ALEXA
XR MODULE
ALEXA XT
ALEXA XT M
ALEXA XT PLUS
ALEXA XT STUDIO
ALEXA FIBER REMOTE

ALEXA XT Studio Features

Optical Viewfinder

An optical viewfinder offers the most comfortable, accurate and efficient operating experience by showing a bright and sharp full color image through the taking lens. Since they exhibit no motion blur, judging focus during movement is easy, which can save hours of aggravation and re-takes.

With electronic viewfinders, the image from the imaging sensor always needs processing before it can be displayed in the viewfinder, resulting in a delay that is under one frame with the ARRI electronic viewfinder EVF-1 and that can be up to multiple frames with other electronic viewfinders. A delay of multiple frames can be especially confusing when shooting music videos or remotely operating on a crane.

Optical viewfinders show natural motion portrayal, accurate color fidelity and proper white balance, i.e. that of the scene. Operators see exactly what is happening as it happens and experience less eye fatigue. Cinematographers appreciate the ability to judge lighting through the viewfinder and to work with the camera even when it is powered down since choosing lenses, blocking, setting up shots, pre-lighting or rehearsing before the camera is powered up can save precious time on the set. For those situations, where the image is simply too dark for the optical viewfinder to see, the ALEXA XT Studio can be quickly equipped with the ARRI electronic viewfinder EVF-1.

Rotating Mirror Shutter

A mirror shutter is a mirror, located at an angle in front of the sensor, that continuously rotates. Half the time it reflects light up into the optical viewfinder and the other half it lets light fall onto the sensor. Thereby the mirror shutter makes the optical viewfinder possible and determines the exposure. The advantage of a mirror shutter is two-fold: on the one

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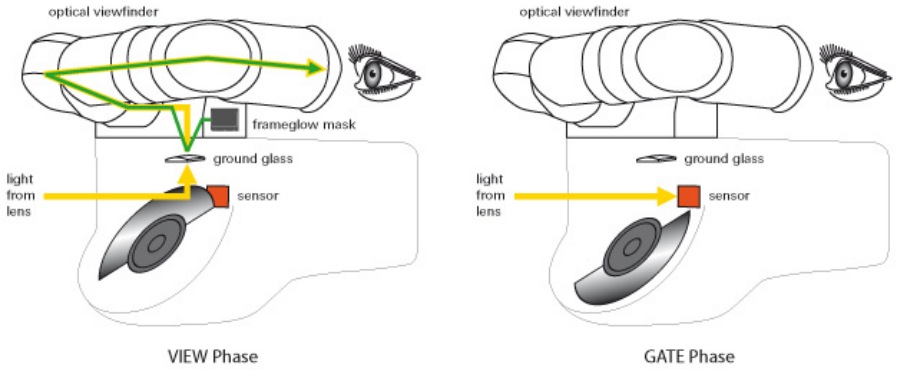
hand it does not exhibit the rolling shutter artifact of electronic shutters, and on the other it provides a natural motion portrayal that is exactly as it was with film cameras.



ALEXA XT Family Features

Faster, lighter and more affordable ARRIRAW

All ALEXA XT cameras come with the new XR Module (Extended Recording), a side panel that was co-developed with Codex and that replaces the previous SxS Module. The XR Module allows in-camera ARRIRAW recording up to 120 fps onto exceptionally fast and rugged 512 GB XR Capture Drives. This not only makes for a smaller, lighter and more affordable camera package, it also simplifies setup and operation while avoiding unnecessary cabling. The result is an even faster and more reliable way to record ARRIRAW, ALEXA's highest quality image output.

Once removed from the camera, the XR Capture Drive offers a number of different paths into post for every budget and time schedule demand, using the proven Codex workflow. First, the small and affordable Single Dock USB3 allows safe copying of data to a Retina MacBook Pro. Second, the Dual Dock can make clones of XR Capture Drives and connect to a Mac Pro via SAS (Serial Attached SCSI) for high speed copying. The included software provides all features for an efficient digital lab. And third, the Codex Vault is a modular, rugged and complete solution for copying, archiving, metadata management, reporting or dailies creation with the greatest ease and highest speed.

Faster and longer ProRes/DNxHD in-camera recording

In addition to ARRIRAW it is also possible to capture ProRes or DNxHD (1) to an XR Capture Drive for significantly

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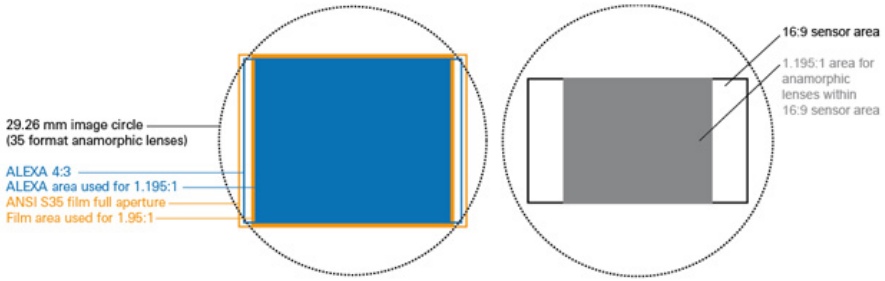
longer recording times as well as ProRes 4444 recording at 120 fps. ProRes 4444 at 24 fps can be recorded for a total time of 107 minutes. And recording onto SxS PRO cards is also possible: with an SxS Adapter it is possible to record ProRes or DNxHD to a single SxS PRO card, thus protecting the inventory of existing cards.

As an extra feature, the black protective top cover of the XR Module can be replaced with red, green, blue, yellow or white top covers to identify A, B, C, D, E and F camera units.

(1) DNxHD recording not possible with SUP 8.0, planned for SUP 9.0

True anamorphic with a 4:3 sensor

For the most effective use of anamorphic lenses, each ALEXA XT model is equipped with a 4:3 sensor of the same size and shape as a Super 35 mm film frame. This is perfect for the 1.195:1 aspect ratio image area needed by anamorphic lenses. An aspect ratio of 1.195:1 results from the anamorphic aspect ratio 2.39:1 divided by the anamorphic horizontal squeeze factor of 2. A 4:3 sensor is crucial for delivering the unique and cinematic widescreen look that can trace its origins back to the CinemaScope films of the 1950s. It is a look that has long been appreciated by Lincoln 1cinematographers, directors and the viewing public. An anamorphic de-squeeze license is included with all ALEXA XT cameras, as is a high speed license for filming at up to 120 fps. The 4:3 sensor is also useful for non-anamorphic productions as it permits significant reframing of the image in post, similar to shooting 4-perforation 35 mm.



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More efficient VFX through lens metadata
Lens metadata is invaluable for efficient working on the set and for a speedy VFX post workflow, which is why all ALEXA XT models are equipped with an LDS lens mount and is why all ALEXA XT models insert a plethora of metadata into all recording and output formats.

On the set, streaming lens metadata is used for an overlay in the ALEXA display, viewfinder or MON OUT image. In addition, it is used by the Wireless Compact Unit WCU-4 for an easy to use graphical lens display and. At the same time, the HD-SDI image carries streaming lens metadata (as raw encoder pulses and as interpreted lens data) which can be displayed on some monitors or used for real-time virtual set applications.

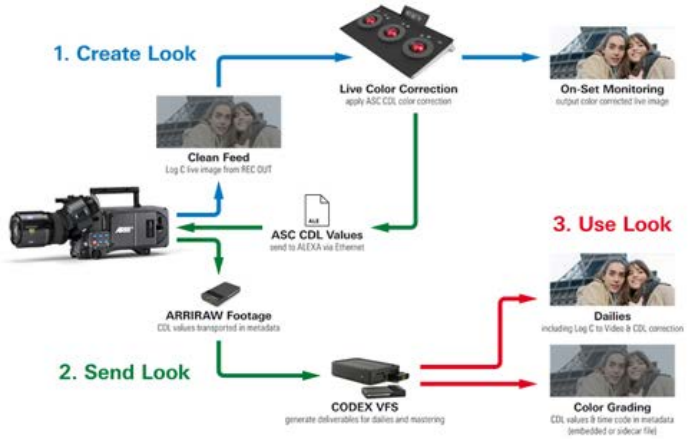
Compositing in post is greatly sped up through the use of lens metadata carried inside the ARRIRAW, ProRes or DNxHD files. The lens metadata allows to automatically match the computer graphic (CG) images to the images taken with the real lens, a process that used to take a long time of manual tweaking in the past. In the example below, a Lincoln car was inserted through computer graphics into an image that was shot with a stunt car. The lens metadata was used to exactly duplicate the focus, depth of field, perspective and minor distortions introduced by the real lens.


Screen grabs courtesy of Andrew Sinagra, Ntropic

Over 41 ARRI lens models have LDS built-in, including the ARR/Zeiss Master Anamorphics, ARRI/Zeiss Master Primes, ARRI/Zeiss Master Macro 100, ARRI/Zeiss LDS Ultra Primes, ARRI/Zeiss Master Zoom 16.5-110, ARRI/Fujinon Alura Lightweight Zoom 15.5-45 and ARRI/Fujinon Alura Lightweight Zoom 30-80. Support for the Cooke /i system is in the works. For all other lenses it is possible to gather lens metadata by using an ARRI lens motor and a lens table stored in the camera (Lens Data Archive).

Safely carry CDL color correction metadata into post

An increasing number of productions are setting up on-set color correction systems so the cinematographer can create and monitor a pre-grade of the footage. The resulting ASC CDL (American Society of Cinematographers Color Decision List) can be automatically transferred to the ALEXA XT cameras and stored as ARRIRAW metadata, for fast and convenient retrieval in post.



Viewfinder Mounting Bracket VMB-3

To provide maximum comfort for the operator, the new Viewfinder Mounting Bracket VMB-3 has a much stronger and more rigid design, partially achieved through the use of two 15 mm lightweight rods. These rods also facilitate rapid changes in camera support, i.e. from a tripod to a crane or Steadicam, since accessories such as lens motors or follow focus units can be hung from them rather than cluttering up the base plate. A special anodizing process is used on all moving parts for a very hard yet low-friction surface and a bubble level allows for speedy leveling of the camera.

Also available as a separate accessory is the new Viewfinder Extension Bracket VEB-3, with a more sturdy design and a fold-out arm that holds the viewfinder securely in place when moving the camera.

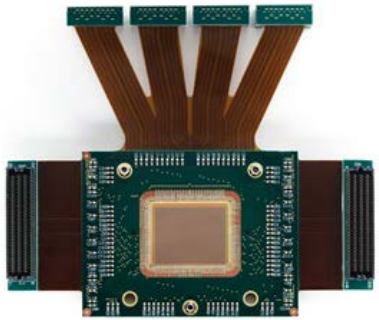
Super Silent ALEXA XT Fan

ALEXA cameras are already among the quietest digital cameras, but an even quieter fan has become available and ARRI has incorporated this new fan into the ALEXA XT models, providing an extra safety margin in very quiet or hot environments. The new fan can be identified by an orange dot on top.

ALEXA Classic and ALEXA XT Family Features

Exceptional Image Performance

All ALEXA cameras provide the best looking digital image with the least amount of fuss. They all have the same high end optical low pass filter, a custom made CMOS sensor and custom electronics and processing software. These components are carefully designed to produce images with the organic look and feel of film. The sensor provides an unequalled exposure latitude of 14 stops with special



consideration given to highlight treatment. Creating a good looking roll-off in the highlights is probably one of the most difficult tasks for any sensor designer and we have spent enormous resources at insuring exceptional highlight handling. ALEXA's high sensitivity and its ability to hold up very well even when extremely under or overexposed make it very easy to work with. ALEXA's color processing was developed by our own color scientists (who are the same people that have been working on the ARRILASER and ARRISCAN, so are intimately familiar with both film and digital color science) to render clean and natural colors, especially noticeable in ALEXAs great looking skin tones.

Efficient and Versatile Workflows

ALEXA represents the most efficient and versatile method to capture and then transport images, audio and metadata through the production process. This is achieved with a multitude of output options, support for the native codecs of the most popular non-linear editors, complete metadata and integrated color management. So disregarding if you want to shoot a low budget TV series or Martin Scorsese's next big Hollywood feature, you can configure an ALEXA for the task at hand. This also make rentals happy, who can use the same product for many different customer demands.

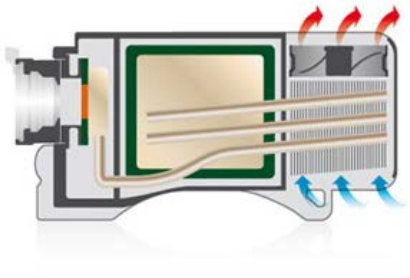
Simple and Safe Operation

We know what it is like to try to change frame rate and shutter angle at 4:00 in the morning in the rain after a long night shoot. We know that a camera needs to be very simple to operate, and it needs to make sure that you get a good image, no matter what. With ALEXA we have developed a user interface that is easy to learn and quick to operate. And the same interface is used on all models of ALEXA, with the same menu, buttons, etc., so there is no learning curve when using another model ALEXA. The hardware of the camera is designed for the best and most ergonomic use on the set, including the built-in shoulder cut-out, large numbers of accessories like the low mode set or the Remote Control Unit RCU-4, down to little details like differently shaped extrusions (eyebrows) above some buttons so the operator can feel the button's position even from the other side of the camera or

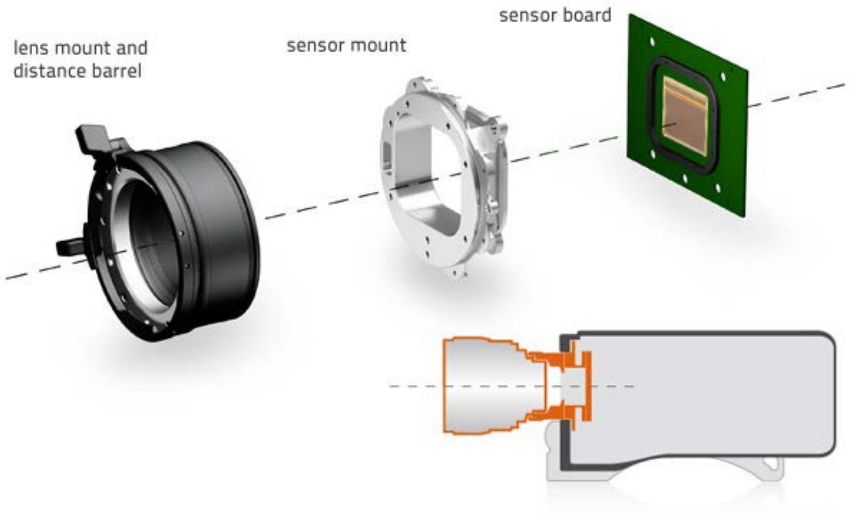
shooting in low light.

ALEXA cameras are part of a long heritage of cameras from ARRI, and we are very familiar with the sometimes horrid conditions our cameras have to endure in the field. So ALEXAs are built rugged and reliable with a sealed electronics compartment, a unique cooling system and the most stable lens/sensor mount that German engineering could devise.

The camera's electronics are housed in a sealed compartment in the center of the body. The heat generated by the sensor and the electronics is transported via heat pipes to a radiator located in a ventilation shaft at the back of the camera. A single, slow running silent fan cools the radiator. If need be, the fan can be easily exchanged. This system ensures effective, active cooling of the sensor and processing boards even in the hottest climates. At the same time it protects the electronics, thereby rendering the camera splash and dust proof.



To further improve the legendary stability of the ARRI lens mount, ALEXA is equipped with a novel lens and sensor mount design. The stainless steel lens mount is attached to a stainless steel distance barrel, which itself is attached to the sensor mount, which also holds the sensor board. The whole unit is then attached to the camera body. By creating a fixed link between lens and sensor (all the orange parts in the second drawing), a super stable flange focal depth is ensured - even if strong mechanical influences are applied to the lens mount, such as when a heavy zoom lens is not properly supported. Using stainless steel ensures minimum material expansion or contraction during temperature changes.



Open, future-proof architecture

We have worked closely with a number of innovative companies such as Apple, Avid, FUJINON, ZEISS and others to integrate their technologies. Thus ALEXA is compatible with many existing industry standards and with lenses, accessories and post production tools that are already well established all over the world, including Apple's ProRes, Avid's DNxHD, the HD-SDI standard, Gold or V-mount on-board batteries, the cmotion lens control system and both 12 and 24V accessory power outputs. The result is a future-proof system based on an open architecture; the result is simply the most complete and powerful digital production system ever built.

To protect our customers' investment in ALEXA, four major components are specifically designed to allow an easy upgrade and to add new features in order to extend its useful life. First, taking into account the rapid rate of change in storage technologies, the in-camera recording module is removable, featuring an SxS Module for ALEXA Classic cameras (which can be exchanged for an XR Module) or an XR Module for ALEXA XT cameras. Second, the camera control electronics, which comprise the whole right side of the camera, can be removed and replaced with an upgraded electronics with advanced features (like the Plus upgrade). Third, the Exchangeable Lens Mount (ELM) system allows the use of PL or Panavision lenses, further expanding creative options. And finally, the camera's software is designed in such a way that it can be quickly and easily upgraded with our free Software Upgrade Packets to provide new and exiting features like ProRes 2K or ProRes 4:3 in-camera recording.

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