

ALEXA 35 SUP 1.0.3

Software Update Package (SUP) 1.0.3 Revision 4

RELEASE NOTES

August 9, 2022 a



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A. Introduction to ALEXA 35

This document introduces the ALEXA 35 camera with Software Update Package (SUP) 1.0.3 Revision 4. Since this is a new generation of ARRI digital cameras, we highly recommend that you take your time to go through these release notes and the user manual before operating the camera.

For more information on the camera, please visit www.arri.com/alexa-35

Important Notes

ALEXA 35 SUP 1.0.3 Revision 4 is a maintenance release and contains important bugfixes and improvements to system stability in contrast to ALEXA 35 SUP 1.0.3 Revision 3, which was installed on the first cameras that were shipped. There are no new features. We recommend updating to all customers.

ALEXA 35 SUP 1.0.3 New Features - Overview

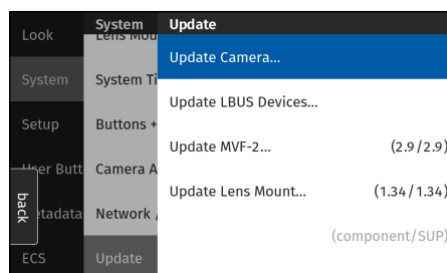
A more detailed listing can be found below in the section "C. New Features".

- **New Super 35 Format 3:2 4.6K Sensor**
- **17 stops of dynamic range**
- **Better low light performance**
 - Up to EI 6400
 - Enhanced Sensitivity Mode
- **REVEAL Color Science**
 - LogC4 Tonal Curve
- **HDR in Viewfinder MVF-2**
- **ARRI Textures**
- **Improved Look Handling**
- **19 recording formats**
- **Side Display**
- **Real-time Streaming Metadata**
- **Power Options**
- **New File and Reel Names**
- **Electronic Accessories**

Updating Camera, Viewfinder and Lens Mount

- ALEXA 35 SUP 1.0.3 Revision 4 can be installed in all previously shipped ALEXA 35 cameras, and we recommend updating from SUP 1.0.3 Revision 3 to SUP 1.0.3 Revision 4.
- We do not recommend updating in the middle of a production.
- When connected to the camera, the MVF-2 viewfinder and lens mount will also be updated automatically.

In case of using an MVF-2 or lens mount with older software with a camera with newer software, please make sure to make a component update of the MVF-2 or lens mount. The version numbers in brackets should be equal (MENU > System > Update).



- Please note that the viewfinder might switch off during the update process and does not give visual feedback of the update all the time. Refer to the side display in that case. Make sure not to power off the camera during an

SUP update. Make sure not to unplug the viewfinder during an SUP update. Detailed instructions for the update process can be found at the end of this document.

- Always use a 'private' or 'incognito' browser window when using the Web Remote to operate the camera and to perform a SUP update. This prevents possible erroneous behavior.

Downdating the Camera

- It is possible to downgrade from ALEXA 35 SUP 1.0.3 Revision 4 to ALEXA 35 SUP 1.0.3 Revision 3.
- Since ALEXA 35 SUP 1.0.3 Revision 4 requires a different sensor calibration from any of the field test SUPs (0.8.x), please do not downgrade the camera from SUP 1.0.3 Revision 4 to any of the field test SUPs.

Codex Compact Drive 1TB Update

All existing Codex Compact Drive 1TB must be updated to continue to function with ALEXA 35. New drives are shipped with updated firmware. If a drive that needs a firmware update is inserted into the camera an update prompt will be displayed. After the drive has finished updating the camera will remain in update mode so that multiple drives can be updated. To restore normal operation, reboot the camera.

All data on the drive will be irreversibly erased. Please back up your data before the update!

Note: Updated Compact Drive 1TB and the new Compact Drive 2TB will be supported by ALEXA 35 and ALEXA Mini LF with SUP 7.1.1.

Software Compatibility Notes and Sample Footage

- A listing of third-party software and their compatibility to ALEXA 35 can be found on the [ALEXA 35 Workflow webpage](#). Please make sure to always use the latest version of any third-party software.
- To properly process files recorded with ALEXA 35 cameras with ALEXA 35 SUP 1.0.3 Revision 3 or later installed, please update the [ARRI Reference Tool \(ART\)](#) to the latest release version.
- Please note, that macOS X version 10.14.4 or later is required to successfully transfer data from a Codex Compact Drive with the Codex USB-C Compact Drive Reader, or the SXR Capture Drive Dock with the Compact Drive Adapter. Using older versions of macOS will result in a copy error for files larger than 9.66 GB.
- Please note that macOS X version 10.15 with the Apple MXF plug-in installed (part of "Pro Video Formats 2.1") is required to play back downloaded MXF/Apple ProRes footage in Apple QuickTime Player.
- Sample footage shot with the ALEXA 35 camera can be downloaded on the ALEXA 35 homepage www.arri.com/alexa-35.

Registration

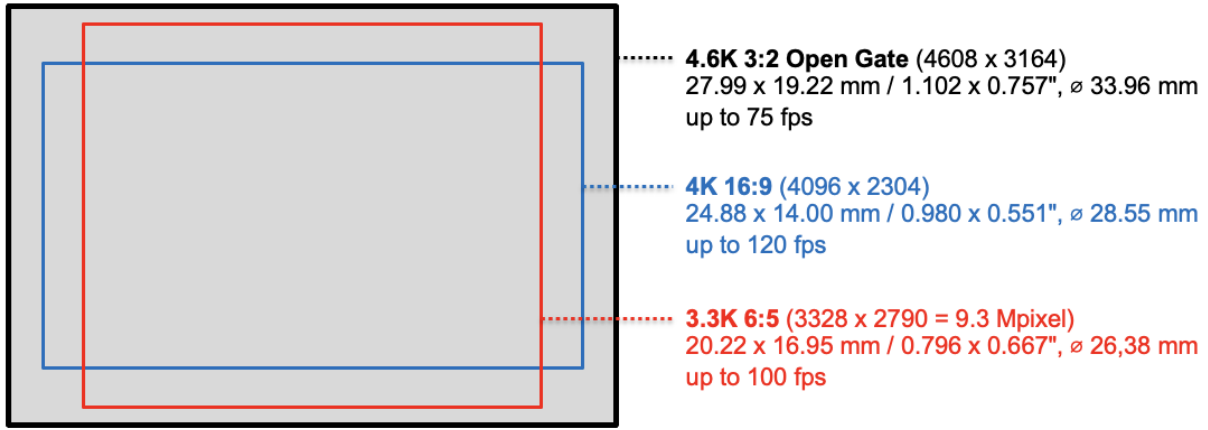
If you have not done so already, please make sure to register your camera using our online customer registration. Your registration ensures that you receive information about future software updates as soon as they are available. If you register your new camera within 1 month of purchase, you will get a 12-month extended warranty for free. You can find the registration at www.arri.com/productregistration.

B. New Features

Below we have listed only those features that are significantly different from previous cameras. For a full feature list, please look at the ALEXA 35 User Manual (which can be downloaded from the ARRI website).

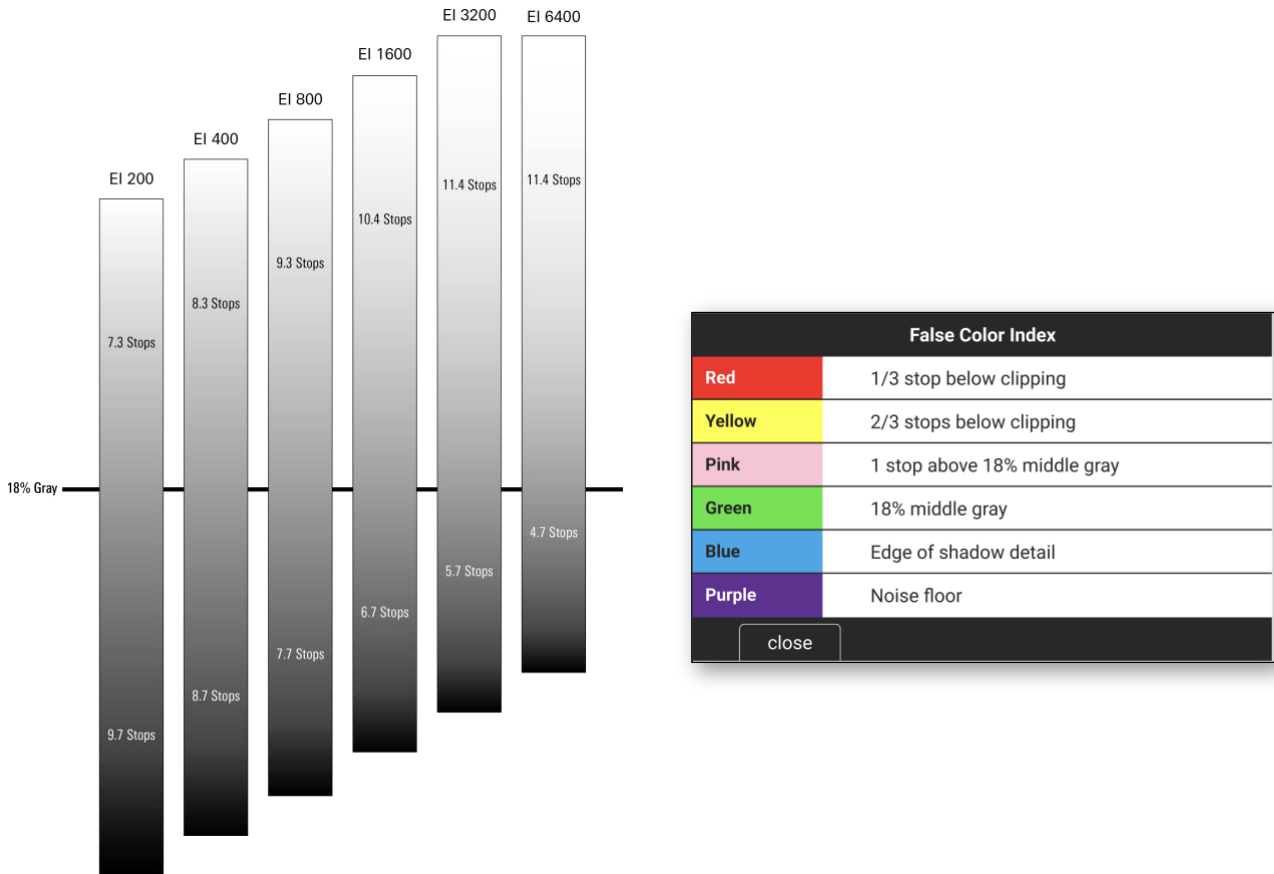
New Super 35 Format 3:2 4.6K Sensor

The new sensor fulfills all 4K mandates and supports all Super 35 and large format lenses. Below are three sensor modes we expect to be the most popular: Open Gate, 4K 16:9 (the largest sensor area that goes up to 120 fps) and 3.3K 6:5 (the sensor mode to be used with 2x anamorphic lenses).



17 Stops of Dynamic Range

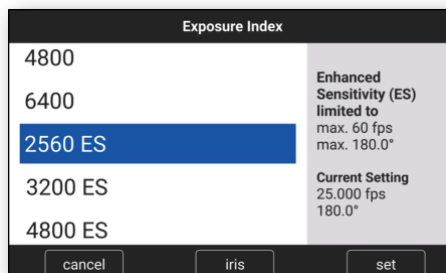
ALEXA 35 delivers 17 stops of dynamic range, that is 2.5 stops more than any previous ARRI camera. The False Color index remains very similar to the current one but has been slightly refined. It can be found under *MENU > Info > False Color Index*. Please note that your MVF-2 may contain the LogC3 False Color Index. If so, please only refer to the in-menu index.



Enhanced Sensitivity

In addition to EI values from 160 to 6400, EI values from 2560 to 6400 with Enhanced Sensitivity (ES) can be selected. Enhanced Sensitivity is an optional in-camera noise reduction that offers cleaner images in low light situations. When recording ARRIRAW, Enhanced Sensitivity is baked into the image, but the exposure index is not. When recording Apple ProRes, both Enhanced Sensitivity and exposure index are baked into the image. Enhanced Sensitivity has some frame rate and shutter limitations (displayed in the exposure index list in the camera menu):

Codec	Sensor Mode	Max. fps	Shutter ≤
ARRIRAW	All	60	180°
Apple ProRes	4.6K 3:2 Open Gate	30	180°
	4.6K 16:9	48	180°
	All others	60	180°



HDR in Viewfinder MVF-2

ALEXA 35 uses the same viewfinder as the Mini LF: the MVF-2. However, when attached to the ALEXA 35, you can also monitor HDR images in the viewfinder. To do so, go to *MENU > Image > Look > VF Processing* and change image processing to 'Look (EVF: HDR, Mon: SDR)'. The image in the MVF-2 flip-out monitor will still be displaying an SDR image since the flip-out monitor is not HDR capable.

REVEAL Color Science

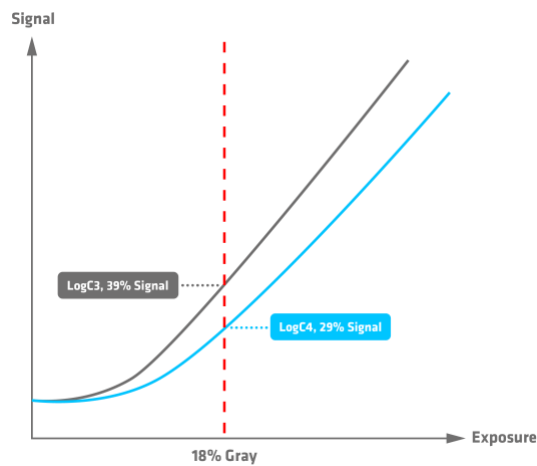
The new REVEAL Color Science provides significant improvements in image quality and a faster, easier workflow.

- Cleaner edges through improved debayering (ADA-7)
- More accurate color reproduction through the new ARRI Color Engine (ACE4)
- Easier grading and ACES compatibility via the new wide gamut color space (AWG4)
- Capturing of the increased dynamic range through the new Log curve (LogC4)
- Improved color fidelity through the new LogC4 LUTs



LogC4 Curve

ALEXA 35 uses a new log curve, LogC4, to capture the increased dynamic range of the camera. The new curve requires new LogC4 Look Up Tables (LUTs), which can be downloaded from the ALEXA 35 website, and which are included in the ARRI Reference Tool (ART) and many third-party tools. Please note that images in LogC4 look darker than LogC3 images, that is normal.



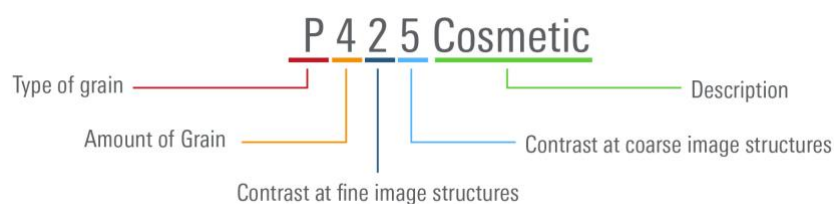
Existing LogC3 LUTs cannot be used with LogC4 images.

ARRI Textures

ARRI Textures provide a new and unique way for cinematographers to exert greater creative control on set. A texture defines the amount and character of grain in an image, as well as the amount of contrast at different levels of detail, perceived by the viewer as sharpness. Previous ALEXA cameras were pre-programmed with a default texture, but with ALEXA 35 you can choose from an evolving menu of custom ARRI Textures, either to suit a specific shooting environment or to hone your look.

ARRI Textures can be chosen in-camera like Look files, like a film stock. The camera comes with several ARRI Texture files pre-installed. There are different textures for different shooting situations: skin, night, vintage, higher contrast, etc. Textures are always baked in for ARRIRAW and Apple ProRes and cannot be changed in post. For more information, see the “ARRI Textures” white paper at www.arri.com/alex-35.

The differences between ARRI Textures are subtle, therefore testing in pre-production with a large, high quality HDR monitor is advised. The names of ARRI Textures reveal the basic characteristics:



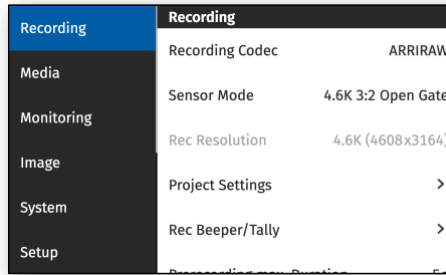
Improved Look Handling

While ARRI Textures and the Enhanced Sensitivity Mode are baked into the image, color looks and the look intensity setting are not. The camera always records images for Apple ProRes in LogC4 and for ARRIRAW in a log-like curve.

- The new ALF4 look files are Log-to-Log manipulations and do not contain a color space conversion. The color space conversion can be set in a separate step. This enables on-set viewing of SDR and HDR images of the same look.
- Look intensity can be adjusted in camera and is saved in metadata.
- A new LogC4 Look Library is built into the camera for free.

19 Recording Formats

Recording formats can be set with three parameters: Recording Codec, Sensor Mode and Recording Resolution.



- The **Recording Codec** defines the image content encoding. The options are ARRIRAW or Apple ProRes.
- **Sensor Mode** defines the number of photosites that are being read out from the sensor. Thereby it also defines the area used on the sensor; this is important to know to see if the lens' image circle covers. Sensor Mode also influences the maximum possible frame rate and the data rate. The Sensor Mode part of the name is further divided into two parts:
 - First is the number of horizontal photosites used on the sensor in “K”.
 - Second is the aspect ratio of the sensor area that is being read out.
- The **Recording Resolution** defines the number of pixels recorded in the ARRIRAW or Apple ProRes file, possibly with de-squeezing or down-sampling for Apple ProRes. Sometimes, as in “ARRIRAW 4.6K 3:2 Open Gate”, the number of photosites read from the sensor and the number of pixels recorded into the file are the same (here 4.6K); no in-camera processing has been applied. In other cases, as for instance in “Apple ProRes 4.6K 16:9 - 4K” the number of photosites read out from the sensor is larger than the number of pixels recorded into the file. In this case, the in-camera processing has down-sampled the 4.6K image from the sensor to a 4K image to match the target format. The aspect ratio of the recorded file remains the same as that of the sensor mode and is therefore not noted again.

Side Display

Camera settings can be viewed and changed on the side display on the camera left side, right above the media bay. This is great when working with TRINITY, Steadicam, Easyrig, drones and cranes with the viewfinder not connected to the camera. The side display has three pages: HOME, INFO and SETTINGS.



Real-time Streaming Metadata

The ETH (Ethernet) connector outputs real-time streaming metadata for virtual productions. This includes all relevant frame-based lens and camera metadata and is received by ARRI's Live Link Metadata Plug-in for Unreal Engine. All Documents can be found [here](#).

Power Options

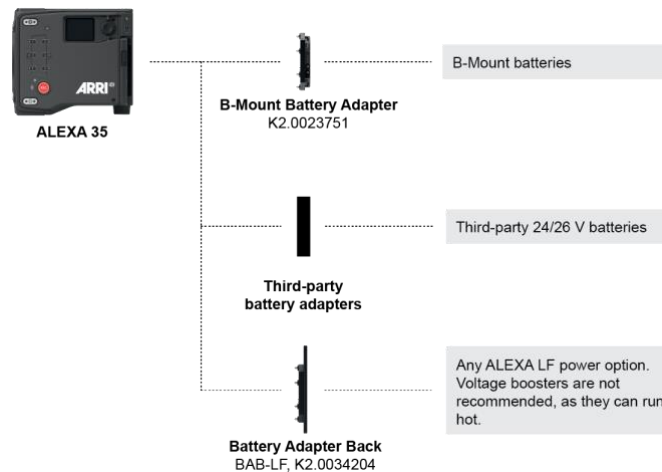
ALEXA 35 is a 24 V camera with an input range of 20.5 V – 33.6 V. It cannot be operated with 12 V power. The power draw of the camera and the MVF-2 viewfinder, when recording Apple ProRes 4444 at 24 fps, is about 90 W.

There are two power inputs: PWR and BAT.

- The PWR connector on the camera's right side accepts the same cable as used by ALEXA Mini and ALEXA Mini LF.
- The BAT interface on the camera's back is used for on-board battery adapters that mount directly to the camera.
 - The camera ships with a B-Mount battery adapter, and most on-board battery manufacturers have 24 V B-Mount batteries in their program.

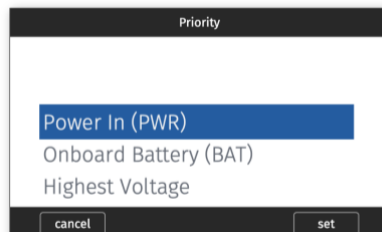
- Alternatively, some manufacturers of 24 V on-board batteries have their own standard for a 24 V camera/battery interface, and they offer adapters for their systems (such as Anton Bauer' Gold Mount Plus, Hawk-Woods' Reel Power or Core SWX's Helix MAX).
- Yet another alternative is the Battery Adapter Back BAB-LF, which emulates the back of an ALEXA LF and thereby enables the use of ALEXA LF power solutions.

Note: Battery Adapter Back BAB-HV (K2.0019453) and Battery Adapter Back BAB-HG (K2.0019456) are not compatible with the ALEXA 35.



In the power input priority menu, it is possible to choose how the camera handles the two power inputs BAT and PWR. You can choose between:

- **Power In (PWR)**: the camera first drains the power source connected with a cable to the PWR connector
- **Onboard battery (BAT)**: the camera first drains the power source connected to the BAT interface in the back of the camera
- **Highest Voltage**: the camera always drains the power source with the highest voltage



Other

There are many other new features, including:

- Info Panes are gray rectangles with information that can be found to the right of many lists in the menu. They provide extra information about the choices in the list.
- It is possible to disable warnings on SDI 1 and/or SDI 2, so you do not annoy the director e.g., each time a drive is formatted
- It is possible to switch frame lines A, B or C on/off individually
- There is a user button for Mirror Image
- It is possible to individually show or hide left/right/top/bottom SDI overlay
- The brightness of the SDI overlay can be adjusted
- The Master Grip status can be shown in the status info

New File and Reel Names

- Camera index: added one more letter for stereo shoots (eye index) or large productions with more than 26 cameras
- Reel counter: added one more digit for long-term TV series that continue to count reels across seasons
- Added time of day
- Added codec identifier (ARRIRAW or Apple ProRes)



Electronic Accessories

There are two electronic accessories that can be placed between the battery adapter and the camera. Note that each one can be used on the camera, but not at the same time.

While the camera itself has a 12V and a 24V accessory power output, the **Power Distribution Module PDM-1** provides 7 more: 4x regulated 24V, 2x regulated 12V and one 12V D-tap. This is what you want if you work on a high-end feature film or TV series, where crew usually put lots of accessories on the camera.

If you want to shoot more AMIRA/documentary style, you can use the **Audio Extension Module AEM-1** instead. It has MIC and LINE audio inputs, AES digital audio inputs as well as 48V Phantom power, gain, limiters, and other high-end audio features. It also has one 12V and one 24V accessory power output.



Power Distribution Module PDM-1



Audio Extension Module AEM-1

C. Known Issues – Software

Accessories

Not possible to set Enhanced Sensitivity (ES) via Hi-5

Currently it is not possible to select Enhanced Sensitivity exposure indexes via the Hi-5. Those EI values must be selected via User Button, Viewfinder or Web Remote.

No Playback on Hi-5 when Master Grips are connected

If ARRI Master Grips or OCU-1 are connected to ALEXA 35 no cliplist can be displayed on Hi-5.

ARRI GPIO box GPB-1 is not fully supported.

The user button #8 on the GPB-1 can currently not be used.

USB stick may delay camera bootup

In rare cases a connected USB stick may substantially delay the camera bootup. Remove the USB stick before rebooting in that case. Take care that your USB Stick is using the exFAT file system, other file systems are known to cause issues.

Lenses

Some /i lenses show missing or incorrect lens scales

For a few lenses using the Cooke /i protocol lens scales are either missing or not displayed correctly. Use LDA tables for these lenses instead.

Monitoring

MVF-2 shows only ARRI logo and color bars after reboot of the camera

In rare instances the MVF-2 flip-out monitor will continue to show the ARRI logo after the camera has finished booting. In this case the OLED in the eyepiece will show color bars. In some instances, the image may stay black.

Reboot the camera to resolve the issue.

Look Intensity is not adjustable for the Default look

The Default look does not support Look Intensity. Any adjustment of the setting will have no visual impact.

Frame lines may be displayed in the surround view when using master magnification

When using surround view in conjunction with master magnification the frame line may be displayed in the surround area for certain magnifications while it should not be visible.

Setting a frame line after a codec switch returns error message

After changing the recording codec from ARRIRAW to Apple ProRes or vice versa, setting a frame line may return an error message. In this case, restart the camera and set the frame line again.

SDI 422 12G Frame Rates 48 and 59.94 may not be supported by external devices

48p is a format which is not supported by every SDI receiver. E.g. for the Blackmagic SDI to HDMI 12G converter, 48p support was added with the latest update. Check compatibility of grabber card/firmware with this format or verify with some other 12G SDI source.

Changing resolutions may put SDI into unsupported formats

When an SDI output has been set to SDI format 422 6G UHD 24p and the resolution is changed to an unsupported format the camera switches to 422 3G HD 48p which may not be compatible with all monitoring devices.

Overlays in 6G disappear

When status info is set to OFF and SDI format is switched from 1.5G to 6G the SDI Overlays disappear. Switch SDI Image to clean and the back to processed to display them again.

Wrong YCbCr matrices for HDR monitoring in 422 SDI modes

If the Monitor color space for SDI 1 or 2 is set to Rec.2020 or Rec.2100 PQ/HLG in any 422 SDI modes the output for False Color and LogC4 is using the wrong matrix for YCbCr conversion. In this case the Rec.2020 YCbCr matrix will be used instead of the Rec.709 matrix which should always be used for False Color and LogC4 displaying. For these workflows switch to 444 monitoring or set the color space to Rec.709 to have the correct Rec.709 matrix applied.

Transmitting LogC4 over 8bit wireless video may show image artefacts

Transmitting LogC4 video over 8 bit wireless connections may show image artefacts in certain image regions. This is a byproduct of video compression and not visible in wired video or original camera footage.

Playback

Small playback image

When using Magnification and Surround view the playback image may show less than monitored during recording and standby.

When in playback and activating VF ZOOM the zoom position cannot be adjusted

Assign a user button with the function Zoom Position to modify the position.

Post Production

Look Intensity of Looks saved in the ARRI Reference Tool are shown as 100% in camera

When exporting a look with a modified intensity from the ARRI Reference Tool the camera shows Look Intensity as 100%, regardless of the setting used in the ARRI Reference Tool. The Look will however be visually at the intensity set in ART. Workaround: Always export looks at 100% Look Intensity in ART and modify the intensity in camera.

Metadata: LDS Focus Limit is always metric

If the focus unit is set to imperial, lensLimitsFocusImperial is filled with the metric value without conversion. In this case lensLimitsFocusMetric is unavailable.

Jam Sync Timecode offset of 1 frame when using ES

When using Enhanced Sensitivity Mode, the Jam Sync timecode is offset by one frame.

The ALE file does not identify fractional CC values in clips

In the ALE file fractional values of the white balance are not recorded. They are correct in the clip metadata and in the ARRI Reference Tool

Roll and Tilt Metadata has delays

The roll and tilt metadata written to camera clips is currently not frame accurate and has delays. This will be fixed in a future SUP. For the moment use a UMC-4 for frame accurate roll and tilt data.

Remote Control

Lists may appear empty on Web Remote when Display Style is Night

When the display style has been set to 'Night', some dropdown lists in certain OS/Browser combinations may appear empty (e.g. Windows with Chrome). Either switch to a different browser or set the display style to 'Day'.

Updating

Side Display shows 'Installing Version 0.0.0'

Until the Update process has read back the version that is being installed on the camera the side display will display 'Installing Version 0.0.0'. With slow USB sticks it may take up to 20 seconds until the correct version is displayed.

Camera shows 'Media firmware not supported' after update

Sometimes after a drive has been updated the Alert 'Media firmware not supported' is still shown in the Alert screen. The Media info page will however show the correct firmware version.

Usability

Side Display backlight stays on after display has been deactivated

When sending the side display to sleep by pushing the jog wheel for a long time or by setting the display mode to 'sleep', the backlight stays on for some time.

"Go to" Lens Mount Update links to empty page

If the lens mount is not up to date the camera offers a popup that includes a link to the relevant menu item. This link is not functional. To update the Lens mount go to MENU > SYSTEM > UPDATE > UPDATE LENS MOUNT

Long boot up times

In rare cases the camera may hang momentarily or permanently when changing sensor modes, rebooting, or performing a factory reset. Restart the camera manually in this case.

Auto white balance window sticky when not executed

Once auto white balance is armed, the overlay on SDI and EVF is sticky, CANCEL does not clear the overlay. It can only be removed by executing AUTO WB. Please note this will overwrite your previous auto white balance values.

WiFi

WiFi - No successful reconnection to access point after reboot in client mode

In rare cases the WiFi driver can get stuck after a reboot or resolution change when the camera is in client mode. In this case the camera does not reconnect to the previous access point and the list of discovered networks is empty.

In this case, please reboot the camera to regain WiFi functionality.

Periodic connection issues with Google Chrome and Mac OS (momentary connection loss about once a minute)

When using the webremote with Google Chrome and Mac OS, make sure not to connect via alexa35-#####.local but use the LAN IP address of the camera. Check *MENU > Info > Network Info > LAN IP* for the current IP address.

Alternatively you can use Firefox via alexa35-#####.local which does not show the issue.

Workflow & Tools

ARRI Reference Tool cannot create User Dead Pixel masks

The ARRI Reference Tool (ART) is currently not capable of creating User Dead Pixel masks. This functionality will be added to ART in a future release.

D. Update Procedure

Where to download the new Software Update Package (SUP)

You can find the Software Update Package in the [Software Update Packages download section](#). A SUP can be installed on the camera by using a USB stick as described in detail below.

Camera Update Procedure

The ALEXA 35 software is updated from a USB memory stick. The SUP will update the ALEXA 35 camera along with the Viewfinder (MVF-2) and the lens mount – provided they are connected to the camera.

The update can be started through the menu of the MVF-2 viewfinder or through the Web Remote. The Web Remote requires a connection to the camera via WiFi or Ethernet (with ALEXA Ethernet/RJ-45 Cable KC-153-S, K2.72021.0). Open a web browser and enter the URL: `http://alexa35-xxxx.local` (replace xxxx with your camera's 5-digit serial number). For further information on the Web Remote, please refer to the User Manual.

- After the download, please double click the downloaded file (*.zip) to unpack it or unpack it manually. This will place two update files (*.SWU and *.lic) onto your computer.
- Format your USB Stick using the exFAT file system.
- If not done beforehand, prepare the USB memory stick for use with ALEXA 35 by connecting it to the camera. Then choose *Menu > Media > Prepare USB Medium...* in the camera's menu on the MVF-2 flip-out monitor and press CONFIRM. This will create the required folder structure on the USB stick.
- Connect the USB stick to your computer and place the downloaded *.SUP file in the folder ARRI/ALEXA35/SUP on the USB stick. Then place the downloaded *.lic file in the folder ARRI/ALEXA35/LICENSES on the USB stick.
- SUPs contain not only updates for the camera body but also for the MVF-2 viewfinder and the lens mounts. Therefore, the MVF-2 viewfinder and the lens mount should be attached to the camera when performing an update.
- Make sure the camera is connected to a power supply (best) or is powered with a full battery to avoid power loss during the update process.
- Perform a factory reset on the camera with the menu item *Menu > Setup > Factory Reset...*
- Connect the USB stick to the camera and navigate to the menu item *Menu > System > Update > Update Camera...*
- Select the SUP file from the list and click the item.
- In the following message, press INSTALL to start the installation.
- Press CONFIRM to start the installation.
- The camera will present a screen presenting the update progress. Please do not shutdown the camera or unplug power until the camera reboots.
- After the update process has finished, a success message is displayed. Please note, that the update can take up to 20 minutes.
- Make sure you set the correct time zone in *Menu > System > System Time & Date*.
- If the MVF-2 viewfinder or LPL lens mount were not connected to the camera during the update process, the camera will still store the new software for those devices. The next time those devices are connected and have an older software than the one stored in the camera, the camera will offer to update those devices.

Appendix A: ALEXA 35 Recording Formats

Recording Format				Sensor Photosites					Recorded Pixels		Compact Drive Max. fps		Recording Time*		
Codec	Sensor Mode	Recording Resolution	Recording File Setting	H	V	H	V	∅	H	V	1TB	2TB	1TB	2TB	
						mm	mm	mm							
ARRIRAW	4.6K 3:2 Open Gate	4.6K (4608 x 3164)	ARRIRAW	4608	3164	27.99	19.22	33.96	4608	3164	35	75	0:28	0:56	
	4.6K 16:9	4.6K (4608 x 2592)	ARRIRAW	4608	2592	27.99	15.75	32.12	4608	2592	45	75	0:34	1:08	
	4K 16:9	4K (4096 x 2304)	ARRIRAW	4096	2304	24.88	14.00	28.55	4096	2304	55	120	0:43	1:26	
	4K 2:1	4K (4096 x 2048)	ARRIRAW	4096	2048	24.88	12.44	27.82	4096	2048	65	120	0:48	1:37	
	3.3K 6:5	3.3K (3328 x 2790)	ARRIRAW	3328	2790	20.22	16.95	26.38	3328	2790	55	100	0:43	1:27	
	3K 1:1	3K (3072 x 3072)	ARRIRAW	3072	3072	18.66	18.66	26.39	3072	3072	55	100	0:43	1:26	
Apple ProRes	4.6K 3:2 Open Gate	4.6K (4608 x 3164)	422 HQ, 4444, 4444 XQ	4608	3164	27.99	19.22	33.96	4608	3164	60	60	1:00	2:01	
	4.6K 16:9	4K (4096 x 2304)	422 HQ, 4444, 4444 XQ	4608	2592	27.99	15.75	32.12	4096	2304	75	75	1:33	3:07	
	4K 16:9	4K (4096 x 2304)	422 HQ, 4444 4444 XQ	4096	2304	24.88	14.00	28.55	4096	2304	100	90	100	1:33	3:07
			UHD (3840 x 2160) 4444 XQ	4096	2304	24.88	14.00	28.55	3840	2160	120	105	120	1:46	3:32
			2K (2048 x 1152)	422 HQ, 4444, 4444 XQ	4096	2304	24.88	14.00	28.55	2048	1152	120	120	6:00	12:01
			HD (1920 x 1080)	422 HQ, 4444, 4444 XQ	4096	2304	24.88	14.00	28.55	1920	1080	120	120	6:47	13:34
	4K 2:1	4K (4096 x 2048)	422 HQ, 4444 4444 XQ	4096	2048	24.88	12.44	27.82	4096	2048	120	100	120	1:45	3:30
	3.3K 6:5	3.3K (3328 x 2790)	422 HQ, 4444, 4444 XQ	3328	2790	20.22	16.95	26.38	3328	2790	75	75	1:35	3:10	
		4K 2.39:1 Ana 2x	422 HQ, 4444, 4444 XQ	3328	2790	20.22	16.95	26.38	4096	1716	90	90	2:05	4:10	
	3K 1:1	3K (3072 x 3072)	422 HQ, 4444, 4444 XQ	3072	3072	18.66	18.66	26.39	3072	3072	90	90	1:33	3:07	
		3.8K 2:1 Ana 2x	422 HQ, 4444, 4444 XQ	3072	3072	18.66	18.66	26.39	3840	1920	100	100	1:59	3:59	
	2.7K 8:9	UHD 16:9 Ana 2x	422 HQ, 4444, 4444 XQ	2743	3086	16.66	18.75	25.08	3840	2160	100	100	1:46	3:32	
	2K 16:9 S16	2K (2048 x 1152)	422 HQ, 4444, 4444 XQ	2048	1152	12.44	7.00	14.27	2048	1152	120	120	6:00	12:01	

* Recording times in hours:minutes at 24 fps. Times for Apple ProRes given for ProRes 4444