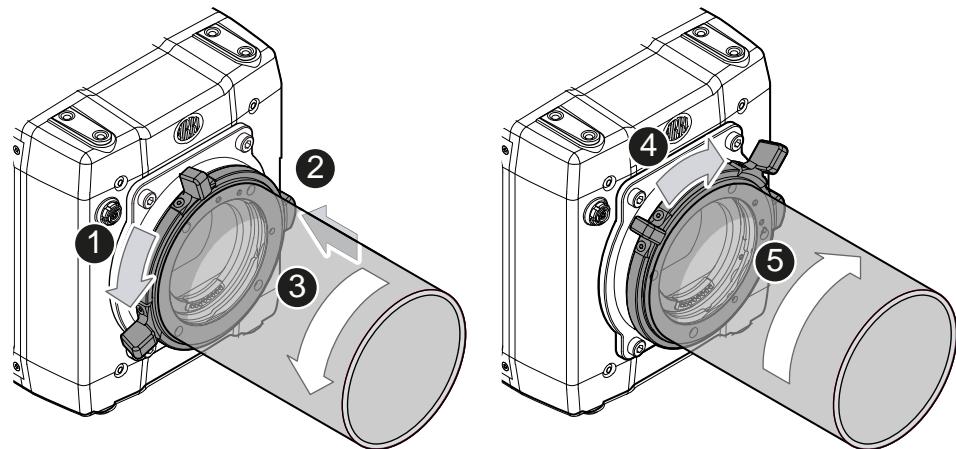
PL mount



Note: Please use a lens support system for PL lenses above 3 kg/6.6 lbs.

1. Observe maximum lens dimensions (see User Manual).
2. Unlock the lens mount counter-clockwise (1) and remove the lens or cap.
3. **Never** touch the sensor.
4. Either: Mount the next lens and lock (2) the lens mount clockwise.
5. Or: Always cap and lock (2) an empty lens mount clockwise.

EF mount



Note: Please use a lens support system for EF lenses above 3 kg/6.6 lbs.

1. Observe maximum lens dimensions.
2. Turn the lever counter-clockwise (1) to unlock the mount.
3. Either: Remove the cap.
4. Or: Press and hold the button (2) to unlock the lens.
5. Turn the lens (3) counter-clockwise, then remove it.
6. **Never** touch the sensor.
7. Either: Mount the next lens:
 - o Align the dots of both lens and lens mount.
 - o Push the lens into the mount.
 - o Turn the lens clockwise (5) until the bayonet locks.
 - o Turn the lever clockwise (4) to tighten the lens to the lens mount.
8. Or: Always cap the empty lens mount.

8.3 Lens control

Control of lens iris is possible with ENG PL mount and EF lenses. You can control the iris manually, via user button, or via auto iris.

8.3.1 Manual iris adjustment

HOME > EI > IRIS



Pressing the wheel (1) changes the step size between full and sub-stops (2). **Note:** Sub-stop precision depends on the lens type and is automatically set by the camera.



On the live screen, you can activate and deactivate iris adjustment (1) by short-pressing the lower round (not oval!) button (2). Keeping the button pressed (2) activates iris adjustment until it is released. (2). **Note:** Depending on the image flip, the round buttons may appear on the right.

8.3.2 Iris control via user button

MENU > User button > Button X

For iris control, assign one user button each with *Open Iris* and *Close Iris*. See "MENU > User buttons".

8.3.3 Auto iris

HOME > EI > IRIS > OPTIONS



Via jogwheel (1), you can define the auto iris behavior.

Auto iris mode: Defines the iris calculation:

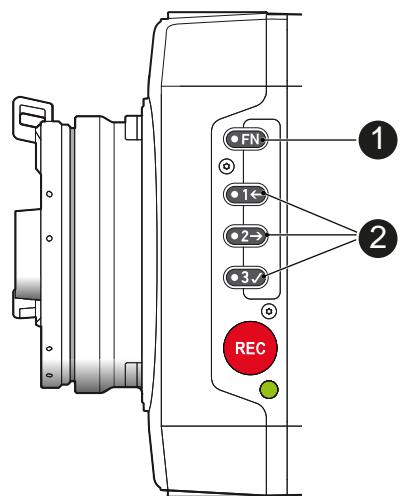
- *Integral:* Iris is calculated based on full image content.
- *Center:* Iris is calculated with higher priority on image center.

Auto iris offset: Corrects the auto iris calculation result by up to +/- 3 stops in 1/3 stop step sizes. Activate via user button.

9 Camera controls

In this chapter the camera controls of the Alexa Mini are shown.

9.1 Function button FN and camera buttons 1-3



Camera buttons as user buttons:

By default, the camera buttons 1 to 3 function as user buttons.

1. In the camera menu (MENU > User buttons > Camera user buttons), set the desired functions to the user buttons.

The functions are assigned to the user buttons.

2. Press a user button (2) to trigger its function.

Depending on the assigned user button function, the LED reflects the function state.

Camera buttons to control standard camera functions:

- ▶ Press and hold the function button (1); then press a camera button (2). If a simultaneous press cannot be performed, the FN button can be pressed twice within 0.5 seconds to bring the camera buttons into function selection mode for 2 seconds. During these two seconds, pressing a camera button will de-/activate its assigned function.

The LED of the FN button reflects that a standard function is active. An LED on each button reflects the functional status.

The following standard functions can be triggered:

Function button & camera button	Function
1	Toggles the overlay menu of the Live view. In the overlay menu, the camera buttons control the following functions:

Function button & camera button	Function									
	User button	Function								
	1	Select Backward								
	2	Select Forward								
	3	Confirm								
2		<p>Arms the card erase. To trigger the card erase, press user button 3 twice.</p> <p>Any other button can be pressed to cancel the action. After the erase, the overlay can be reset by pressing any button.</p>								
3		<p>Starts/stops the playback. During playback, the camera buttons control the following functions:</p> <table border="1"> <thead> <tr> <th>User button</th><th>Function</th></tr> </thead> <tbody> <tr> <td>1</td><td>Skip Backward</td></tr> <tr> <td>2</td><td>Skip Forward</td></tr> <tr> <td>3</td><td>Play/Pause</td></tr> </tbody> </table>	User button	Function	1	Skip Backward	2	Skip Forward	3	Play/Pause
User button	Function									
1	Skip Backward									
2	Skip Forward									
3	Play/Pause									

Overlay menu

The overlay menu allows the user to control the basic camera parameters FPS, Shutter, Exposure Index, ND filter and WB.

It can be activated and deactivated by pressing the buttons FN+1.

The overlay menu is active on the EVF and monitor images of the MVF-1, as well on the SDI out (if SDI processing is activated).

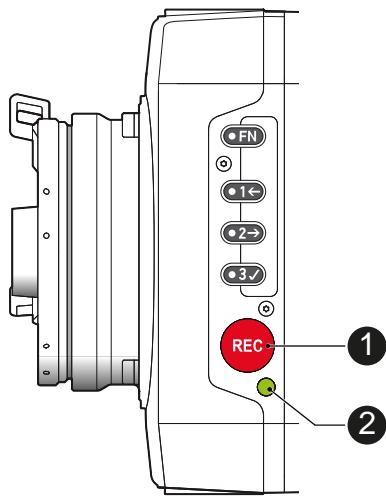
See chapter "Overlay menu" for detailed info.

9.2 Recording button

NOTICE

Pressing a recording button returns the MVF-1 user interface to the home screen and disables the menu access.

Recording also disables the home screen buttons for *FPS*, *TC*, *Shutter*, and *Look* settings.



To start recording:

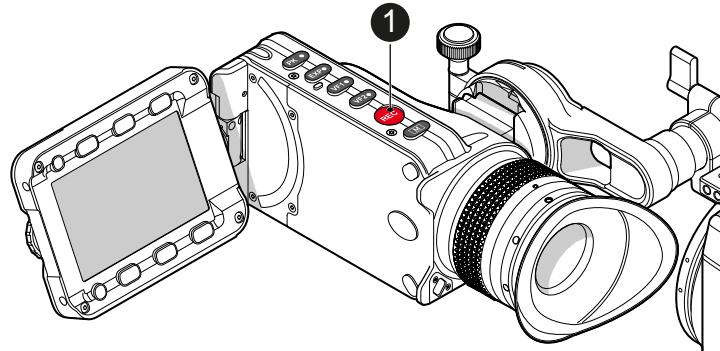
Prerequisite: The camera is prepared.

1. Preset all buttons.
2. Press *REC* (1) on the left camera side.

The camera starts recording. The recording status LED (2) reflects the recording status:

Recording status LED (2) is...	Camera is...
solid green	ready for recording
solid red	recording
flashing red	Recording starts/stops
off	not ready for recording. Check if the CFast 2.0 card is valid. If not: Insert a valid CFast 2.0 card. See page 52.
flashing green/red alternately	not ready for recording due to an error.

3. **For mounted MVF-1 only:** Press REC (1) on the MVF-1:



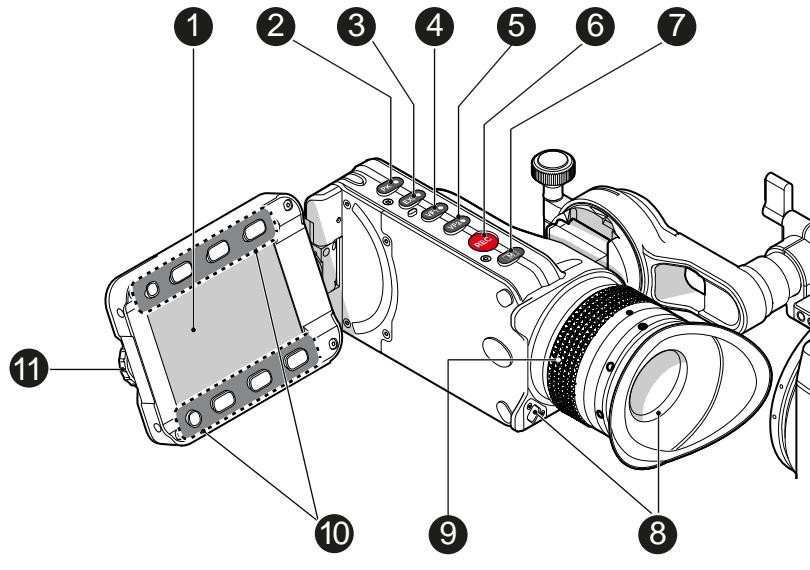
NOTICE

Never change memory cards when recording - this may damage the recorded clip.

NOTICE

Connecting or disconnecting devices or cables while recording can disturb the audio/image signal due to static electricity.

10 MVF-1 controls



- | | | | |
|----------|----------------------|-----------|------------------|
| 1 | Monitor (Live & GUI) | 7 | Monitor button |
| 2 | Peaking button | 8 | Proximity sensor |
| 3 | Exposure tool button | 9 | Diopter control |
| 4 | VF-1 user button | 10 | Screen buttons |
| 5 | VF-2 user button | 11 | Jogwheel |
| 6 | Recording button | | |

Proximity sensor

This infrared sensor automatically deactivates the MVF-1's internal OLED panel when you withdraw your eye. The sensor is placed either on the bottom left-hand side of the viewfinder (Generation 1), or it is integrated in the eye cup (Generation 2).

The Alexa Mini MVF-1 contains the generation 2 proximity sensor.

NOTICE

To avoid hardware damage, always keep the sensor unobstructed.

10.1 EVF image/monitor



When you look through the eyepiece, the proximity sensor (3) activates the EVF display (2).

You can add status data from the home screen (1) to the MVF-1 image (2).

If activated, overlays around the EVF image show essential camera, audio, and recording statuses.

You can modify/deactivate these status bars via the *EVF overlays* and *EVF status components* menu. For more details, see the User manual.

Note: In *Overlay mode* (see below), all status bars appear **on** the active MVF-1 image.



- | | | | |
|---|---|----|---|
| 1 | Sensor FPS | 10 | Camera status |
| 2 | SHUTTER value | 11 | Reel and clip info |
| 3 | <i>EI</i> Exposure index | 12 | BAT level/status |
| 4 | Internal <i>ND</i> filter | 13 | Alert and temperature status |
| 5 | WB White balance | 14 | Camera settings icon (Recording resolution, Rec gamma, S16 (if S16 mode is active), Iris, Fan status, Framegrab, Camera lock) |
| 6 | Icons for USB status, lens motor calibration request, WiFi status | 15 | EVF image status (EVF gamma, EVF exposure tool, EVF peaking) |
| 7 | Audio status | 16 | LDS info |
| 8 | TC Timecode (if enabled) | 17 | Framelines |
| 9 | CARD capacity/status | 18 | Center mark (here: cross) |



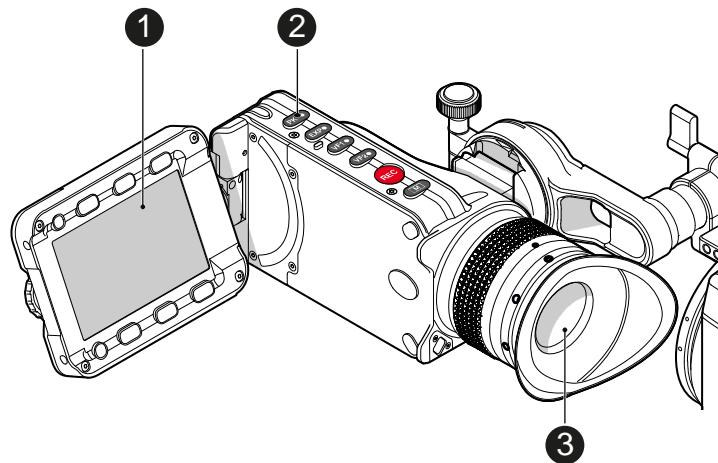
1 Safe mode

In **Safe mode**, all status bars appear in a black frame (1) **outside** the active MVF-1 image.

Note: If surround view is active, the area is marked by a surround mask.

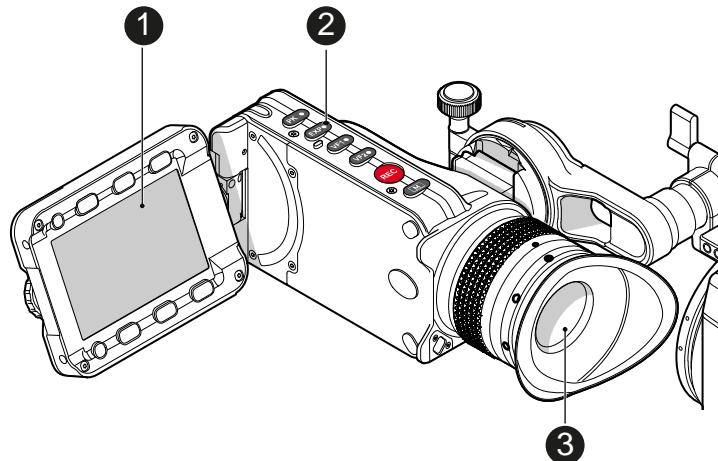
10.2 MVF-1 buttons

10.2.1 PK peaking button



1. To activate peaking on monitor (1) and MVF-1 (3): Press **PK** (2).
2. Peaking highlights the image parts that are in focus for better focus judgement.
3. For **PK** settings: Go to *MENU > Monitoring > EVF/Monitor > Peaking*.

10.2.2 EXP exposure tool button



The *EXP* button (2) activates the set exposure tool on the monitor (1) and EVF image (3). Use the tool for evaluation of the image exposure levels. An activated tool lights up the button (2).

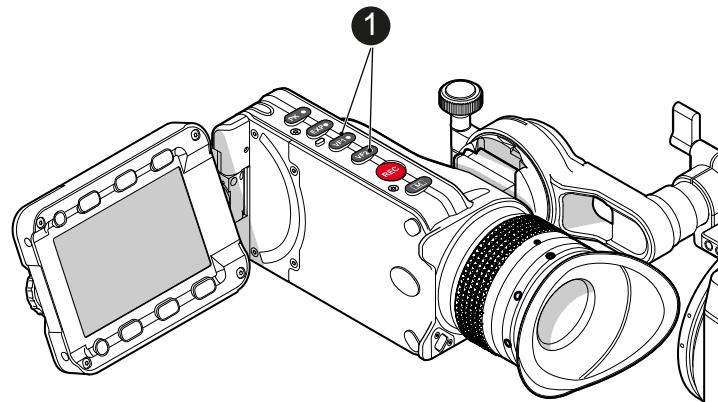
For *EXP* setting: Go to *MENU > Monitoring > Exposure tools*.

In *Zebra* mode, the tool overlays up to two luminance ranges with diagonal stripes. *High zebra* ranges above, *Mid zebra* around the user-defined luminance value.

False color mode overlays predefined luminance ranges as follows:

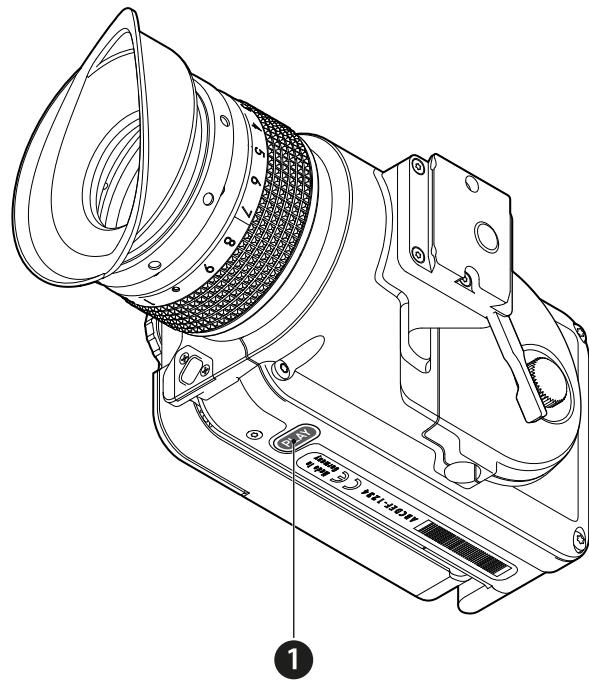
Luminance range	Signal level	Color
White clipping	100 to 99 %	Red
Just below white clipping	99 to 97 %	Yellow
One stop over medium gray (Caucasian skin)	56 to 52 %	Pink
18 % medium gray	42 to 38 %	Green
Just above black clipping	4.0 to 2.5 %	Blue
Black clipping	2.5 to 0.0 %	Purple

10.2.3 VF1 & VF2 user buttons



- ▶ Via the camera menu, you can assign a function to both VF-1 and VF-2 buttons (1). For details, see the user manual.

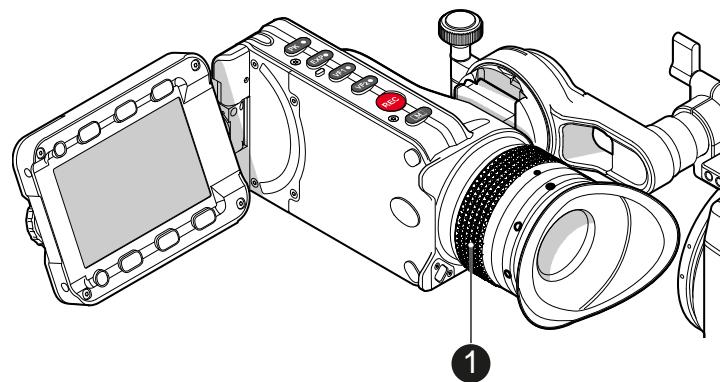
10.2.4 PLAY button



1. Press *PLAY* (1) for one second to see the last clip of the active CFast 2.0 card.
2. To leave playback: Press *PLAY* (1) for one second.
3. Or: Press the EXIT screen button.
4. To select other clips, use the on-screen navigation. For details, see the User Manual.

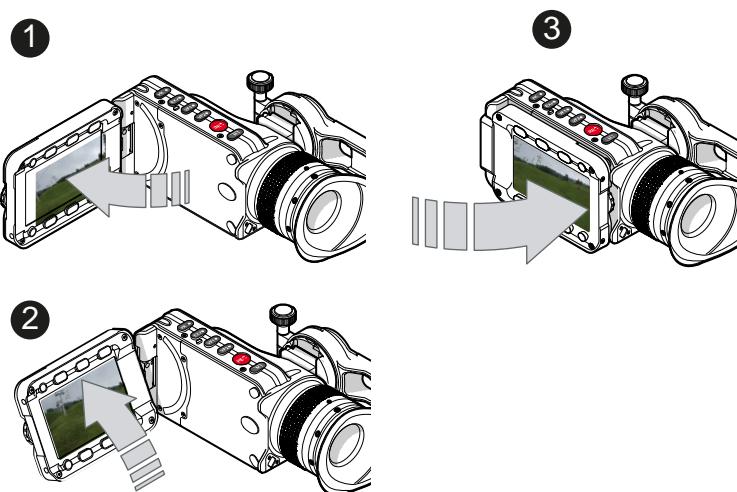
10.2.4.1 Playback screen controls

10.3 Diopter adjustment



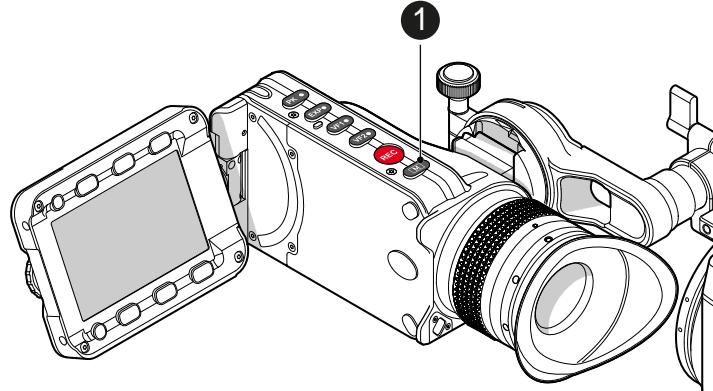
- Twist the ring left or right for diopter adjustment (1).

10.4 Adjusting the monitor

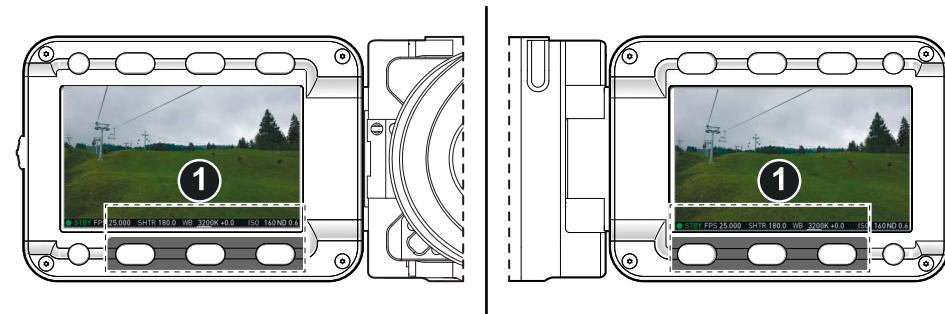


- Fold (1), swivel (2) and flip (3) the monitor according to your needs.

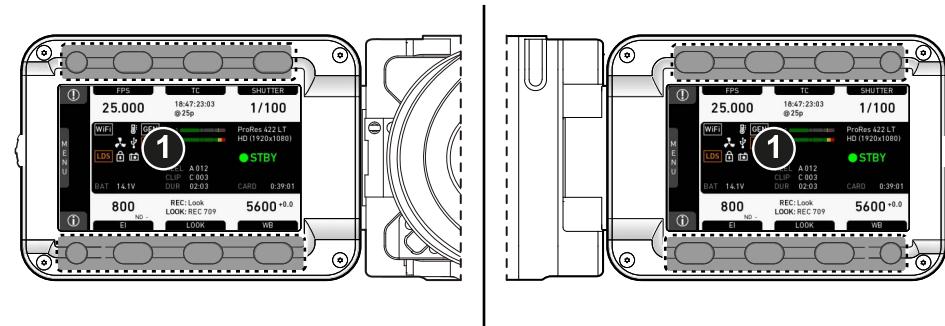
10.5 Changing the monitor mode



1. To change the monitor mode between live view and user interface: Press *M* (1).



2. In live mode, toggle the status bar content (1) via the lower buttons.



3. Via Menu > Monitoring > EVF/Monitor > Settings > Monitor flip mode, you can disable the location sensor that automatically flips the user interface to match a left- or right-sided monitor position (3).

10.6 Live monitor

Below the camera live image, the live screen shows image and camera status. You can toggle the bar's content via the left or right oval button below. The center oval button returns you to the main status bar.



- | | | | |
|----------|--|-----------|-------------------------------|
| 1 | Surround mask | 6 | Exposure index |
| 2 | Camera temperature warning (warning=red) | 7 | White balance |
| 3 | <i>ALERT</i> message | 8 | Shutter value (° or sec) |
| 4 | Center mark | 9 | Sensor frame rate |
| 5 | Active ND filter | 10 | Camera status (here: Standby) |

Surround mask

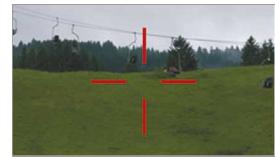
This grayed-out frame marks all non-recorded parts of the sensor image. Can be deactivated.

If surround view is active, the non-recorded area is masked. Style options are: Black line, colored line, or semitransparent mask (as shown here).



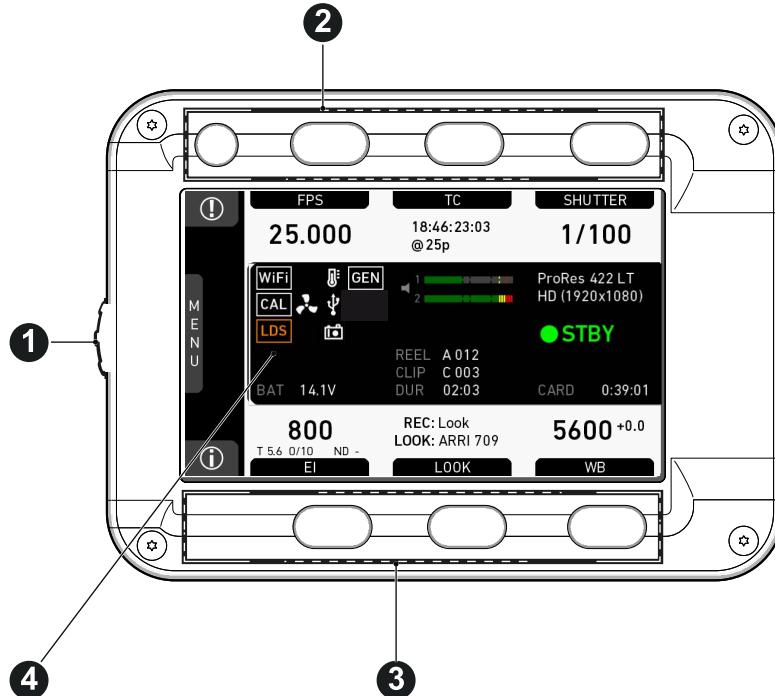
Center mark

Marks the image center. Can be set to *Off*, *Cross*, *Dot* or *Small Dot*.



10.7 User monitor

Screen buttons and jogwheel



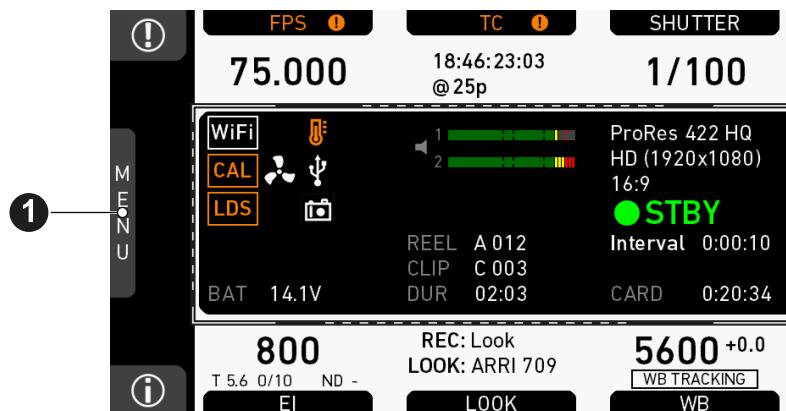
There are eight screen buttons, four above (2) and four below (3) the display (4). Their function depends on the screen content (4) and is labeled directly above or below each button.

Unlabeled buttons have no function for that screen. A grayed-out label means: function currently not available. Via jogwheel (1), you can:

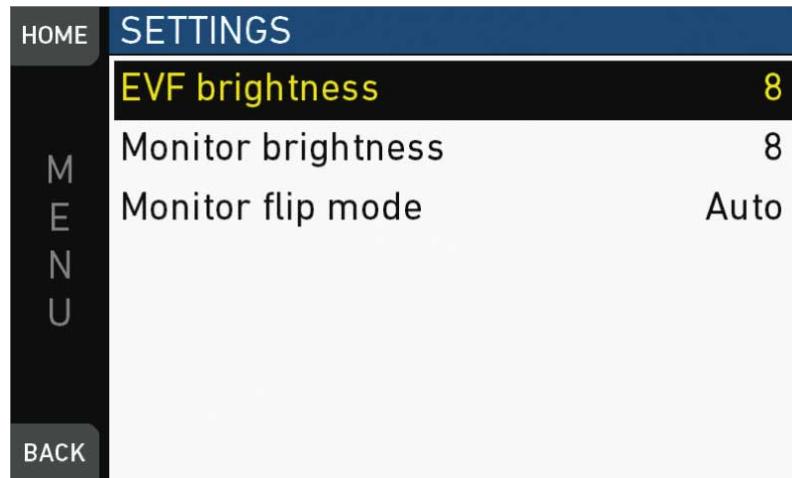
- Scroll or navigate through lists and menus.
- Change values (by scrolling up or down).
- Confirm settings (by pressing the wheel).

On the home screen (4), pressing the jogwheel (1) opens the camera menu.

10.8 Adjusting the monitor brightness



1. Open the home screen.
2. Via jogwheel (1), open *MENU > Monitoring > EVF/Monitor > Settings*.



3. Scroll to *Monitor brightness*.
4. Press the jogwheel.
5. Adjust the brightness by scrolling to the required value: 1 (= minimum) to 10 (= maximum).
6. Press *HOME*.

11 Overlay menu



The overlay menu offers a reduced set of camera parameters for adjustment. When activated, it is visible in the top section of the image on the MVF-1 monitor and EVF and on any SDI output which has SDI processing activated. The overlay menu is a quick way to change the following camera settings:

- Sensor FPS
- Shutter (Shutter Angle / Exposure Time)
- Exposure Index
- ND filter
- White Balance

Sensor FPS, Shutter and White Balance cannot be changed manually, but in the range of their user predefined lists. ND filter is changed instantly and requires no additional confirmation step.

A white frame marks the selected parameter. A yellow font means it is in edit mode and can be changed.



For detailed instructions on how to activate and operate the overlay menu, see the following sections.

Camera buttons

- 1 Activate the overlay menu by pressing FN + 1.
- 2 Select a parameter with buttons 1 or 2.
- 3 Start editing the parameter by pressing button 3.
- 4 Select the new parameter value with buttons 1 or 2.
- 5 Confirm the new value by pressing button 3.
- 6 If required, repeat steps 2-5 for other parameters.
- 7 Exit the overlay menu by pressing FN + 1.

MVF-1

When the overlay menu is activated, the jogwheel of the MVF-1 can be used to select, edit and confirm parameter changes.

12 Web remote

ALEXA Mini has a web remote function for full remote control of the camera with a web browser. It requires a connection to the camera via WiFi or Ethernet (with ALEXA Ethernet/RJ-45 Cable KC-153-S, K2.72021.0).

By default, WiFi is active. If WiFi is inactive, enable WiFi via the MVF-1, by navigating to *MENU>System*. Without the MVF-1, the web remote must first be used via a cabled Ethernet connection to enable WiFi.

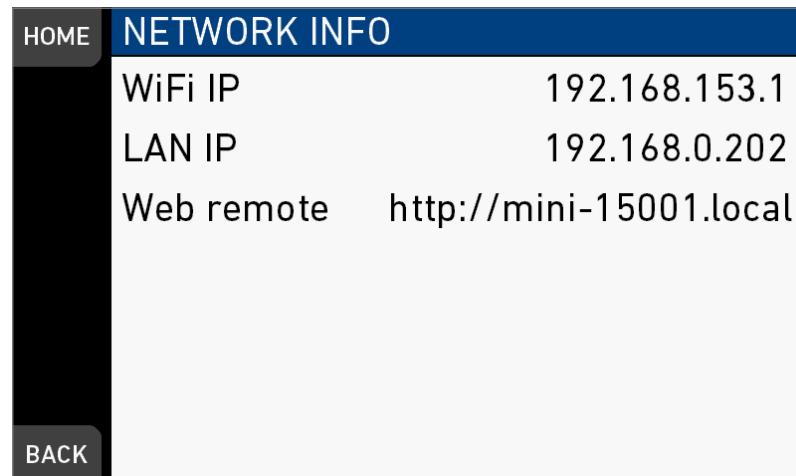
The web remote has been tested with the following platforms and browsers:

Desktop browsers	Google Chrome 45 Mozilla Firefox 44
iOS	Safari 9.2.1
Android	Google Chrome Mobile 45

Open a web browser and enter the URL: <http://mini-xxxxx.local> (replace xxxx with the 5-digit serial number of your camera).

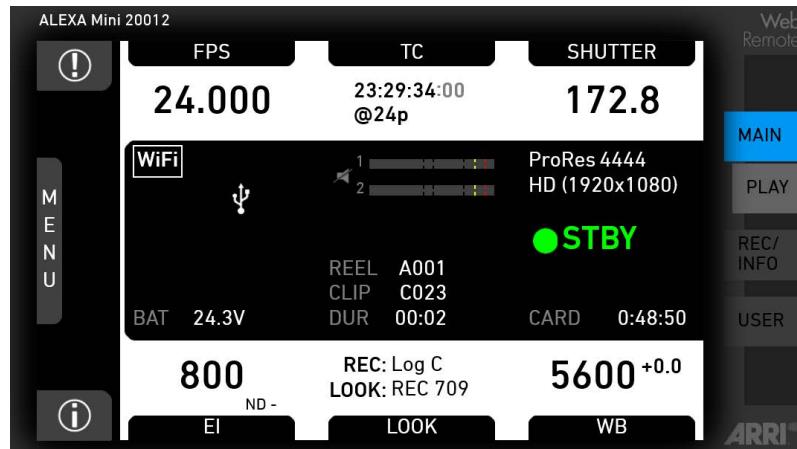
NOTICE

To use the web remote function via this URL, the device must support zero-configuration networking (zeroconf), e.g. through Apple Bonjour. Without zeroconf, the webremote can be reached via the IP address of the network (WiFi or LAN IP). The WiFi IP is fixed to 192.168.153.1. The LAN IP can be either assigned from a DHCP server or configured manually, and can be checked with an MVF-1 via the **INFO > Network info** screen.

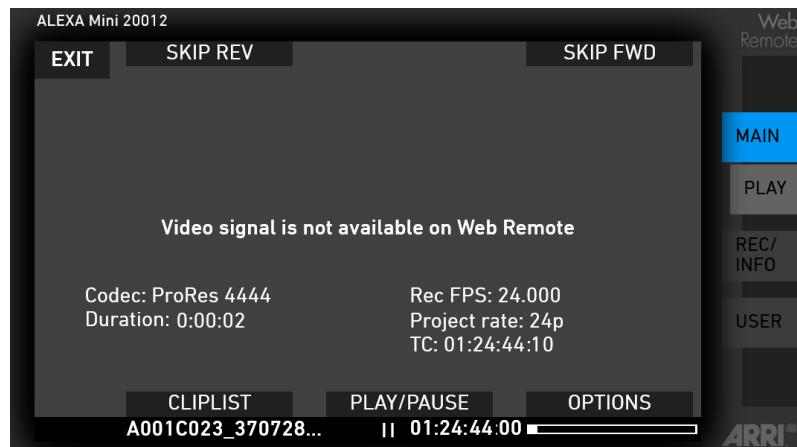


MAIN, PLAY, REC INFO and USER

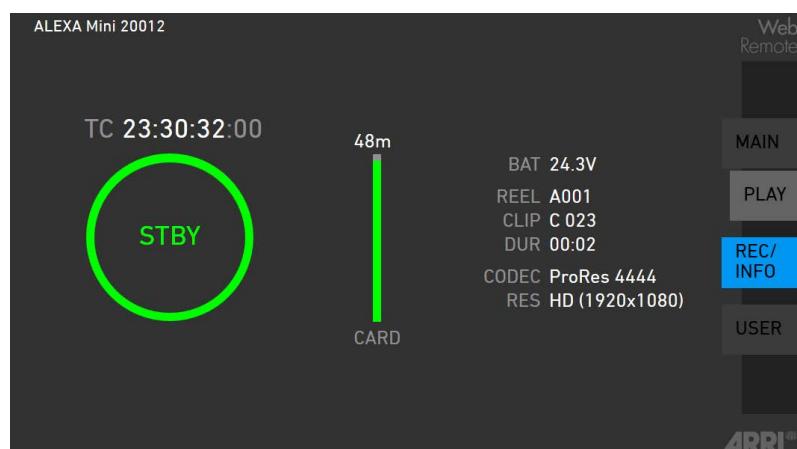
Web remote is divided into the following four sections:



MAIN: Contains the same UI as the camera monitor (no live screen). Click/tap the screen button tabs to enter a screen/trigger a function. Menu items can be clicked/tapped directly.

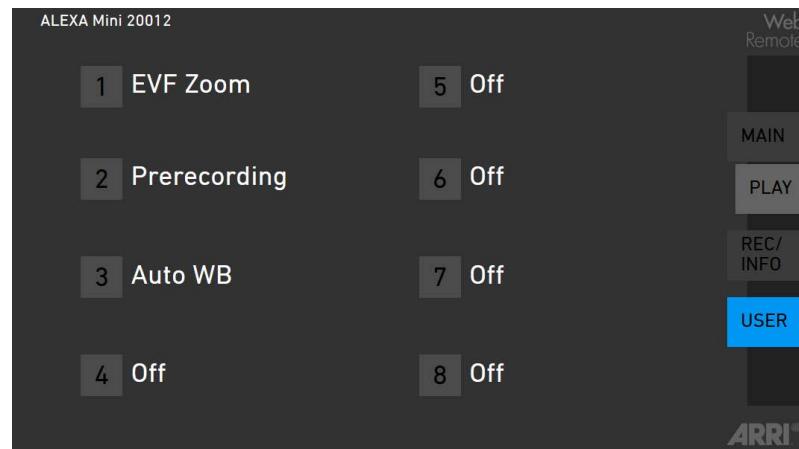


PLAY: Starts playback on the camera. Provides the same controls as the MVF-1, but no video signal.



REC INFO: Contains info on the main recording relevant parameters, plus a *REC* button. Click the big circle icon to start/stop recording.

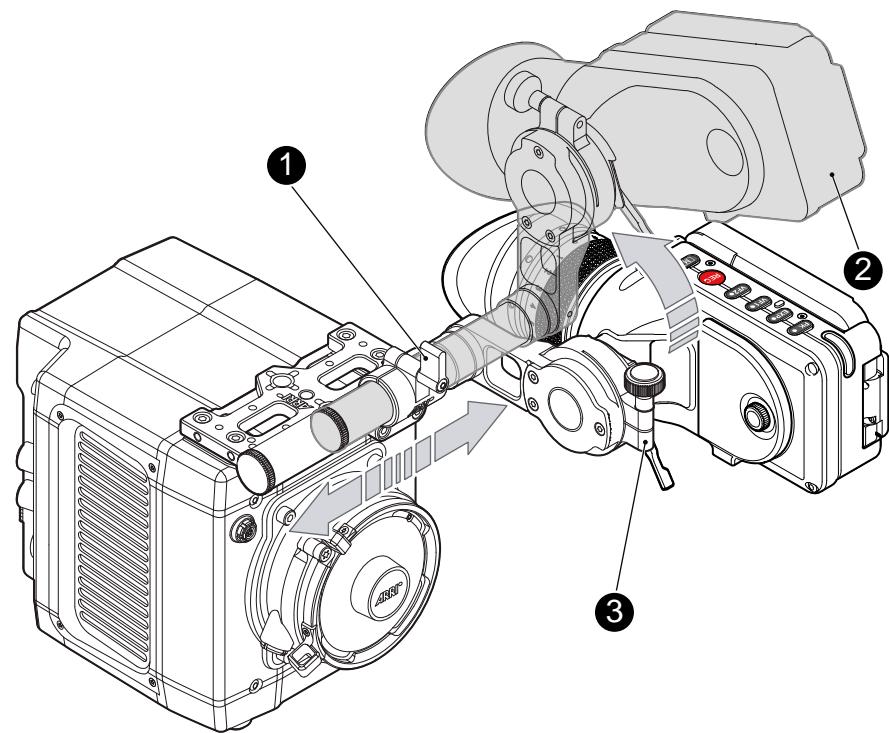
Note: Rec status may respond with a little delay depending on network speed.



USER: Shows configuration of user buttons and allows to trigger them. Press number icons to trigger user buttons.

13 Camera preparation

13.1 Adjusting the MVF-1



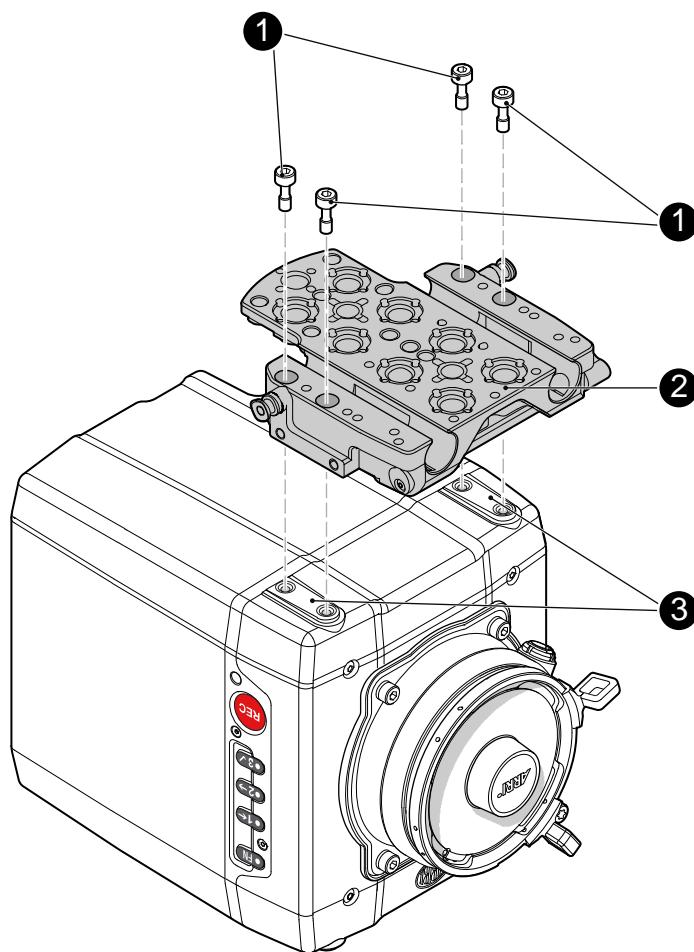
1. Place the camera bottom-down.
2. Slightly loosen the clamp (1) to move the MVF-1 (2) left/right and up/down.
3. Unclamp the hinge (3) to swivel the MVF-1 horizontally.
4. Close all clamps (1, 3) when the MVF-1 is in the desired position (2).

13.2 Mounting to a bridge plate

To mount the camera to a bridge plate, you need the following accessories and tools:

Step	Accessory	Mount to	Tool
1	MAP-2	camera (bottom)	3.0 mm Allen key
2	BAP-4	MAP-2	Flat screwdriver (no coin!)
3	BP-8	BAP-4	

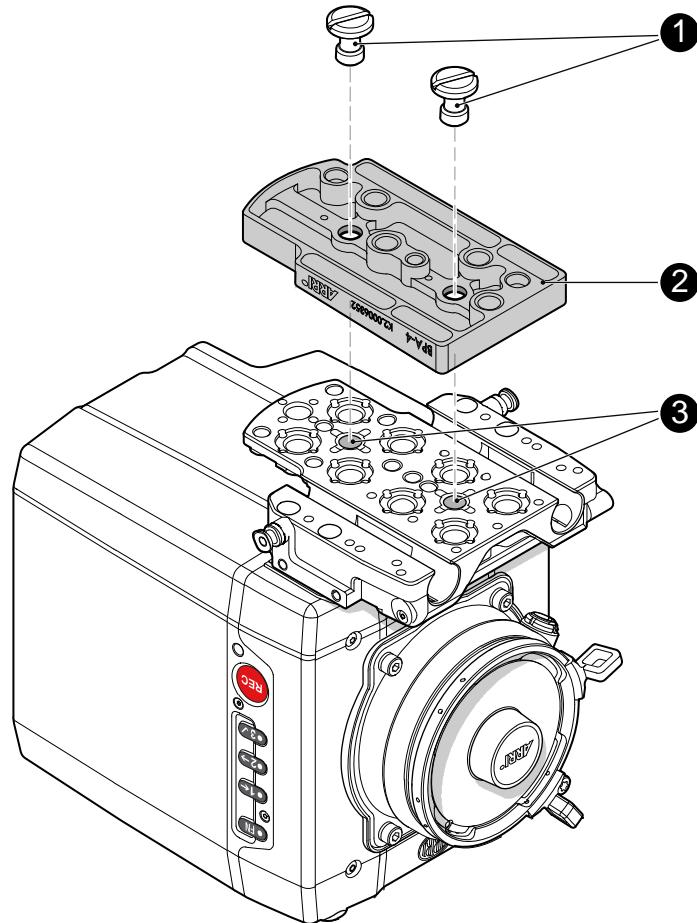
Step 1: Mounting the MAP-2 to the camera



1. Place the camera bottom-up.
2. Place the MAP-2 (2) exactly above the mounting points (3) of the camera.
3. With the Allen key, attach the screws (1) to the camera and tighten.

NOTICE

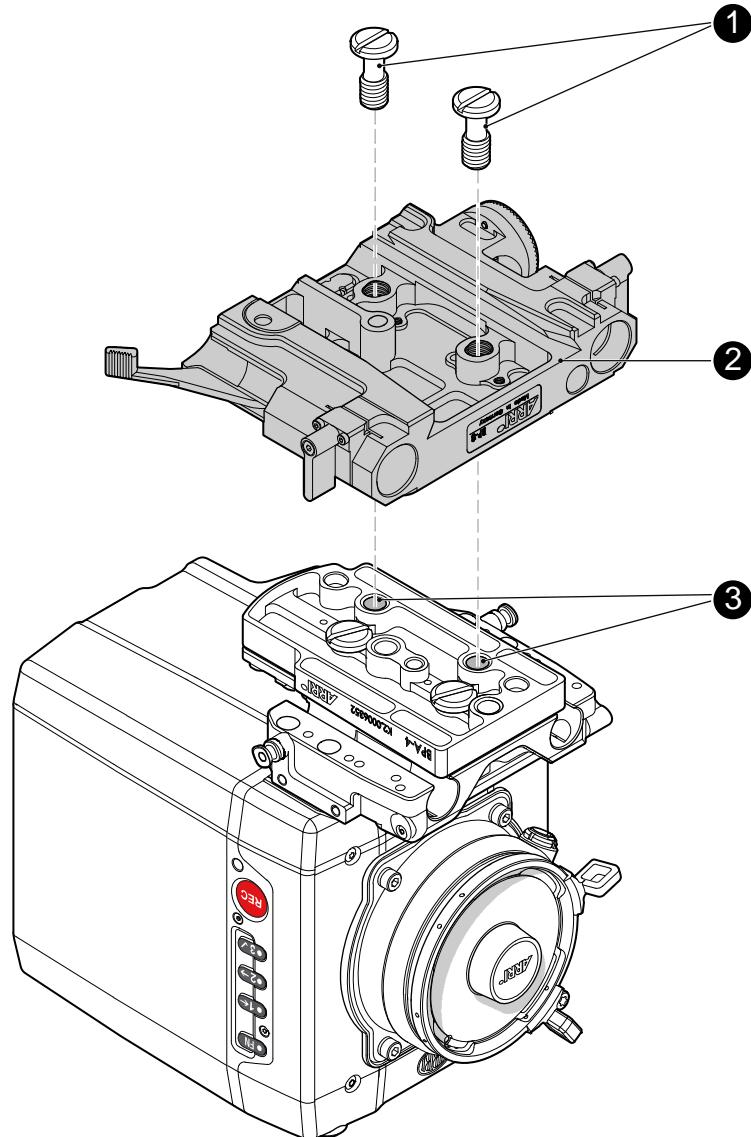
Always ensure a proper lock.

Step 2: Mounting the BAP-4 to the MAP-2

1. Place the BAP-4 (2) exactly above the mounting points (3) of the MAP-2 (2).
2. With a flat screwdriver, attach the screws (1) to the MAP-2 and tighten.

NOTICE

Always use a flat screwdriver to connect the BAP-4 to the MAP-2. Never use a coin. A coin does not deliver enough force to ensure a proper lock.

Step 3: Mounting the BP-8 to the BAP-4

1. Place the BP-8 (2) exactly above the mounting points (3) of the BAP-4 (2).
2. With a flat screwdriver, attach the screws (1) to the BAP-4 and tighten.

NOTICE

Always use a flat screwdriver to connect the BP-8 to the BAP-4. Never use a coin. A coin does not deliver enough force to ensure a proper lock.

14 Assembly and retrofits

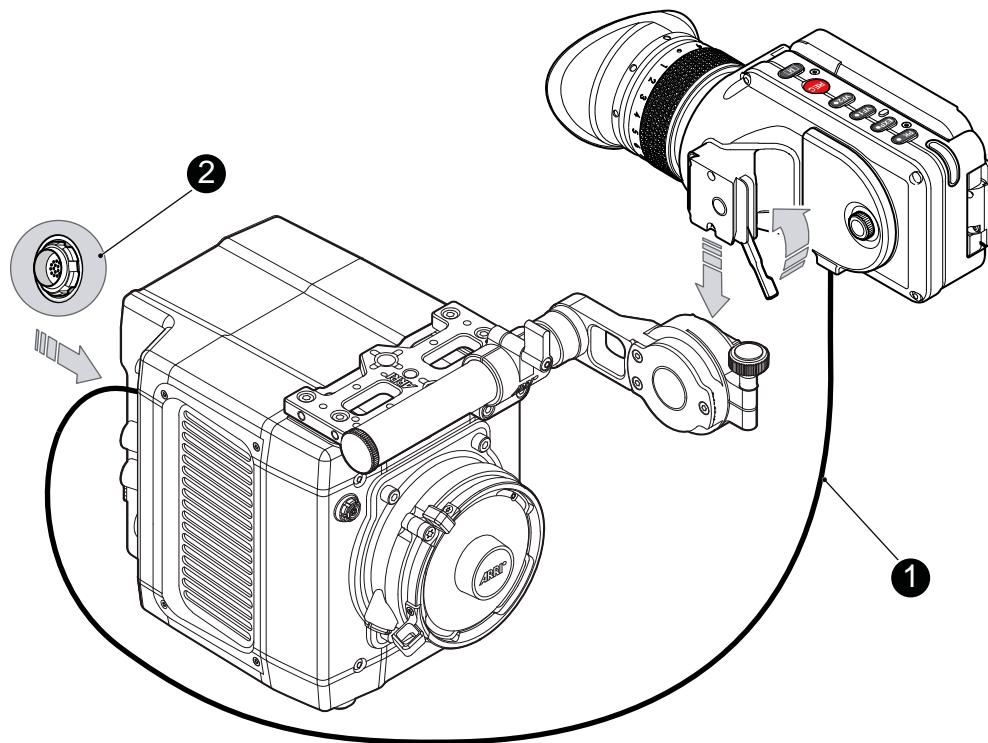
NOTICE

To avoid damage while assembling and retrofitting, always place the camera on a padded, firm, flat and level surface.

Work on an unpowered camera only.

14.1 MVF-1 and EVF cable

Connecting the EVF cable to the camera

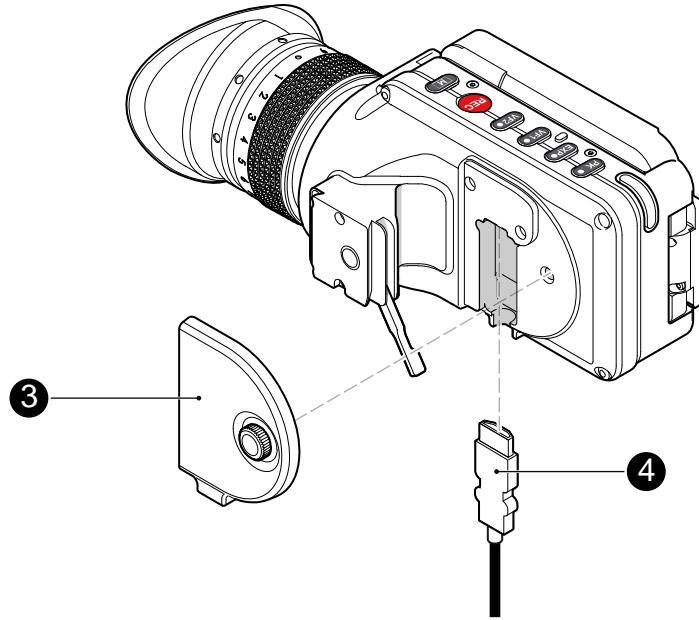


Note: Use original ALEXA Mini-EVF cables only.

- Connect the EVF cable (1) to the camera (16-pin ODU connector (2) on the I/O panel).

▲ CAUTION!

Never try to connect the cable to any other connector on the camera than the EVF connector. This may cause permanent damage to both cable and camera connectors.

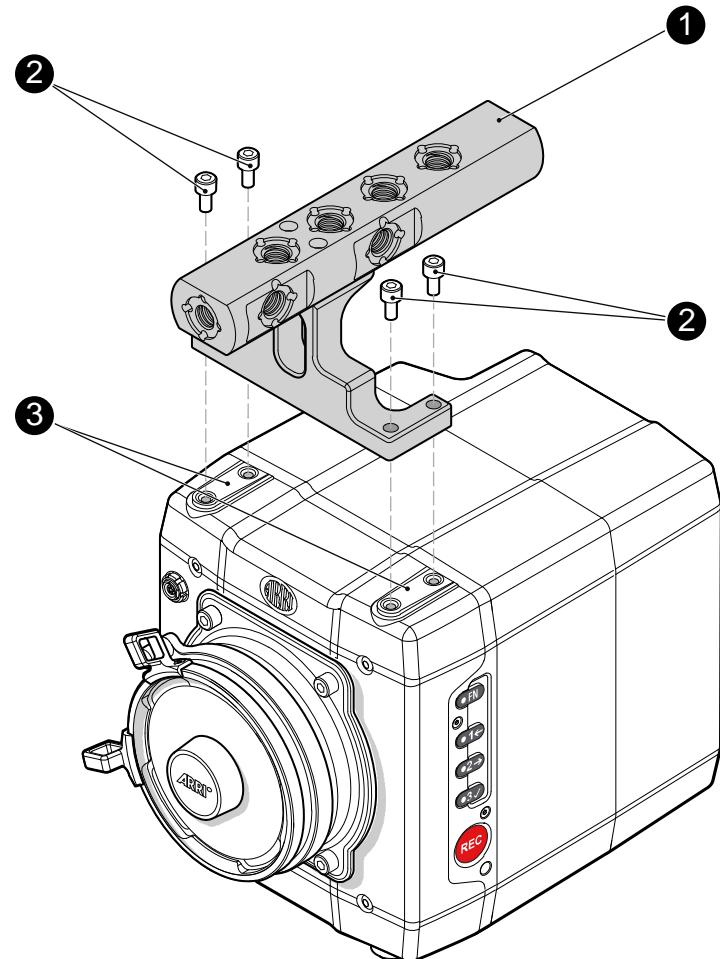
Connecting the EVF cable to the MVF-1

1. Switch off; interrupt the power supply.
Note: Use original ALEXA Mini-EVF cables only.
2. With your fingers, unscrew and remove the MVF-1's lid (1).
3. Connect the cable (2) to the EVF port.
4. Reattach the lid (1).

14.2 Camera handle

Tool needed

- 3.0 mm Allen key

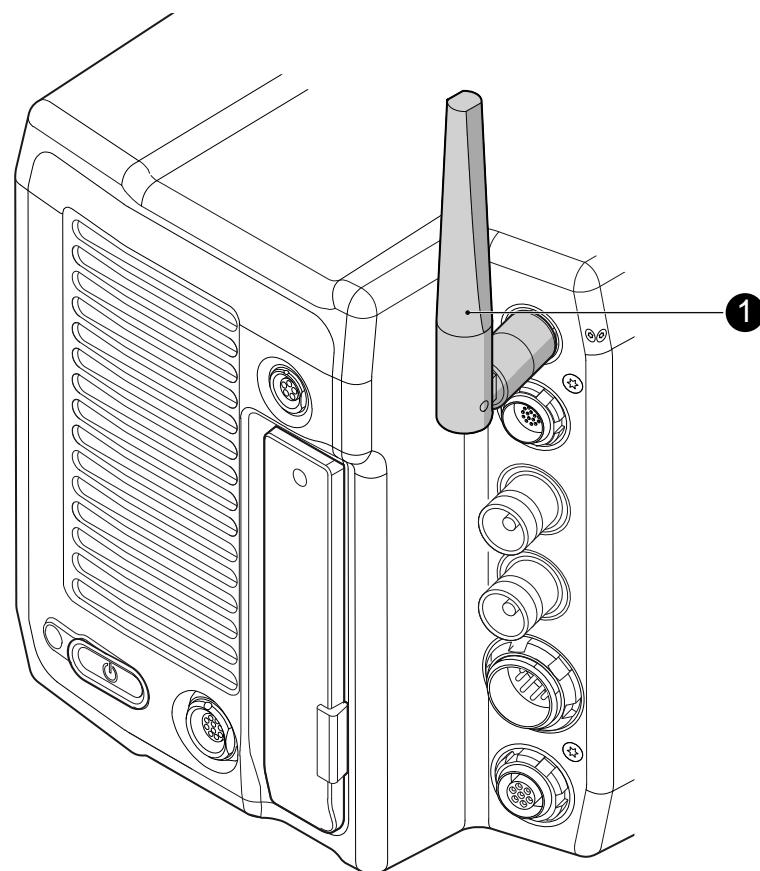


1. Place the camera handle (1) exactly above the mounting points (3) of the camera.
2. With the Allen key, attach the screws (2) to the camera and tighten.

NOTICE

Always ensure a proper lock.

14.3 Antenna



1. With your fingers, thread the antenna for white radio (1) onto the camera.
2. **To unmount:** Unthread the antenna (1) with your fingers.

14.4 Changing a lens mount

⚠ WARNING!

High voltage! Risk of electric shock and fire!

Short circuits may entail lethal injury and damage!

Use original ALEXA-Mini or AMIRA lens mounts only.

Before each lens mount change, always switch the camera off and disconnect all power sources.

Changing the lens mount while the camera is powered may permanently damage the camera and lens mount.

Protect sensor and electrical system: Always store the camera with a lens mount properly installed and capped.

Immediately replace each lens mount after removal.

Change lens mounts in dust-free environment only.

NOTICE

After each lens mount change, always check the back focus of the camera.

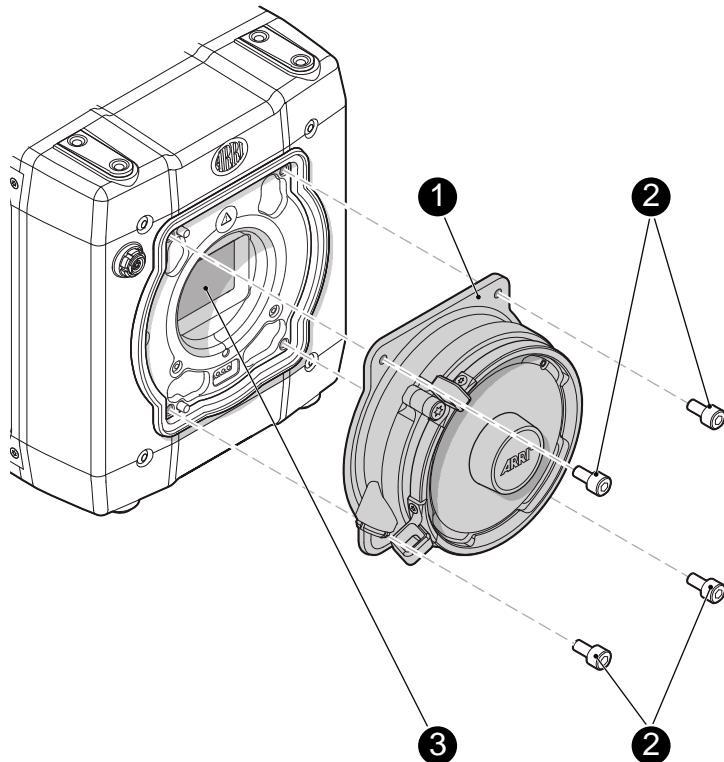
Have the back focus always corrected by properly skilled personnel.

Back focus correction requires special tools and training that meet ARRI guidelines.

For all back focus issues, contact a qualified ARRI Service Center.

Tools and provisions needed

- 3 mm Allen key
- Switch the camera off
- Disconnect all power sources
- Properly cap, disconnect, and store the lens

Deinstallation (here: a PL mount)

1. Perform task with care to protect optical surfaces.
2. Crosswise, loosen all four screws (2) with an Allen key.
3. Carefully remove the mount (1).
4. Store the mount in a case for dust protection.

Note: To protect the sensor (3), immediately install another original ALEXA lens mount.

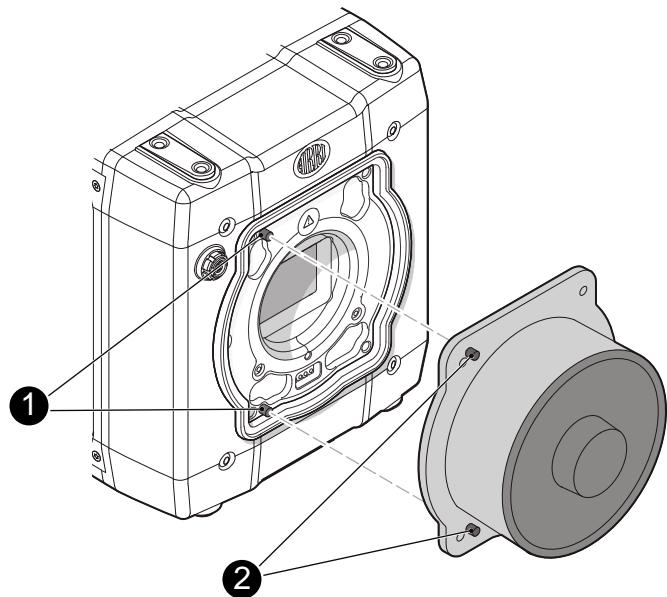
Installation (here: a PL mount)**⚠ WARNING!****Condensation! Risk of electric shock and damage!**

Humidity may ingress due to misinstalled lens mounts!

When installing a lens mount, always align and attach properly; never apply force.

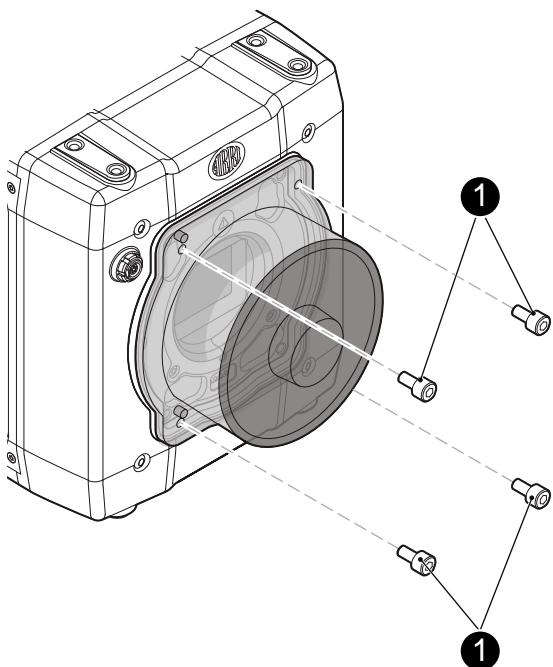
Hand-tighten all screws crosswise before final tightening.

Always tighten crosswise with the prescribed tool.



1. Properly align the two guiding pins (1) for correct lens mount fit (2).

Note: Never apply force, align the guiding pins instead.



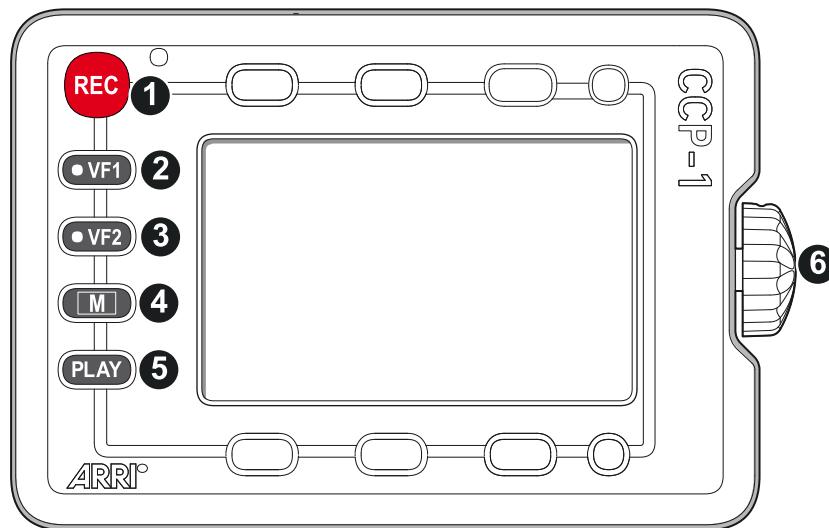
2. Crosswise, hand-tighten all four screws (1).

3. Only then, tighten all screws crosswise with the Allen key.

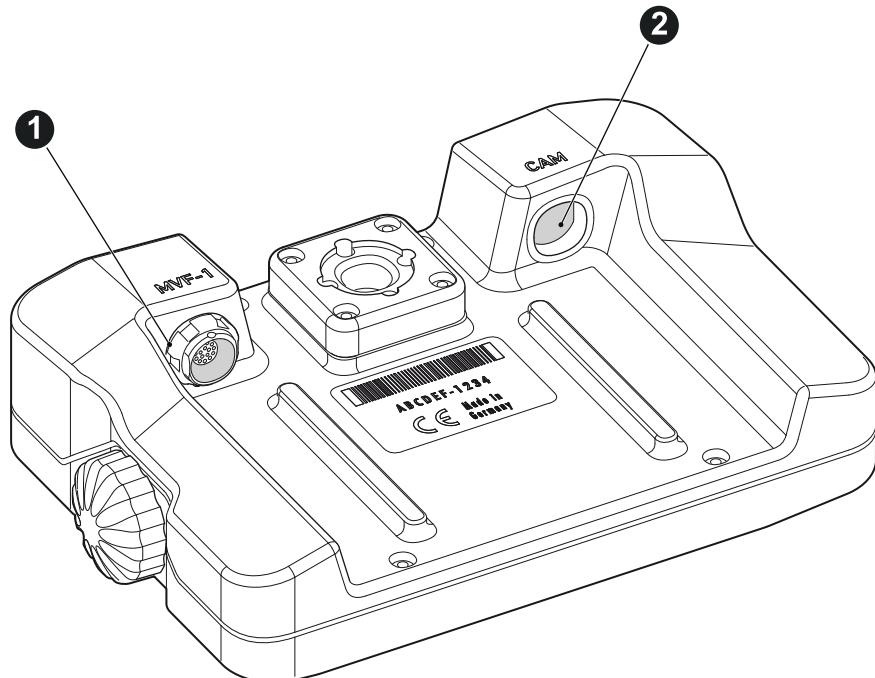
Note: Always store the camera with a lens mount properly installed and capped.

14.5 CCP-1

The Camera Control Panel-1 (CCP-1) is a standalone control panel, containing the display and a subset of buttons of the MVF-1. It shows the same images, and the buttons mimic the behavior of the equivalent buttons of the MVF-1. It can be used as the only control panel or with a MVF-1 daisy-chained to it.



1	Recording button	4	Monitor button
2	VF-1 user button	5	Play button
3	VF-2 user button	6	Jogwheel



1	MVF-1 connector
2	CAM connector

Connect CCP-1 to the EVF out port of the camera.

When it is used alone with the camera, it always shows an image.

When a MVF-1 is chained to the CCP-1, the MVF-1 will show an image in the EVF, but only one of the two monitors, either of the MVF-1 or the CCP-1 is active.

- If the monitor of the MVF-1 is closed, the CCP-1 is activated.
 - If the monitor of the MVF-1 is opened, the monitor will be activated.
- Activate the MVF-1 by pressing a screen button on the MVF-1.
- Activate the CCP-1 by pressing any button except "REC" button on the CCP-1.

14.6 Transvideo StarliteHD5-ARRI Monitor

The Transvideo Starlite HD5-ARRI monitor (K2.0006960) is a 5" 3G-SDI Oled monitor with an integrated H.264 recorder, a touchscreen and a special ARRI bus interface to communicate with the camera. It allows basic operation of an ALEXA Mini camera.

All overlays that are required for touch operation are generated by the camera and transferred to the Starlite monitor via HD-SDI. For this reason, monitors daisy-chained to the Starlite will show the overlays as well.

1. Connect the monitor to an SDI out of the camera. Make sure the SDI processing of the output is activated.
2. Connect the bus interface cable to the EXT port of the camera.
3. Activate the overlay menu by pressing the "ARRI" touch icon on the monitor.
4. Select a parameter with arrow icons of the monitor.
5. Start editing the parameter by pressing checkmark icon.
6. Select the new parameter value with the arrow icons.
7. Confirm the new value by pressing the checkmark icon.
8. If required, repeat steps 4-7 for other parameters.
9. Exit the overlay menu by pressing the exit icon.



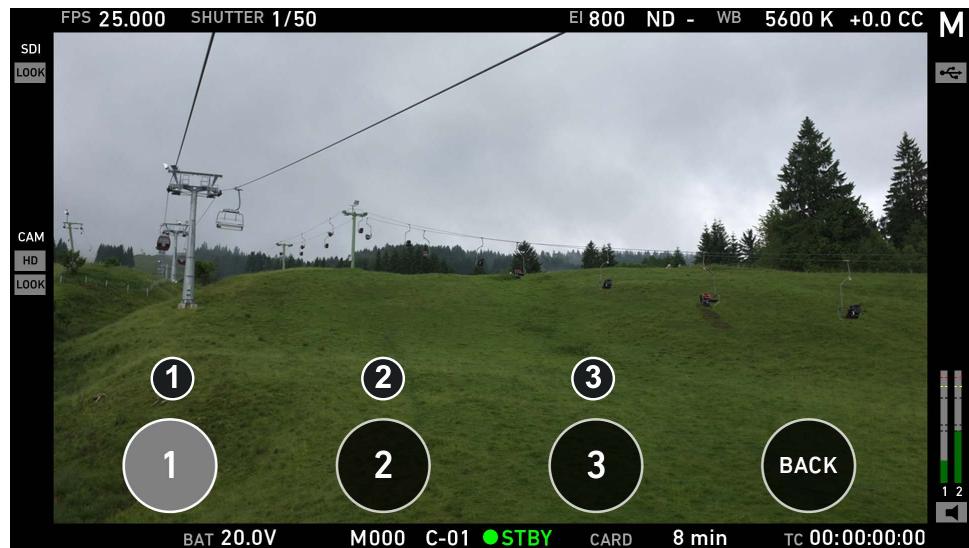
- ▶ Activate the ARRI menu by pressing the blue "A" touch icon on the monitor.
The main screen is opening up and you can access the user menu (1), the control menu (2), and the playback menu (4).
- ▶ Start and stop recording by pressing the red "REC" touch icon on the monitor.
- ▶ Exit the ARRI menu by pressing the "EXIT" (3) touch icon on the monitor.

All overlays disappear after some seconds of inactivity.

Note: In the ARRI menu, standard Starlite functionality are not available.

User menu

In the user menu, the same functions are available as with the camera user buttons (1) to (3).



- ▶ The grey button indicates an active user function (e.g. (1)).
- ▶ Exit the user menu by pressing the "BACK" touch icon on the monitor.

Control menu

In the control menu, camera parameters can be edit similar to the overlay menu.
page 47

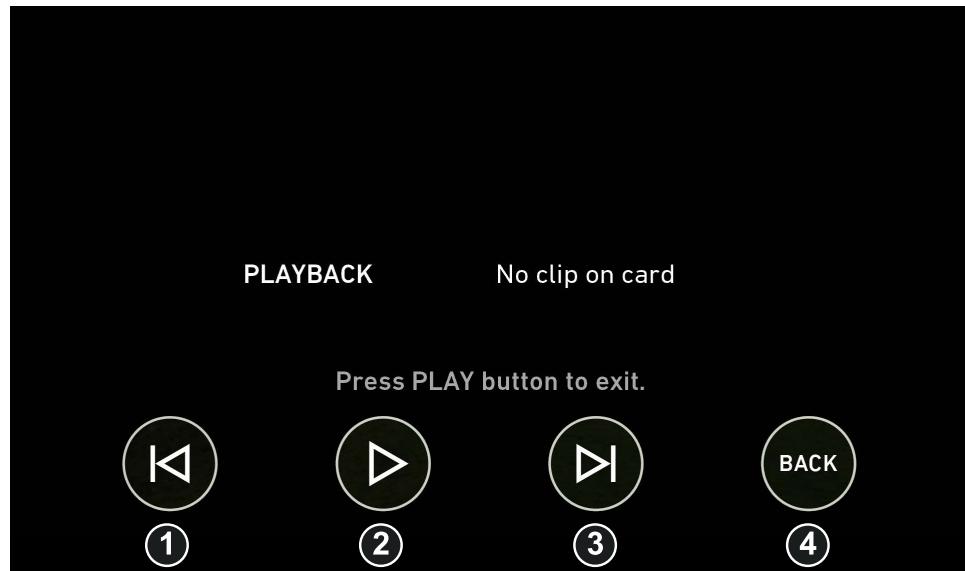


- ▶ Choose a parameter by pressing the touch icon (1) or (3) on the monitor.
- ▶ Select the parameter by pressing the touch icon (2) on the monitor.
- ▶ The parameter can be edited.
- ▶ Exit the control menu by pressing the "BACK" (4) touch icon on the monitor.

Note: The control menu is not available during playback.

Playback menu

In the playback menu, recorded clips can be played or paused (2) and skipped to previous (1) or next (3) clip.



- ▶ Play or pause clip by pressing the "Play" (2) touch icon on the monitor.
- ▶ Skip to previous or to next clip by pressing the "Skip previous" (1) or "Skip next" (3) touch icon on the monitor.
- ▶ Exit the playback menu by pressing the "BACK" (4) touch icon on the monitor.

Note: The playback menu is not available during recording.

15 Licensing and updating

15.1 Camera update

The camera supports the installation of SUP software update packages. Check www.arri.com for the latest available SUP version.

To install an update, follow the instructions coming with the SUP.

15.2 Licensing

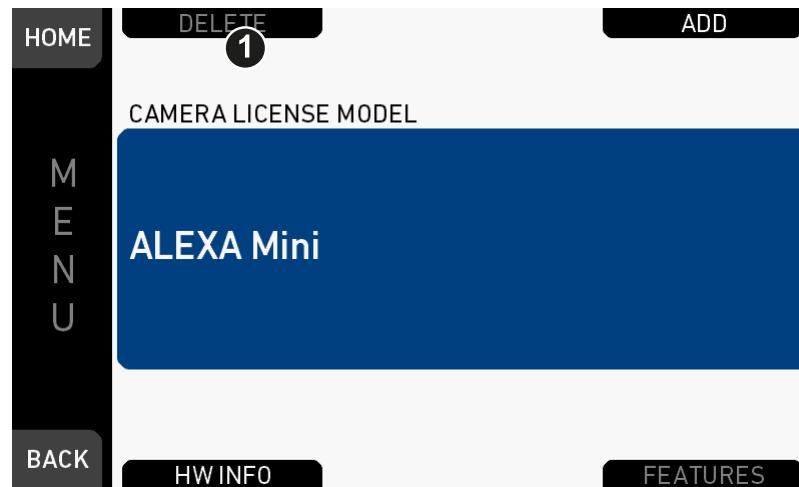
You can further enhance the camera capabilities through licensed features available for online purchase. Visit the ARRI license shop at <http://alshop.arri.de> and follow the instructions for purchasing and downloading license keys.

License keys are linked to each camera's serial number and cannot be transferred from one camera to another.

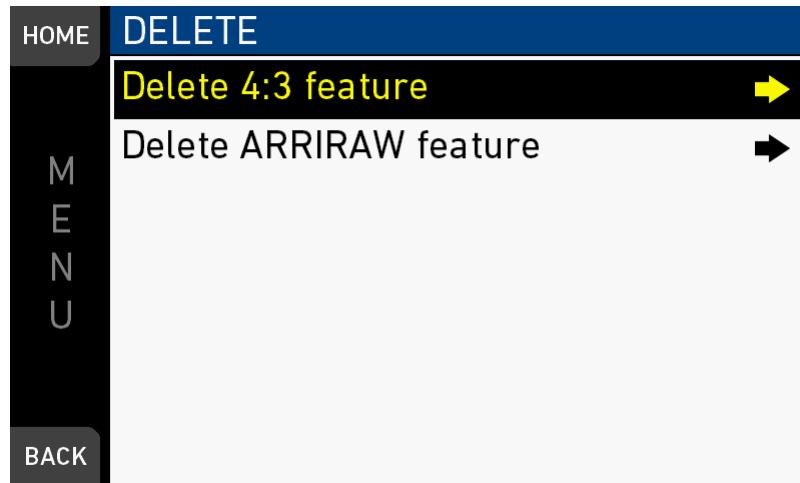
The active camera license model (incl. contained features) is available under: *Menu > System > Licensed feature*.

For full instructions, see the User Manual.

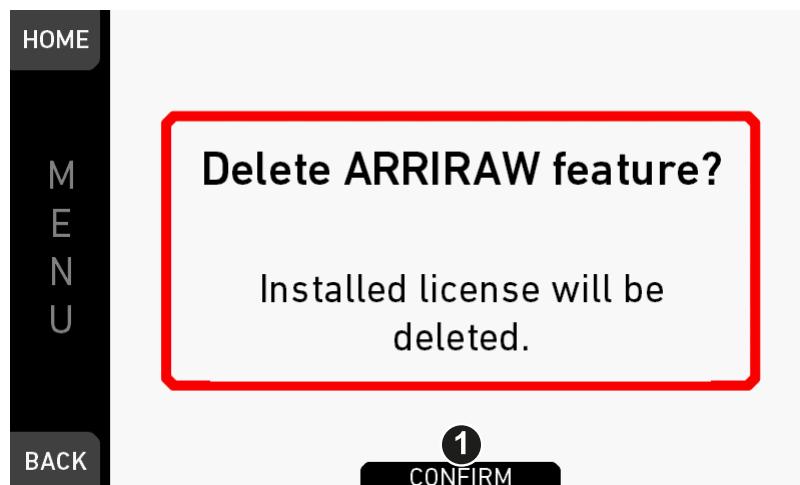
15.2.1 Deleting a license



1. Open the *License* menu.
2. Press *DELETE* (1).

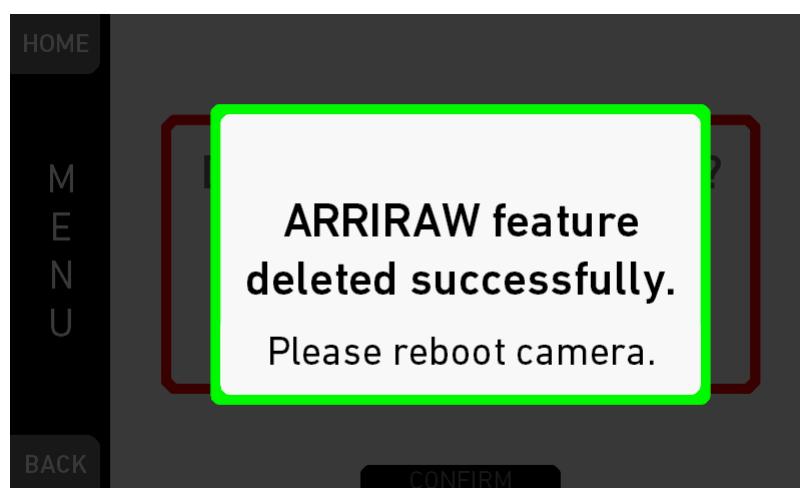


3. Select the feature you want to delete.



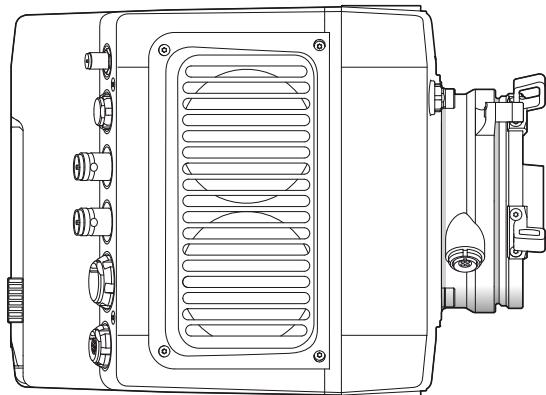
4. Press CONFIRM (1). Cancel with BACK.

A green message confirms the successful deleted license.



16 Appendix

16.1 Technical data



Camera info

Dimensions	Length	185 mm
	Height	140 mm
	Width	125 mm
Weight	2.3 kg / 5 lbs (camera body with titanium PL mount)	
Sensor	35 mm format ARRI ALEV III CMOS with Bayer pattern color filter array	
Sensor photo sites	ProRes: S16 HD HD HD Ana. 2K 2.39:1 2K Ana. 3.2K 4K UHD 4:3 2.8K	Resolution: 1600x900 2880x1620 1920x2160 2867x1613 2560x2145 3200x1800 3200x1800 2880x2160
	ARRIRAW:	
	2.8K Open Gate 3.4K 4:3 2.8K (OG 3.4K) 16:9 HD Ana. (OG 3.4K) 2.39:1 2K Ana. (OG 3.4K)	2880x1620 3424x2202 2880x2160 1920x2160 2560x2145
Shutter		Electronic shutter, 5.0°-356.0°

Exposure latitude	14+ stops over the entire sensitivity range from EI 160 to EI 3200 as measured with the ARRI Dynamic Range Test Chart (DRTC-1)
Exposure index	adjustable from EI 160-3200 in 1/3 stops EI 800 base sensitivity
ND filters	Built-in motorized ND filters 0.6, 1.2, 2.1
Supported lens mounts	Steel PL mount with ENG connector and LDS Titanium PL mount with L-Bus connector and LDS EF mount PL mount with Hirose connector and LDS B4 mount with Hirose connector
Recording media	CFast 2.0 memory cards
Sound level	< 20 dB(A) at standard frame rates
Operating temperatures	-20 to +45 °C (-4 to +113 °F) @ 95% r.h. non-condensing
Environmental	Splash and dust-proof through sealed electronics
Wireless interfaces	Built-in WiFi and white radio modules

Recording info

Target resolutions	ProRes: S16 HD HD HD Ana. 2K 2.39:1 2K Ana. 3.2K 4K UHD 4:3 2.8K	Resolution: 1920x1080 1920x1080 1920x1080 2048x1152 2048x858 3200x1800 3840x2160 2944x2160
	ARRIRAW: 2.8K OpenGate 3.4K 4:3 2.8K (OG 3.4K) 16:9 HD Ana. (OG 3.4K)	2880x1620 3424x2202 3424x2202 3424x2202 3424x2202

	2.39:1 2K Ana. (OG 3.4K)	
Recording codecs		ProRes 422 LT, 422, 422 HQ, 4444, 4444 XQ ARRIRAW

Maximum recording frame rates

Camera settings		Maximum frame rate in fps
Resolution	Codec	CFAST 2.0 128 GB
S16 HD	ProRes 422 LT	200
	ProRes 422	200
	ProRes 422 HQ	200
	ProRes 4444	200
	ProRes 4444 XQ	120
HD	ProRes 422 LT	200
	ProRes 422	200
	ProRes 422 HQ	200
	ProRes 4444	200
	ProRes 4444 XQ	120
HD Ana.	ProRes 422 LT	120
	ProRes 422	120
	ProRes 422 HQ	120
	ProRes 4444	120
	ProRes 4444 XQ	120
2K	ProRes 422 LT	200
	ProRes 422	200
	ProRes 422 HQ	200
	ProRes 4444	200
	ProRes 4444 XQ	120
2.39:1 2K Ana.	ProRes 422 LT	120
	ProRes 422	120
	ProRes 422 HQ	120
	ProRes 4444	120
	ProRes 4444 XQ	120
3.2K	ProRes 422 LT	60
	ProRes 422	60
	ProRes 422 HQ	60
	ProRes 4444	60
	ProRes 4444 XQ	30

4K UHD	ProRes 422 LT	60
	ProRes 422	60
	ProRes 422 HQ	60
	ProRes 4444	60
	ProRes 4444 XQ	30
4:3 2.8K	ProRes 422 LT	50
	ProRes 422	50
	ProRes 422 HQ	50
	ProRes 4444	50
	ProRes 4444 XQ	50
2.8K	ARRIRAW	48
OpenGate 3.4K	ARRIRAW	30
4:3 2.8K (OG 3.4K)	ARRIRAW	30
16:9 HD Ana. (OG 3.4K)	ARRIRAW	30
2.39:1 2K Ana. (OG 3.4K)	ARRIRAW	30

Electrical data

DC power input	10.5 to 34 V
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Audio data

External interfaces	1x 5-pin LEMO
Input formats	Balanced stereo line
Recording format (embedded in video file)	Linear PCM, 24 bit 48 kHz
Number of recording channels	2/5 (used/recorded)
Gain adjustment	0 - +30 dB independently per input
Line input max. level	+24 dBu, correlating to 0 dBFS
Limiter/Auto level features	-6 dBFS threshold 3ms attack time 360ms release time ∞:1 ratio
Metering	From -50 to 0 dBFS Markers at -20, -18 and -9 dBFS Warnings from -5 dBFS (yellow) and -2 dBFS (red) to 0 dBFS

	Input clipping indication through red frame around audio meter
Internal test tone generator	1 kHz sine @ -9 dBFS / -18 dBFS / -20 dBFS

16.2 Dimensional drawings

Dimensional drawings are attached at the end of this document. They can also be downloaded from the ARRI website:
<https://www.arduino.com/alexamini>

16.3 Declarations of conformity

EU Declaration of Conformity

The product ALEXA Mini conforms to the specifications of the following European directives:

For cameras delivered before 13 June 2016:

- DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity
- DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)

For cameras delivered from 13 June 2016:

- DIRECTIVE 2014/53/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment
- DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)

FCC Compliance Statement

Class A Statement: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

Note: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- **WIFI:** FCC ID: PPD-AR5B22
- **ECS transceiver module:** FCC ID: Y7N-EMIP300

Industry Canada Compliance Statement

Complies with the Canadian ICES-003 Class A specifications.

Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

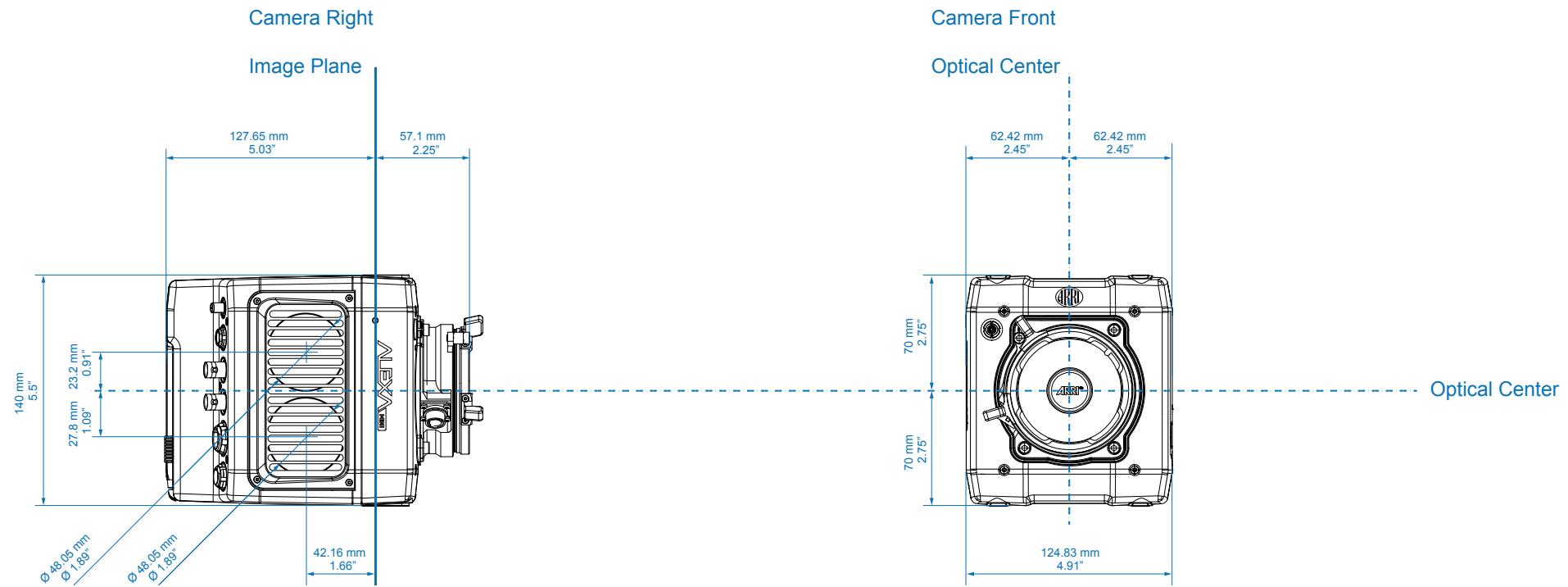
This device complies with RSS-210 of Industry Canada.

Cet appareil est conforme à CNR-210 d' Industrie Canada.

This Class A device meets all the requirements of the Canadian interference-causing equipment regulations

Cet appareil numérique de la Classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

- **WIFI:** IC ID: 4104A-AR5B22
- **ECS transceiver module:** IC ID: 9482A-EMIP300

**ALEXA Mini**

ALEXA Mini (camera body with titanium PL lens mount)

Length

184.75 mm - 7.27"

Width

124.83 mm - 4.91"

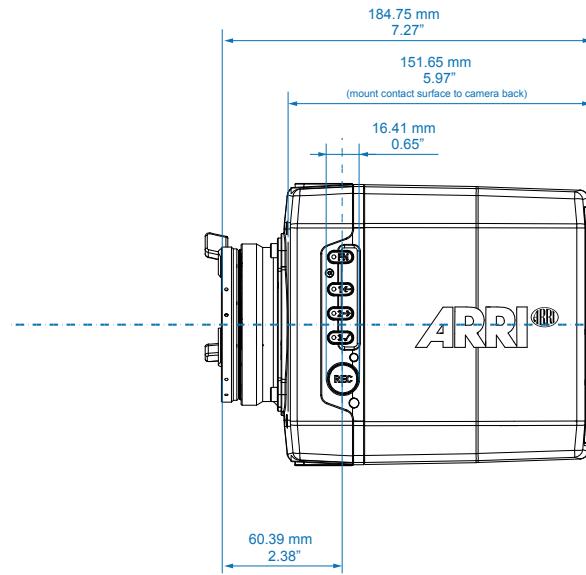
Height

140 mm - 5.5"

Weight

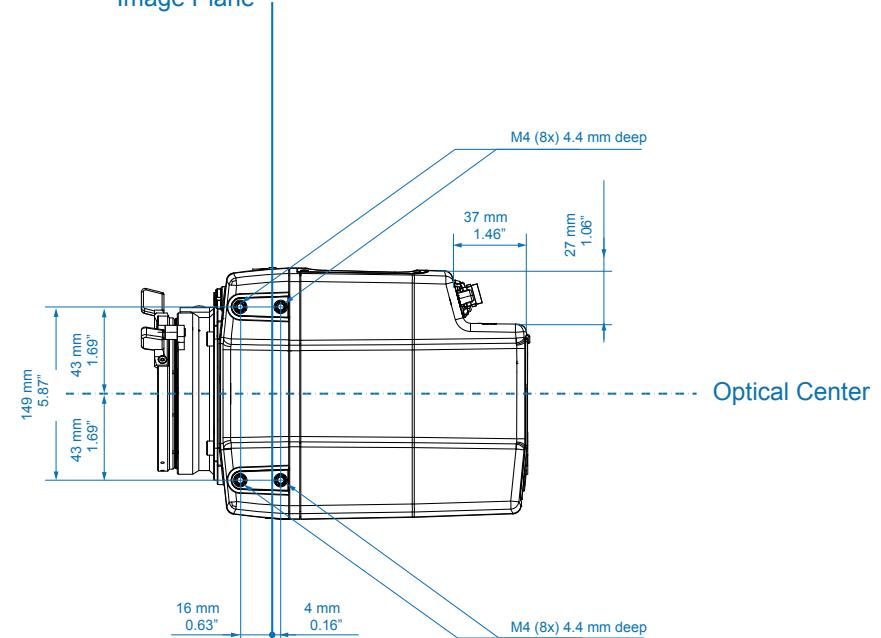
~ 2.3 kg/5 lbs

Camera Left



Camera Top

Image Plane



Optical Center

ALEXA Mini**Length****Width****Height****Weight**

ALEXA Mini (camera body with titanium PL lens mount)

184.75 mm - 7.27"

124.83 mm - 4.91"

140 mm - 5.5"

~ 2.3 kg/5 lbs