ARRI

Pocket Guide

ALEXA

SUP 11.0

Table of Contents

Overview

Introduction

Welcome to the Pocket Guide for the ALEXA Classic and ALEXA XT family of cameras, which contains important preproduction and production information for an ALEXA shoot. The ALEXA platform has been designed with ease of use and user-friendliness in mind; the menu and controls are simple and intuitive, so the best way to learn ALEXA is to get your hands on the real thing. However, carrying this guide with you and combining it with other resources such as the ALEXA manual at www.arri.com/alexa/downloads or the interactive ALEXA/ALEXA XT Camera Simulator at www.arri.com/alexa/tools will ensure your readiness to take full advantage of the camera's unique and versatile features.

ALEXA

ALEXA XT

The ALEXA and the ALEXA XT family

ALEXA XT M

ALEXA XT Plus

ALEXA XT Studio

SUP 10 & 11 - New Features

ALEXA is the first and only camera to support Apple's new ProRes 4444 XQ codec. With its target data rate of 500 Mb/s (at 1920 x 1080, 30p) and low compression ratio of 1.45:1, ProRes 4444 XQ is the ideal choice for productions that are shooting for premium image quality, are looking for extreme color grading options or want to preserve the superior tonal range of ALEXA's Log C signal.

ProRes 3.2K recording format is suitable for productions requiring 4K UHD deliverables. The rescale to 4K UHD only demands a small upscale factor of 1.2x. Available to ALEXA XT and ALEXA Classic cameras with the XR Module upgrade, ProRes 3.2K is a new recording resolution that uses 3164x1778 photo sites from the sensor to record a 16:9 3.2K ProRes file. The 3.2K sensor area was chosen because it is the largest area that can still be covered by almost all Super 35 PL mount lenses.

In addition the new ADA-5 enhanced debayering algorithm further improves ALEXA's image quality in all already available ALEXA recording resolutions as well as 3.2K recording.

180° image rotation allows Steadicam operators to flip their rig upside down for low mode shooting and it rotates the image for the ARRI Ultra Wide Zoom UWZ 9.5-18/T2.9. The rotation applies to EVF, MON-OUT and REC-OUT. Internal recording is not affected.

For high end workflows that utilize color on the set, SUP 10 extends the number of recording modes that support two independent HD-SDI outputs. Previously only available in 16:9/HD/regular speed, other recording modes now also benefit from a clean Log C signal on REC OUT while a Rec 709 signal with overlays and an optional ARRI Look File can be output on MON OUT.

SUP 11 Feature Overview

- New ARRI Debayer Algorithm ADA-5
- ProRes 3.2K recording up to 30fps
- ARRIRAW Checksum in the file header
- Framelines saved in ARRIRAW Metadata
- Support for Lens Data Encoder LDE-1
- Support for Rev C SxS PRO+ Memory Cards (SBP-64C and SBP-128C)
- Support for SanDisk CFast 2.0 128 GB Memory Cards
- Advanced WCU-4 support
- Updated Web Remote GUI (V2.0)
- User Button „Check last clip end“ and „Check last clip start“

SUP 10 Feature Overview

- ProRes 4444 XQ recording up to 75 fps (ALEXA XT and XR)
- Support for SxS PRO+ 64GB and 128GB cards (ALEXA Classic, XT and XR)
- 180° Image Rotation (ALEXA Classic, XT and XR)
- Open Gate Support for ALEXA M (ALEXA XT M)
- REC OUT = Clean MON OUT (ALEXA Classic, XT and XR)
- ARRIRAW 4:3 Cropped recording for 96 fps with anamorphic lenses (ALEXA XT and XR)
- Fast regular/high speed switching (ALEXA Classic, XT and XR)
- Dimmable status information (ALEXA Classic, XT and XR)
- Monochrome status icons (ALEXA Classic, XT and XR)
- Colored camera index letter (ALEXA Classic, XT and XR)
- “Lens Squeeze Factor” metadata filed (ALEXA Classic, XT and XR)
- Independent Peaking setting for playback (ALEXA Classic, XT and XR)

The Home Screen

Home Screen Soft Buttons

The soft buttons lead to screens where the respective settings can be changed. In the home screen, the following info is displayed:

FPS: Set sensor frame rate

AUDIO: Set audio preferences
When on = audio levels are shown
OFF = turned off
DISABLED = sensor is not running at sync-sound speed

SHUTTER: Set shutter angle (and turn mirror shutter on/off for ALEXA Studio)

EI: Set exposure index (and insert internal ND filter for ALEXA Studio).

COLOR: Set gamma for REC OUT output (REC) and internal recording of ProRes or DNxHD (INT).
{ blue_int_icon } = The selected ARRI Look File is applied to internally recorded footage.
{ blue_REC_icon } = The selected ARRI Look File is applied to REC OUT.
{ red_int_icon } = (blinking) The CDL server connection has been enabled, but the CDL server cannot be reached.

WB: Set white balance, consisting of a Kelvin value for red-blue correction and a CC shift value for green-magenta correction (shown as exponent).

ALEXA Studio Icons

Name	Icon	Description
Mirror Shutter	M S	Flashing Icon when the Mirror Shutter is spinning.
View Position	V	Mirror Shutter in View position
Gate Position	G	Mirror Shutter in Gate position
ND filter	ND	ND filter active

Home Screen Center Bar

TC	Displays current timecode source INT = internal TC source EXT = external TC source hh:mm:ss = timecode value without frames @24 = time base, 24 fps in this case
MASTER	Only visible when camera is in external synchronization mode (MASTER = this camera is the master, SLAVE = this camera is the slave)
	Settings sync is active so multiple cameras in external synchronization mode share the same settings
BAT 1	Voltage level of power source present at BAT connector, or percentage of remaining capacity of attached battery if it transmits this information.
BAT 2	Voltage level of battery attached to top and/or back onboard battery adapter, or percentage of remaining capacity if attached battery transmits this information.
REEL	Identifies current reel. Consists of camera index letter and reel counter.
CLIP	Identifies current clip. Consists of clip index letter and clip counter.
DUR	Duration of current clip during recording or length of last recorded clip during standby. Shown as h:mm:ss.
16:9	Active sensor mode (16:9, 4:3 or OG (Open Gate))

ProRes 2K	Displays active recording format (ARRIRAW, ProRes (HD or 2K) or DNxHD).
SxS Pro Drive	SxS PRO adapter or XR Capture Drive inserted into slot.
00:19:28	Remaining capacity of loaded magazine.
FULL	Loaded Magazine is full.
No Media	No Magazine in slot.
Type	Magazine does not support the currently selected Recording format.
SxS 1 24:26 [1]	Remaining capacity of card in SxS slot 1 in minutes. Calculated for the set frame rate and codec. Note: these are only approximate values.
SxS 1 INHIB [1]	Card 1 is write protected.
SxS 1 FULL [1]	Card 1 is full.
<	Marks the active card.
• STBY	The camera is in standby and ready to record.
• PRE	The camera is recording frames into its ring buffer.
• REC	The camera is recording.
• ERROR	An error occured. Recording is not possible. Press the INFO button for more details. If nothing is shown (neither the red/green bar), the camera works properly, but no SxS PRO card is present for recording.
INT/SxS	INT: Look INT: CDL Server active/connected INT: CDL Server active/not connected

[1] not available on ALEXA XT

Icons on Home Screen

Name	Icon	Description
General Warning		Important information waiting on the info screen. Press the INFO button for more details.
General Error		An error occurred. Press the INFO button for more details.
Temperature Warning		Slight sensor temperature offset. Image quality might be affected.
Temperature Error		Great sensor temperature offset. Image quality might be affected seriously.
Lock		Camera is locked.

Name	Icon	Description
SD Card		SD Card present. Turns orange during card access.
Grab		Still frame is being captured to the SD card. A new still frame can only be captured when this is completed.
High Humidity Mode		Sensor is in high humidity mode in very humid conditions (e.g. indoor swimming pool).
WRS Radio		WRS radio is active. Only on ALEXA Plus and Studio.

ALEXA Studio left side. Additional buttons VIEW & GATE for mirror control.

MON OUT Icons

Name	Icon	Description
General Warning		Important information waiting on the info screen. Press the INFO button for more details.
General Error		An error occurred. Press the INFO button for more details.
Temperature Warning		Slight sensor temperature offset. Image quality might be affected.
Temperature Error		Great sensor temperature offset. Image quality might be affected seriously.
Lock		Home screen is locked.
Grab		Stil frame is being captured to the SD card. A new still frame can only be captured when this is completed.
Audio		Audio recording enabled/disable

Name	Icon	Description
Peaking		Peaking enabled for EVF and/or MON OUT.
Smooth mode		Smooth mode active/in-active on EVF
Recording resolution		Displays current SxS resolution (HD or 2K).
Gamma		Displays Gamma setting for EVF or MON OUT.
Look active		A look is active/burned-in on EVF, MON OUT and/or Internal recording.
		CDL server connected/disconnected.
Return IN		Return is active, image from RET/SYNC IN input is shown.

Recording Media

For internal recording, ALEXA Classic cameras have an SxS Module. They can record QuickTime/ProRes or MXF/DNxHD files to Sony SxS PRO/SxS PRO+ cards.

ALEXA Classic cameras with an XR Module upgrade or ALEXA XT cameras have the XR Module instead, which allows them to record to XR Capture Drives, Sony SxS PRO/SxS PRO+ cards and CFast 2.0 cards. Uncompressed ARRIRAW can only be recorded to XR Capture Drives, but ProRes and DNxHD can be recorded to all three media. SxS PRO/SxS PRO+ or CFast 2.0 cards require a mechanical adapter from ARRI. XR Capture Drives share the same mechanical interface as other Codex Capture and Transfer Drives, but only XR drives can be used for recording on ALEXA cameras.

For detailed information on data- and frame-rates within the ALEXA Classic and ALEXA XT cameras have a look at our “ALEXA SUP 11 Data Rates” and ALEXA SUP 11 Max Frame Rates” documents within the “Technical Information” section at http://www.arri.com/camera/alexa/downloads.

SxS Adapter

CFast 2.0 Adapter

SxS PRO Card

SxS PRO+ Card

CFast 2.0 Card

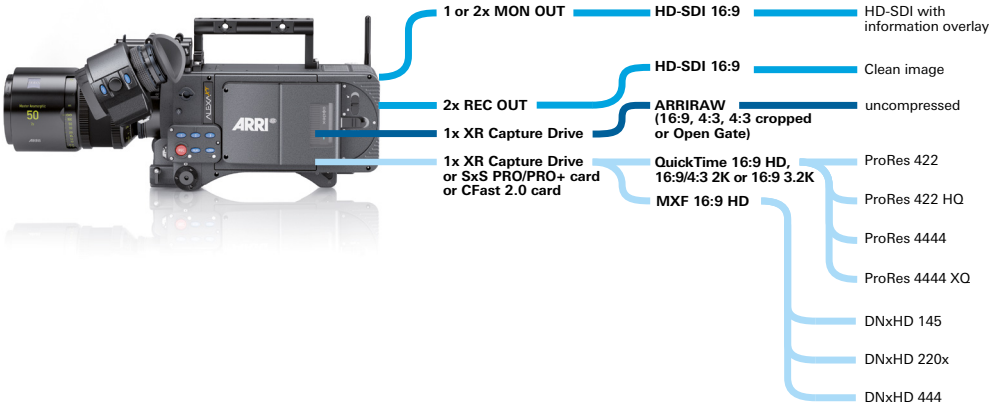
XR Capture Drive

ALEXA XT Recording Matrix

Recording Media		Internal recording onto XR Capture Drives					Internal Recording with SxS or CFast 2.0 Adapter (onto SxS PRO/SxS PRO+/CFast 2.0 card)				External recording
Recording Format		**ARRIRAW** uncompressed	**HD** ProRes & DNxHD[1]	**HD High Speed** ProRes & DNxHD	**2K** ProRes	**3.2K** ProRes[3]	**HD** ProRes & DNxHD	**HD High Speed** ProRes & DNxHD[1]	**2K** ProRes[2]	**3.2K** ProRes[3]	**HD** uncompressed
Sensor Mode	16:9	2880x1620 *(0.75-120fps)*	1920x1080 *(0.75-60fps)*	1920x1080 *(60-120fps)*	2048x1152 *(0.75-60fps)*	3164x1778 (0.75-30fps)	1920x1080 *(0.75-60fps)*	1920x1080 *(60-120fps)*	2048x1152 *(0.75-60fps)*	3164x1778 (0.75-30fps)	1920x1080 *(0.75-60fps)*
	4:3 Full	2880x2160 *(0.75-90fps)*	–	–	2048x1536 *(0.75-48fps)*	–	–	–	2048x1536 *(0.75-48fps)*	–	–
	4:3 Cropped	2578x2160 (0.75-96fps)	–	–	–	–	–	–	–	–	–
	Open Gate	3414x2198 *(0.75-75fps)*	–	–	–	–	–	–	–	–	–

[1] DNxHD 444 is not available in High Speed Mode
[2] ProRes 2K is limited to 30fps on 32GB SxS PRO cards
[3] ProRes 3.2K is available for ALEXA XT and ALEXA Classic cameras with the XR Module upgrade only.

ALEXA XT Output Overview

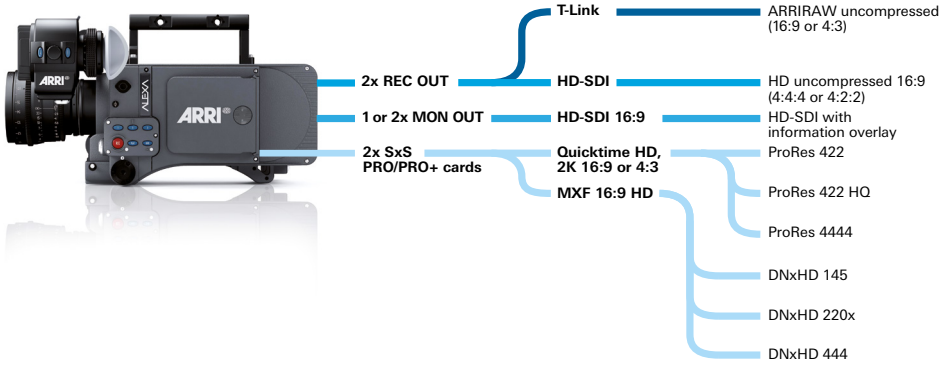


ALEXA Classic Recording Matrix

Recording Media		Internal Recording onto SxS PRO/SxS PRO+ cards			External recording via T-Link	External recording via HD-SDI
Recording Format		**HD** ProRes & DNxHD	**HD High Speed** ProRes & DNxHD[1]	**2K** ProRes[2]	**ARRIRAW** uncompressed	**HD** uncompressed
Sensor Mode	16:9	1920x1080 *(0.75-60fps)*	1920x1080 *(60-120fps)*	2048x1152 *(0.75-60fps)*	2880x1620 *(0.75-60fps)*	1920x1080 *(0.75-60fps)*
	4:3	–	–	2048x1536 *(0.75-48fps)*	2880x2160 *(0.75-48fps)*	–

[1] DNxHD 444 is not available in High Speed Mode.
[2] ProRes 2K is limited to 30fps on 32GB SxS PRO cards.

ALEXA Output Overview



ARRIRAW

ARRIRAW is the highest image quality output possible with ALEXA, delivering uncompressed, unencrypted raw image data for the highest achievable resolution, the camera's natural color response and greatest exposure latitude. Nothing is "baked" into an ARRIRAW image; processing steps like debayering, white balance, sensitivity or scaling can be optimized in post based on image content. ARRIRAW can be easily up-sampled to 4K (as has been done with Skyfall, X-Men, Avengers and many others) and is a truly future-proof archiving format that has been made public in SMPTE Recommended Disclosure Document RDD 30:2014 and RDD 31:2014. With the introduction of the ALEXA XT cameras, ARRIRAW can be recorded directly in the camera at up to 120 fps, making it easy and economical to shoot in the premium ALEXA capture format.

ARRIRAW 4:3 Cropped

Introduced in SUP 10, ARRIRAW 4:3 cropped records only the image area necessary for anamorphic lenses, thus achieving 96 fps. This not only reduces processing-time but also slims down the ARRIRAW 4:3 “full” from 9.3 MB to 8.4 MB “cropped”.

Open Gate

With the release of SUP 9.0, ARRIRAW Open Gate sensor mode has become available. Using the full ALEXA sensor area, Open Gate mode is great for VFX shows, up-sampling to 4K, image repositioning, resizing, rotating or stabilizing.

The active frame size of this format is 28.25 x 18.17 mm (image circle: 33.5 mm), or 3414 by 2198 pixels with an aspect ratio of 1.55:1. Since the Open Gate aperture is wider than a Super 35 frame, make sure that the lenses you are using actually cover the whole area. Wide angle lenses are more critical in this respect than long focal lengths. A guide is given by the ARRI online Lens Illumination Guide www.arri.com/alexa/tools.

Format	Resolution	Color Coding	File size	Data Rate @ 24 fps	Data Volume @ 24 fps	fps Range[1]
16:9 ARRIRAW 2.8K	2880 x 1620	12 bit Bayer	7 MB	1.34 Gbit/s	605 GB/h	0.75 - 120
4:3 ARRIRAW Cropped/2.6K[2]	2578 x 2160	12 bit Bayer	8.4 MB	1.61 Gbit/s	726 GB/h	0.75 - 96
4:3 ARRIRAW Full/2.8K	2880 x 2160	12 bit Bayer	9.3 MB	1.79 Gbit/s	806 GB/h	0.75 - 96
Open Gate ARRIRAW[2] 3.4K	3414 x 2198	12 bit Bayer	11.3 MB	2.17 Gbit/s	976 GB/h	0.75 - 75

[1] All speeds adjustable with 1/1000 fps precision.
[2] Open Gate and 4:3 Cropped mode is only available on ALEXA XT cameras.

ARRIRAW Converter 3.2

The ARRIRAW Converter (ARC) is a free software solution that reads, displays and renders ARRIRAW files. Since in 2005 the first ARRIRAW files from the D20 camera have been shot, the ARC has been greatly improved. In 2012 we decided to develop a completely new version of the ARRIRAW Converter which has been released at IBC 2013.

Since Version 3.0 the ARRIRAW Converter features a new user interface in combination with a feature rich tool palette. Working with ARRIRAW has become more intuitive and straight forward from browsing through the images to reviewing and finally rendering to other file formats.

To allow a quick start with ARC 3.2 we've created a series of tutorial videos on all available features. Also including the new User Pixel Mask, a feature introduced to ALEXA cameras in SUP 9.0:
www.arri.com/goto/arriraw-tutorials

For ARC 3.2 we implemented the ADA-5 Debayer and made the ARRIRAW Converter "future proof" for ALEXA65. All additional ARRIRAW formats captured with ALEXA65 cameras can be processed by ARC.

ARRIRAW Converter 3.2 is available for Mac OSX. A build for Windows operating systems is available as beta version.

Download ARC 3.2 at:
http://www.arri.de/alexa/arriraw

ARRIRAW capable software solutions

A product which has been awarded the ALEXA ARRIRAW Processing Certificate is capable of rendering ALEXA ARRIRAW images in a quality that meets ARRI's requirements. Please note that for all image processing parameters (such as sharpness, color etc.) the ARRI SDK, which is also part of the ARRIRAW Converter, is the reference.

You can find more information about working with ARRIRAW at www.arri.com/alexa/workflow. Further documents, covering ARRIRAW and other topics, such as the "ALEXA VFX FAQ", are available for download at www.arri.com/alexa/downloads.

COMPANY	PRODUCT	CERTIFIED
Adobe	Premiere Pro	✔
Adobe	Speedgrade	
Assimilate	Scratch Scratch Lab	✔
Autodesk	Flame/Lustre	✔
Autodesk	Smoke	✔
Blackmagic Design	Resolve	✔
Codex Digital	Transfer Station	✔
Colorfront	On-Set Dailies	✔
DigitalFilmTechnology	Flexxity	✔
DVS	Clipster	✔
Éclair	ColorUsDailies	✔
eyeon	Fusion	✔
FilmLight	Baselight	✔
Glue Tools	ARRIRAW Toolkit for Mac OS X	
Image Systems/ Digital Vision	Nucoda FilmMaster	✔
MTI Film	Control Dailies Enterprise Cortex: Control Dailies Cortex: Convey	✔ ✔
Pretend	Stereoid	✔
Quantel	Pablo	✔
SGO	Mistika	
The Foundry	Hiero	
The Foundry	Nuke	
Tweak	RV	

ProRes Recording

ALEXA is the first camera offering internal, ready-to-edit recording to QuickTime/ProRes files. With Software Update Packet (SUP) 7.0, all cameras received a free upgrade enabling ProRes 2K recording. Now SUP 11.0 adds 3.2K ProRes to the lineup of ALEXA XT cameras. Recording in ProRes 2K or 3.2K[3] is a cost-efficient alternative to shooting ARRIRAW, as it requires less storage space and no processing, but at the same time delivers an astonishing image quality – 3.2K is an ideal base for up-scaling to UHD delivery by only a factor of 1.2.

With the option to capture ProRes 2K in the 4:3 aspect ratio[1], the format offers true anamorphic capture with regular 2.0 anamorphic lenses and offers extra room for repositioning when using standard spherical lenses. SUP 9.0 enabled ProRes 4444 recording in High Speed Mode and SUP 10 added ProRes 4444 XQ.

ProRes 2K Image Aperture

When the ProRes recording resolution is switched from HD to 2K, the captured aperture changes from 2880 pixels / 23.76 mm / 0.935" width to 2868 pixels / 23.66 mm / 0.932" width. This allows the use of an optimized in-camera downscaler and provides the best possible 2K image output. When capturing ARRIRAW, it is common to use the full 2880 image width for processing a 2K deliverable. The ARRIRAW SDK, however, allows to process 2K images from both 2880 and 2868 pixels width to deliver an exact match to ProRes 2K footage when ARRIRAW was recorded in parallel with ProRes 2K[2].

[1] 4:3 ProRes 2K is available on ALEXA Plus 4:3, ALEXA Studio, ALEXA M, ALEXA XT, ALEXA XT Plus, ALEXA XT Studio and ALEXA XT M.
[2] This only applies to ALEXA cameras with the SxS Module. ARRIRAW T-Link output is not available in conjunction with the XR Module or on ALEXA XT cameras.
[3] ProRes 3.2K available on ALEXA XT only

For more information on using ProRes 2K in different applications, please take a look at the "ProRes 2K in Editorial" white paper, available at www.arri.com/alexa/downloads.

Format	Sensor Mode	Resolution	Bit Depth	Data Rate @ 24 fps [Mbit/s][1]	Data Volume @ 24 fps [GB/h][1]	fps Range[3] [4]
ProRes 422	16:9	1920 x 1080	10 bit	126	57	0.75 – 120
	16:9	2048 x 1152	10 bit	143	64	0.75 – 60
	4:3	2048 x 1536	10 bit	190	86	0.75 – 48
	16:9[5]	3164 x 1778	10 bit	345	155	0.75 – 30
ProRes 422 (HQ)	16:9	1920 x 1080	10 bit	188	85	0.75 – 120
	16:9	2048 x 1152	10 bit	214	97	0.75 – 60
	4:3	2048 x 1536	10 bit	286	129	0.75 – 48
	16:9[5]	3164 x 1778	10 bit	518	233	0.75 – 30
ProRes 4444[2]	16:9	1920 x 1080	12 bit	283	127	0.75 – 120
	16:9	2048 x 1152	12 bit	322	145	0.75 – 60
	4:3	2048 x 1536	12 bit	429	193	0.75 – 48
	16:9[5]	3164 x 1778	12 bit	777	350	0.75 – 30
ProRes 4444 XQ[2]	16:9	1920 x 1080	12 bit	423	191	0.75 – 75
	16:9	2048 x 1152	12 bit	482	217	0.75 – 60
	4:3	2048 x 1536	12 bit	643	290	0.75 – 48
	16:9[5]	3164 x 1778	12 bit	1165	524	0.75 – 30

[1] ProRes is a variable bit rate codec. The actual data rate varies with the image content.
[2] ProRes 4444/4444 XQ provides an alpha channel, which is not used by the ALEXA.
[3] All speeds adjustable with 1/1000 fps precision.
[4] ProRes recording speed is limited on 32GB SxS PRO cards.
[5] ProRes 3.2K is available for ALEXA XT cameras and ALEXA Classic cameras with the XR Module upgrade only. ProRes 444 XQ 3.2K is not available on SxS Pro/Pro+ cards.

DNxHD Recording

ALEXA and ALEXA XT cameras allow in-camera recording of 1920 x 1080 (16:9) DNxHD encoded MXF files onto SxS PRO cards, CFast 2.0 cards2 or XR Capture Drives2. With an installed DNxHD license, ALEXA users can choose between MXF/DNxHD or QuickTime/ProRes recording codecs. ALEXA's MXF/DNxHD material can be edited in Avid Media Composer Version 5.5 and later without transcoding.

The Material eXchange Format (MFX) is a core media container technology for nonlinear workflows. An MXF container file can "wrap" different types of video and audio material along with associated metadata. The internal structure of MXF files is defined by the so-called Operational Patterns.

ALEXA cameras record DNxHD encoded images together with sound and embedded metadata in an MXF container file using the Operational Pattern 1a (OP1a) file structure. This is ideal for both camera acquisition and archiving since audio and video is always kept together and no data is lost if recording is interrupted for any reason. An Avid Media Composer does not need to transcode this material, as it already is available in a native DNxHD codec.

To get more information about working with ALEXA DNxHD material, please take a look at the "MXF / DNxHD White Paper" which is available at www.arri.com/alexa/downloads.

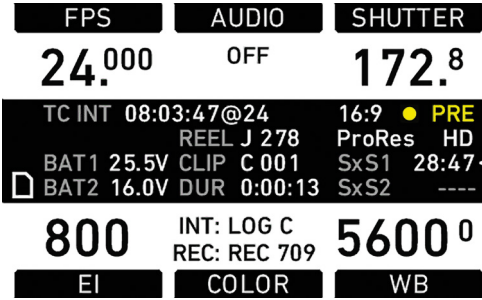
Format	Sensor Mode	Resolution	Bit Depth	Data Rate @ 24 fps [Mbit/s]	Data Volume @ 24 fps [GB/h]	fps Range[1]
DNxHD 115	16:9	1920 x 1080	8 bit	116	52	0.75 – 120
DNxHD 220x	16:9	1920 x 1080	10 bit	176	79	0.75 – 120
DNxHD 444	16:9	1920 x 1080	10 bit	352	159	0.75 – 96

[1] All speeds adjustable with 1/1000 fps precision
[2] CFast 2.0 cards and XR Capture Drives can only be used on cameras with XR Module.

Features added in prior SUP versions

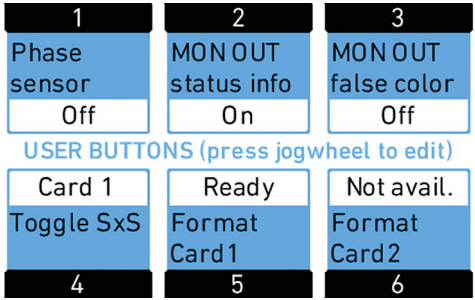
Pre-recording

This feature allows you to roll the camera before you press the REC button, so you won't miss the shot. With pre-recording enabled and active, the camera will continuously write frames into a ring buffer. As the actual take is started with a second press of the REC button, the camera keeps the content of the ring buffer and appends frames into a single clip, until the recording is stopped. Pre-recording is only available for ProRes codecs.



Phase-Button

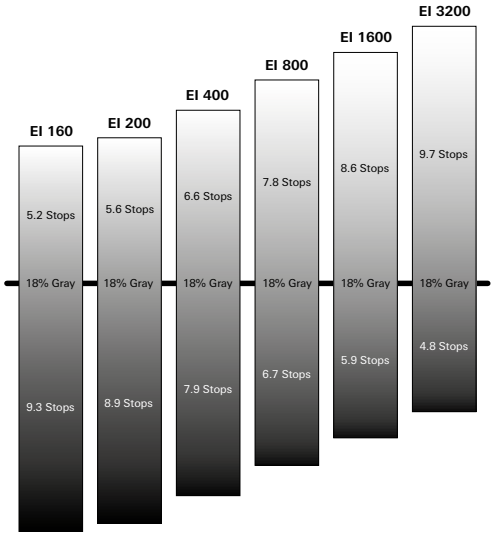
The new USER button function called "Phase sensor" increases the sensor frame rate by 0.2 fps for as long as the assigned user button is being pressed. When shooting e.g. a CRT monitor, you may see a horizontal black bar (video blanking interval) across the CRT screen in the EVF or the MON OUT image. The Phase sensor function allows you to move that black bar out of the frame. The phase-function is only available in standby and with time code set to REC RUN.



Working with ALEXA

Exposure Index

While ALEXA's 14+ stops of exposure latitude and unique highlight handling approaches that of film, there is one major difference between the way film and digital cameras behave: with digital cameras, a change in EI will shift how many stops are available above and below 18% grey – each EI step shifts the location of 18% grey. What is special about ALEXA, however, is that its wide exposure latitude is available at all EI settings.



As a shortcut, we have come up with the following method of writing ALEXA's exposure index:

EI $160^{+5.0}_{-9.0}$ EI $200^{+5.3}_{-8.7}$ EI $400^{+6.3}_{-7.7}$ EI $800^{+7.4}_{-6.6}$ EI $1600^{+8.4}_{-5.6}$ EI $3200^{+9.4}_{-4.6}$

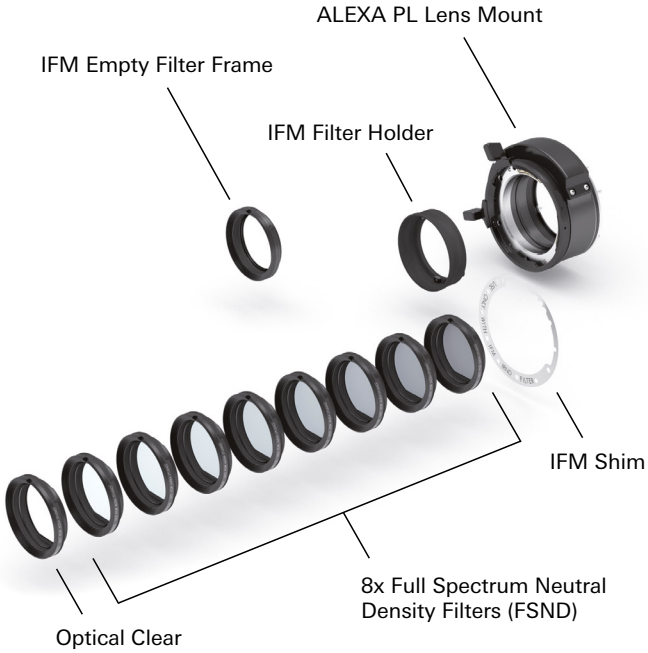
Values next to the exposure index are the number of stops above and below 18% grey. These values are for Log C. Rec 709 has 0.5 stops fewer in the low end at EI 160, 0.4 stops fewer in the low end at EI 200 and 0.2 stops fewer in the low end at EI 400. Otherwise they are the same.

Working with ND filters

While traditional ND filters work great for film, for digital cameras we recommend the use of the ARRI Full Spectrum Neutral Density (FSND) filters. Alternatively, use ND filters that have a built-in far-red blocker. Traditional ND filters should only be used up to an ND 0.9. A single filter that combines a ND and a far-red cut off generally yields better results and fewer reflections than a traditional ND filter stacked on top of a separate IR-cut off filter.

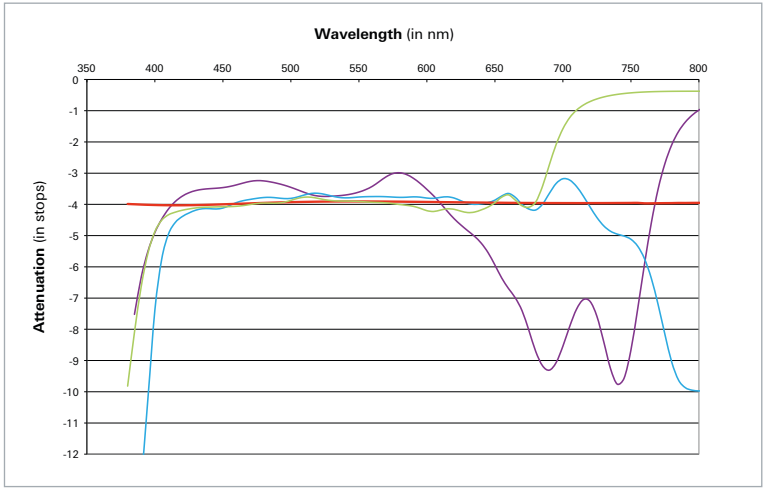
FSNDs & In-camera Filter Module (IFM-1)
With the launch of ALEXA XT a filter holder mechanism is available for a set of eight FSND (Full Spectrum Neutral Density) filters. In comparison to IRNDs which show a color shift at higher densities or ordinary NDs which show a significant color shift at higher densities, the FSNDs offer an even light attenuation across the whole spectrum (see next page). The filter holder is pre-installed on ALEXA XT cameras (except ALEXA XT Studio) and can be easily retrofitted to ALEXA Classic cameras.

The ALEXA Studio and ALEXA XT Studio have a built-in motorized ND with a density of ND 1.3 (4.3 stops), which can be moved in and out of the optical path. The advantage over classical ND filters is that it is located behind the mirror shutter, so the optical viewfinder image stays bright.


ALEXA PL Lens Mount
IFM Empty Filter Frame
IFM Filter Holder
IFM Shim
8x Full Spectrum Neutral Density Filters (FSND)
Optical Clear

Working with ND filters cont.

FSNDs in comparison



False Color Exposure Check

The false color exposure check for the electronic viewfinder and/or MON OUT output measures the camera image, tints certain signal levels in a distinct color and shows the rest as a black-and-white image. The false color exposure check is based on the color processing set for the respective output signal path.

So if you have the viewfinder set to Rec 709, the false color exposure check will be based on the Rec 709 image. If you have the MON OUT at the same time set to Log C, the false color exposure check for MON OUT will be based on Log C.

Color	Level	Description
red	99 – 100%	White clipping
yellow	97 – 99%	Just below white clipping/white shoulder
pink	52 – 56%	One stop over medium gray (Caucasian skin)
green	38 – 42%	18% neutral gray
blue	2.5 – 4.0%	Just above black clipping/black slope
purple	0 – 2.5%	Black clipping

Color Spaces

The ALEXA or ALEXA XT can deliver the captured footage with "Video Rec 709" or "Log C ALEXA wide gamut" encoding.

Video - Rec 709
“Rec 709” is short for the International Telecommunication Union’s ITU-R Recommendation BT.709 - the output format for a traditional television workflow. Since the Video - Rec 709 encoding from an ALEXA follows this standard for displaying images on video monitors, ALEXA Rec 709 images can be directly displayed on monitors or used for editing and dailies review. Without the need for color space conversion, ALEXA Rec 709 images can be processed by HD video postproduction gear in real time. While providing somewhat reduced choices in color grading, Video - Rec 709 maintains ALEXA’s wide exposure latitude, cinematic look and natural color rendition and offers the fastest workflow for any HD video-based infrastructure.

Color comparison: split image Video/Log C

Color Spaces cont.

Log C

The “C” in Log C is derived from “Cineon”. Cineon was the digital film scanning, processing and yrecording system developed by Kodak in the 90s. It is also the name of a file format that contains density data from scanned negative film. Density is a logarithmic measure of the opacity of the film. The relation of the density to the film’s exposure is called the characteristic curve of the film. Each stock has its own characteristic curve, but the overall shape is always the same.

ARRI introduced a scene based encoding for their camera data, which, because of the similarity to the Cineon standard, was named “Log C”. With Log C encoding, the signal level increases by a fixed amount with each increase of exposure measured in stops. Log C images offer the original ALEXA-specific wide gamut color space and are ideal to carry image information.

Viewing and Monitoring Log C

Shooting images in Log C delivers the best basis for the colorist's work, as it provides the camera's full latitude in an unconfined color space.
However, when viewed directly, Log C images look flat with desaturated colors. To correctly display Log C material on an HD monitor (Rec 709) or in a digital projection (P3), it needs to be tone-mapped and transformed into the target color space. This image conversion can be performed using a 3D Look Up Table (LUT).
When recording Log C or ARRIRAW, the MON OUT is typically set to display Rec 709 video. This activates an internal Log C to video conversion LUT on the output. The same applies if the REC OUT is

used, for example, to present a clean video feed to the director. When an on-set color correction system is used to apply live looks to the camera image, the REC OUT is typically set to Log C output. The color corrector then applies the settings in Log C and converts the output to REC 709 video using a 3D LUT. ARRI provides these LUTs through the online ARRI LUT Generator at www.arri.com/alexa/tools.

Recording Codecs

Log C material is best recorded using a 4:4:4 codec (ProRes 4444, ProRes 4444 XQ or DNxHD 444). The top quality 4:2:2 codecs (ProRes 422 HQ and DNxHD 220x) will also provide acceptable results in Log C, but due to the higher compression ratio, grading images recorded with these codecs may exhibit artifacts. We do not recommend the Log C gamma for codecs with an even higher compression ratio.

Linear

Visual effects often work with linear light encoded material. The ARRI LUT Generator can produce LUTs that will convert Log C material to sensor linear encoding. The linearization will preserve all image information. It is therefore possible to do round-trip conversions from Log C to linear and back to Log C.

ARRI LUT Generator

The ARRI LUT Generator can output 1D and 3D LUTs for a wide range of common postproduction tools. It is available online at www.arri.com/alexa/tools.

In-Camera Look Files

ARRI Look Files are editable XML files that can apply a customized look to all outputs (EVF-1, MON OUT, REC OUT, ProRes and/or DNxHD recording) that are set to Rec 709.
A look file can be created based on a Log C DPX grab or a Log C QuickTime clip that was stored by the camera. It contains parameters for saturation, printer lights controls (RGB offsets) and for lift/gamma/gain, similar to the CDL controls. Optionally, a look file may also include a freeform curve (grey scale tone map LUT) that will be applied instead of the standard Log C to Video tone mapping curve.
The free ARRI Look Creator (ALC) allows the creation of camera look files based on Log C DPX frame grabs. Looks can also be created with third party software Pomfort Silverstack SET and Colorfront On-Set Dailies.
ARRI Look Files can be saved to an SD card and imported into the camera. One Look File can be activated at a time and applied to the different image paths individually. It is possible, for instance, to record a clean Log C image onto the SxS PRO card while outputting a Rec 709 image with a look applied on the MON OUT output. As soon as a Look File gets applied to any output, the data of the Look File is stored in metadata.

Apply Look File
look embedded and/or burnt-in

SxS PRO Card
look embedded in file header and/or burnt-in

HD
look embedded and/or burnt-in

ARRIRAW
look embedded in file header

REC OUT

Image with Look applied
save as cineon, dpx, jpeg or tiff

2. Use Look

Look File
copy *.xml file to SD card

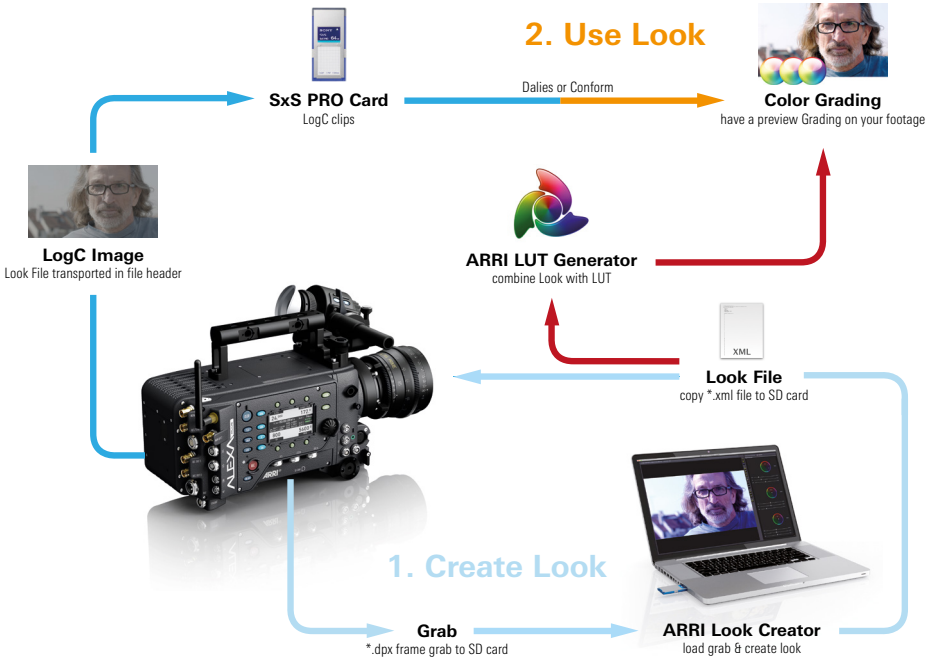
1. Create Look

Grab
*.dpx frame grab to SD card

ARRI Look Creator
load grab & create look

Non-Destructive Look Files

The Look File does not only go into ALEXA where it is embedded in the metadata/file header, but it is also used in the ARRI LUT Generator at http://www.arri.com/alexa/tools. The ARRI LUT Generator incorporates the Look File into a LUT. The LUT on the other hand is used e.g. in a color grading application where it serves as a reference point for the grading artist. In this way the director of photography's vision is being transported directly to post, where the actual 'development' of the images takes place.


2. Use Look
SxS PRO Card
LogC clips
Dalies or Conform
Color Grading
have a preview Grading on your footage
LogC Image
Look File transported in file header
ARRI LUT Generator
combine Look with LUT
XML
Look File
copy *.xml file to SD card
1. Create Look
Grab
*.dpx frame grab to SD card
ARRI Look Creator
load grab & create look

ASC CDL Looks

The alternative to ARRIs in-camera look files is to send a clean Log C signal from the camera's REC OUT to an on-set color correction tool, such as FilmLight Truelight, Technicolor DP Lights or Pomfort Live Grade, and apply an ASC CDL (American Society of Cinematographers Color Decision List) color correction to the live camera feed for monitoring. The ASC CDL standard is supported by a wide range of devices. Color correction settings that were made during the shoot are logged with time code and can be output in an Avid Log Exchange (ALE) file.

The ALE file then can then be used in a color correction system to automatically apply the color corrections when deliverables will be created. ALEXAs with an XR Module and Codex Onboard recorders can be connected to any color corrector offering the Truelight CDL Protocol via Ethernet and automatically capture the ASC CDL correction values with the camera footage. The Codex VFS can use the color correction settings and automatically apply them when generating files. On ALEXA XT/XR cameras, the CDL values will be embedded within the header of each ARRIRAW frame.

1. Create Look

Live Color Correction
apply ASC CDL color correction

On-Set Monitoring
output color corrected live image

Clean Feed
Log C live image from REC OUT

3. Use Look

Dailies
including Log C to Video & CDL correction

ALE

ASC CDL Values
send to ALEXA via Ethernet

ALE

Color Grading
CDL values with time code in ALE file

ARRIRAW Footage
CDL values embedded in file header

2. Transport Look

CODEX VFS
generate deliverables for dailies and mastering

ARRIRAW Footage
CDL values embedded in file header

Legal and Extended Range

A 10 bit legal range signal uses digital code values 64 to 940 to represent the camera's full contrast range from black to white. In an extended range signal, the same range is represented by code values 4 to 1019. Extended range encoding does not provide a higher dynamic range, nor does legal range encoding limit the dynamic range that can be captured. It is only the quantization (the number of lightness steps between the darkest and brightest image parts) that is slightly increased (about 0.2 bits). The same applies for 8 bit (0-256 range) or 12 bit (0-4096 range) signals.

An ALEXA always records ProRes and DNxHD clips using legal range encoding, as required by the codec specifications. Most editing or post production tools automatically transform the legal range files to e.g. computer graphics RGB full range (0-1024) for display.

Note: Some recorders will allow to record e.g. ProRes clips in extended range. If this material is brought into FCP, for example, the application displays values outside the legal range as “superblack” and “superwhite”, but as soon as an RGB filter layer is applied, those values are clipped.

p and psf on REC OUT and MON OUT

The ALEXA REC OUT and MON OUT scan format can be set progressive (p) or progressive segmented frames (psf). Progressive outputs a whole frame, while psf splits the frame into two segments, mimicking the output format of interlaced images. Progressive mode looks better and has less delay than psf. Psf enables compatibility to devices that only understand interlaced signals for certain frame rates; some monitors or video transmitters work better with psf, which is why that option exists. You will have to test your monitors and video transmitters to see what works best.

Note that this scan format setting is only for REC OUT and MON OUT and has no influence on the ALEXA internal recording or ARRIRAW T-link, which are always progressive.

Metadata Overview

Metadata is a set of data that describes and gives information about other data (sometimes called the 'essence'). ALEXA and ALEXA XT always records as much metadata as is available. This additional information makes documentation easier as the metadata is stored within the image files so it cannot get lost.

A range of automatic and human-readable data is being delivered by the ALEXA camera; this data makes work in post much easier: knowing exposure index, gamma and white balance information, for example, is essential for creating dailies or color grading. Reel number, project fps, date and time become important when combining images and sound from different sources.

Metadata in the ALEXA appears in several different ways: embedded in the ARRIRAW header, QuickTime metadata atom and ARRI Digital Meta Data (ADMD) atom, MXF metadata XML, Final Cut Pro 7 XML and Avid Log Exchange (ALE) file. These atoms or text based files can be parsed by e.g. editing software and offer the accompanying information mentioned above to the application and its user.

For more information on the metadata have a look at our whitepaper at www.arri.com/alexa/downloads.

Lens Data System
By combining the ALEXA XT Series, ALEXA Plus, ALEXA M or ALEXA Studio camera with lenses equipped with a Lens Data System (LDS) PL-Mount additional frame by frame lens metadata for use in VFX work will be acquired. When using a non-LDS lens in combination with the ARRI Controlled Lens Motors a profile for the lens can be created within the Lens Data Archive (LDA); by doing so the ALEXA camera can compensate for the missing sensors inside the lens by reading the motor's position and calculating the current focus, iris or zoom value.
A guide on how to create an entry for an unknown lens can be found on page 62.

WCU-4
controls camera via white radio

Live update of Lens Data Display
to keep the shot in focus

3. Using Lens Data

VFX Department
use Lens Data for effects work

ARRI META Extract
extract Lens Data from files for use in VFX

CLM-2, -3 or 4
drives focus, zoom or iris on lens

1. Lens Data creation

2. Storing Lens Data

SxS PRO Card
Lens data embedded in file header of the Quicktime clip

LDS capable lens & ALEXA camera
lenses: Master Anamorphics, Master Primes, LDS Ultra Primes or ALURA zooms or Non-LDS lenses with LDA/Wireless System
camera: any from the ALEXA XT series, ALEXA Studio, Plus/Plus 4:3 or M

Lens Data
generated by e.g. a focus pull

XR Capture Drive
Lens data embedded in file header of each ARRIRAW frame

Licenses

Licensed features expand the capabilities of an ALEXA camera. A license file is serial number sensitive and can only be used on the camera for which it has been purchased. Currently there are three licenses available: Anamorphic De-squeeze, High Speed and DNxHD Recording.

- Anamorphic De-squeeze shows a properly de-squeezed image (with or without surround view) on EVF-1 and/or MON OUT when working with 1.3x or 2x anamorphic lenses.

- The High Speed license allows recording up to 120 fps in many recording formats. High Speed mode uses the same Super 35 sensor area as Regular Speed mode (same depth of field, same angle of view).

- The DNxHD license allows in-camera recording onto SxS PRO cards of 16:9 HD Avid DNxHD 145 (8 bit 4:2:2), DNxHD 220x (10 bit 4:2:2) and DNxHD 444 (10bit 4:4:4) codecs, all within a MXF wrapper and embedded audio, timecode and metadata. ALEXA MXF/DNxHD files use operational pattern OP1a, frame wrapped, per SMPTE 2019-4-2008 and a MXF (Media eXchange Format) container (compared to the Quicktime “mov” container). MXF/DNxHD files can be linked to Avid Media Composer 5.5 or greater using the ALEXA AMA plug-in (available from the ARRI website for Windows or Mac OS X). Of course DNxHD recording is available in Regular and in High Speed mode (see High Speed license).

Pre-installed licenses

- ALEXA: None
- ALEXA Plus: None
- ALEXA M: Anamorphic de-squeeze, high speed
- ALEXA Plus 4:3: Anamorphic de-squeeze, high speed, DNxHD
- ALEXA Studio: Anamorphic de-squeeze, high speed, DNxHD

- ALEXA XT: Anamorphic de-squeeze, high speed
- ALEXA XT M: Anamorphic de-squeeze, high speed
- ALEXA XT Plus: Anamorphic de-squeeze, high speed, DNxHD
- ALEXA XT Studio: Anamorphic de-squeeze, high speed, DNxHD

ALEXA Pre-shoot Checklist

General considerations

This chapter offers checklists for typical use-cases of an ALEXA or ALEXA XT camera. During prep or pre-production, the following topics should be clear:

The basic camera parameters (e.g. timecode basis respectively project speed, choice of gamma and recording format) should always be discussed with postproduction. The choice of camera settings can be affected for different reasons. Sometimes the reasons are creative, sometimes the production pace may have an influence.

To avoid surprises, it is critical to give the planned setup a try and run a short test through the entire workflow before starting the shoot; This is the fastest and most reliable way to identify problems in the digital workflow.

During production, we strongly recommend that you make at least one verified backup immediately after the recording media is removed from the camera. We also recommend that a first quality control check should happen on location. With digitally captured footage being viewable immediately after recording, potential problems can be spotted right away and re-shooting a scene will be less of a problem. Also check the conditions of your completion bond; it is not unusual that LTO backups are a mandatory requirement for the footage to be covered.

Recording with the XR or SxS Module

Camera Setup

The following steps are necessary to prep the camera for recording.

1. Start your initial camera setup by pressing **[MENU]**, going to **User Setups > Factory reset** and press **both soft buttons** to confirm.
   Note that ARRI Look Files and Custom Frame lines need to be uploaded again after a factory reset.
2. Enter the **[PROJECT]** screen using the shortcut on the bottom right.
   - Select a **sensor mode** to shoot in 16:9, 4:3 Full/Cropped or Open Gate.
   - Pick your **recording format**, a **recording resolution** and **codec** or switch to ARRIRAW recording.
   - Set the **project frame rate**, which also acts as timecode base and playback frame rate.
   - Assign an individual **camera index** when shooting with more than one camera unit.
   - **Next reel count** usually starts with 001 and automatically increments when the camera starts recording to a new card or drive.
3. Press **[TC]** and enter the timecode **[OPTIONS]**. Assuming we'll get timecode from the Production Sound Mixer:
   - Set **Source** to **Ext LTC** and verify that
   - **Mode** is set to **Free Run** and
   - **Generator** is set to **Jam Sync**.
4. Press **[HOME]** and go to the **FPS** screen.
   - Enter **[SDI FPS]** and adapt **REC OUT** and **MON OUT** to the project frame rate.
   - Go **[BACK]**, select the **SENSOR FPS** from the list and enter by clicking the menu wheel.

Recording with the XR or SxS Module cont.

5. Back on the Home screen, enter **[COLOR] > [GAMMA]**, set **INTERNAL** to **LOG C** (not used for ARRIRAW) and everything else to **REC 709**.

From the HOME screen, adjust **[EI]**, **[SHUTTER]**, and **[WB]** as required.

Frequently used functions should be assigned to user buttons. Press **USER button** and enter the **EDIT** screen by pressing the menu wheel.

- Buttons 1 to 3 are available on the assistant and operator side, so it makes sense to assign functions that are useful on both sides, like **EVF Gamma**, **MON OUT false color**, **MON OUT peaking** or **Check last clip**.
- Buttons 4 to 6 are only available on the assistant side through the camera display.

Additional notes for shooting in other modes than the standard setup

Shooting High Speed

- When shooting at 60 to 120 fps, the **project frame rate** determines how many of the recorded frames will make up one second in playback (timecode base).
- **[TC]** should be set to **Int LTC** and **Rec Run** (Step 3).
- Switch to **[High Speed]** from the FPS screen (Step 4).

Recording ARRIRAW via T-Link (not available on ALEXA XT cameras)

- Unless you want to record ARRIRAW and e.g. ProRes in parallel, the **Codec** setting can also be used to turn off the SxS Module (Step 2). This will output a record flag (to start external recorders automatically) even if no SxS card is present in the camera.
- Go to **[MENU] > Recording > REC OUT** and set the **HD-SDI format** to **ARRIRAW 1.5G DL** or **3G SL** for normal speed or **3G DL** for high speed (up to 60fps) ARRIRAW output.
- Optionally, turn on **REC OUT fps sets sensor fps**.

Please check the user manual of the recorder for setup instructions. Operating the recording hardware needs to be taken very seriously. Only trained personnel should be responsible for handling recording equipment.

Additional notes for shooting in other modes than the standard setup cont.

Recording Media Rotation

1. Take a fresh drive/card, make sure it is not locked (SxS only) and insert it into the camera.
2. If the drive/card has been used before and still contains footage:
   - › First **verify that the material has been properly transferred**.
   - › Then use **MENU > Recording > Internal > Quick format media** to format/empty the card for recording.
   - › Ask the data wrangler to empty the drives/cards before returning them to you.
3. During recording, don't wait for a drive/card to fill up completely.
4. Remove the mag and prepare it to be backed up.
   - › Put the drive/card into its case.
   - › Visually mark the "exposed negative" with colored tape.
5. The data wrangler should perform at least the following steps:
   - › Transfer the drive's/card's contents including **checksum verification**.
   - › Depending on the recording mode, format the drive/card (ProRes/DNxHD) or clear the drive (ARRIRAW) before it is returned to the camera. This greatly reduces risk to accidently format a drive/card that has not been backed up and made it back to the camera by mistake.
   - › Put the drive/card back into its case without color tape and hand over to the loader.

Shooting Stereo 3D

1. Do not use different ALEXA models in a 3D setup. If a licensed feature will be used, the license key must be installed on both cameras.
2. Connect both cameras using the **EXT to EXT** and **Ethernet to Ethernet** cable.
3. Start the initial camera setup with a **Factory reset** on both cameras and skip the **Project** settings.
4. Enter **[MENU] > SYSTEM > External Sync**.
   - › Set the **Eye index** for each camera depending on their position.
   - › Set **Sensor sync** to **EXT master** on one camera and **EXT slave** on the other.
   - › Set **Settings sync** to **ETH master** on one camera and **ETH slave** on the other. All settings made on one camera will now automatically be set on the other.
5. Now return to **[MENU] > Project** and proceed from Step 2 in the regular camera setup.

Note: The camera that can be seen better in the 3D rig should be set to **EXT/ ETH slave** as only the slave camera indicates a missing sync between master and slave before recording.

ALEXA M/ALEXA XT M fiber maintenance

The cleanliness of the optical fiber connectors is mandatory for seamless functionality. Make sure not to touch the white fiber ends. Never leave the connectors open; immediately cover them with their rubber covers when not in use. Plug the fiber end covers together while using the fiber cable, to prevent dirt from accumulating inside the cover. Regularly check the cleanliness of the fiber end, e.g. with a fiber microscope. If dirty, clean the fiber end with the appropriate tools, such as the SMPTE cleaning pen (K2.72082.0).

Creating Lens Tables

The ARRI Lens Data System (LDS) provides frame-accurate information about the focus, iris, and zoom settings of a lens at the time of shooting. ALEXA cameras can embed this information with the images, or send it to peripheral camera equipment on set.
Embedded lens data is very helpful for VFX post-production, as it eliminates paper and guesswork. On set, the same data can be used with the WCU-4 hand unit's integrated lens data display and pre-marked focus rings for more accurate focus pulls and faster lens setups.

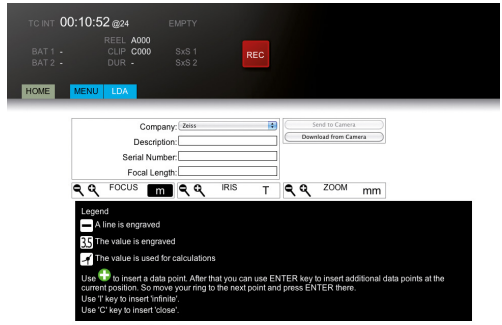
ARRI LDS lenses such as Master Anamorphics, Master Primes, LDS Ultra Primes, Alura Lightweight Zooms and the Ultra Wide Zoom deliver lens data instantly, as they have integrated encoders that determine the current lens position, as well as a lens table that interprets those encoder values. The same applies to Cooke /i lenses.
All other lenses require an external encoder and a custom lens table for lens data generation. All ARRI CLM motors include an accurate encoder that can determine the lens position. Custom lens tables can be generated with the ALEXA Webremote interface. This document explains how to create and manage custom lens files with an ALEXA Plus or Studio type camera.

Required Equipment

- An ALEXA Plus, ALEXA Plus 4:3, ALEXA Studio, ALEXA XT Plus or ALEXA XT Studio.
- One or more lens motors (CLM-2, CLM-3 or CLM-4). We recommend using one motor per lens scale. If you have only one motor available but need to add more than one lens axis, you can create the lens scales sequentially, connecting the motor to the respective controller connector. Data points do not get lost unless the web browser's session cookie is deleted.
- One lens control hand unit (e.g. WCU-4). Alternatively, lens rings can also be moved manually with the motor attached to the lens. motor attached to the lens.
- A computer with installed web browser (e.g. Firefox, Chrome, Safari). Cookies must be enabled. Internet Explorer and Opera browsers are NOT supported!
- An ALEXA Ethernet/RJ-45 Cable KC 153-S (K2.72021.0)

Creating a Lens Table

1. A prerequisite for lens table programming is the correct setup of the lens motors. Please set up the correct motor direction. If you mount the motor on the camera right side (ALEXA's display side), set DIRECTION to RIGHT. If you mount a motor on the left side, set DIRECTION to LEFT. Then calibrate the lens motors by pressing the **CAL. ALL** button.
   Each ALEXA camera comes with an built-in basic remote control web interface that can be accessed through an ethernet connection using the Bonjour protocol. Part of this web interface is the 'LDA' (Lens Data Archive) tab that allows creation and storage of new lens tables to the ALEXA camera.
2. Connect the camera to a computer
3. Open the web browser on the computer and enter the address alexa####.local, with #### being the serial number of the camera.
4. Open the 'LDA' tab in the ALEXA web browser.



A manual is available for download.

5. Enter the LDA tab and click the button **Start new session**. A browser screen with lens scales comes up. If you did not yet **calibrate** the lens motors, you can do so by hitting the Calibrate button on screen. The same applies if you are using one motor sequentially for multiple lens axes.
   The lens scales are displayed on the LDA browser screen once the respective motors have been calibrated. The green + symbol indicates the current position of the motor attached to the lens.
6. Fill in the lens descriptive fields. Lens descriptions will be shown on LDS screens or embedded as metadata:
   - **Company:** The lens manufacturer. Will not be embedded as metadata.
   - **Description:** Lens description that will be displayed in the camera and WCU-4 screen and embedded as metadata. Lens type, focal length and serial number.
   - **Serial Number:** Lens serial number will be embedded as metadata.
   - **Focal Length:** Focal length in mm. Will be shown on LDS screens and embedded as metadata. Enter '0' (zero) for zoom lenses.
7. First, select the unit of measurement (metric or imperial) by clicking on the **ft/m** icon in the upper right corner of the focus scale. If you want to program the lens for both metric and imperial units, you need to program both scales sequentially.
8. Move lens ring to the physical engraving that you want to add as a new data point. Click on the green '+' in the LDA browser scale or hit the 'Enter' button on your keyboard to open the active edit field.
9. Enter the current lens value.
10. Move the lens ring to the next position to enter the next data point.

Creating a Lens Table cont.

Data Point Options:

Each data point can have up to three characteristics that have effects on display and interpolation of the lens table. Inactivated options are displayed in grey color and crossed out.

- Data point will be indicated with a marking line.
- Data point will be indicated with a number.
- Data point will be used for interpolation.

Imperial Scales:
Enter feet values by using the prime symbol (') and enter inch values by using the double prime symbol (''). The prime symbol for feet values can be used to separate feet and inch values, e.g.

21 inches:	1'9 or 21''
14.5 inches:	1'2.5 or 14.5''
20 feet:	20'

Metric Scales:
Enter metric values as meters, e.g.

80 centimeters:	0.8
5.5 meters:	5.5
30 meters:	30

Infinity Point:
Enter 'i' to set the infinity point.

Creating a Lens Table cont.

Recommended Practice:
All three options are usually active with focus scales. However, there are sometimes just the engraved marking lines without any number in the close focus area. If you are unsure about the numerical value of such a mark, you can switch off the usage for interpolation of this data point. You might want to switch off marking lines for zoom values, if the lens does not have those lines as well. Intermediate iris steps can be programmed with a marking line only, without a number and without being used for interpolation.

Editing and Deleting Data Points
Existing data points can be moved on the lens scale by using the 'Snap' function. Hitting the Snap button underneath each lens scale will move the nearest data point to the current motor position. This can be particularly useful if an existing lens scale has a slight offset and needs adjustment.
A data point can be deleted by moving the point to the screen scale index. Once there, the icon changes from the green + symbol to a red - symbol and can be deleted by clicking on the red - symbol or pressing ENTER on the keyboard.
Click the Clear Scale button to delete all data points on the respective scale.

Saving and Downloading Lens Tables
You can save a newly created lens table into the camera's internal Lens Data Archive (LDA) by clicking the Send to Camera button. The lens file will then be processed and stored inside the ALEXA LDA User Archive section.
The Webremote will prompt an error message in case of any logical data errors within the lens file. In such a case, please check the data consistency of the lens values in the LDA browser and correct them.

Click Download from Camera to download any existing lens table from the ALEXA LDA User Archive to the computer. Save them onto an SD card if you want to load them into another camera from the SD card (SD card folder: ARRI/ALEXA/LDA).

For more information on the LDS, LDA or lens table creation have a look at our Programming Quick-Guide at www.arri.com/camera/digital_cameras/downloads/.

ALEXA XT/XR Workflows

The XR Capture Drive is formatted differently for uncompressed ARRIRAW and compressed ProRes/DNxHD recording.

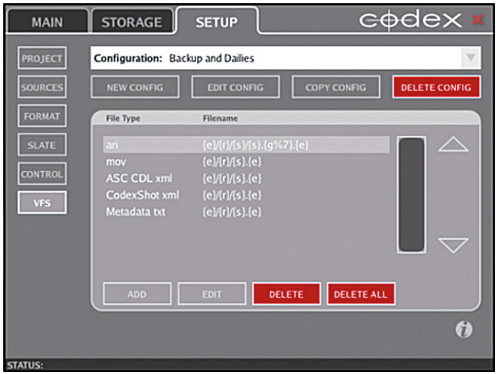
Compressed Recording Formats

When the XR Capture Drive is being formatted for ProRes or DNxHD recording, it is initialized like SxS PRO cards, as a UDF volume. This provides 240 GB storage capacity which equals over 100 minutes of 16:9 ProRes 4444 in 2K at 24 fps. Using the UDF file system maintains an overall compatibility to the established ALEXA ProRes/DNxHD workflows. XR Capture Drives, SxS PRO, SxS PRO+ or CFast 2.0 cards containing ProRes or DNxHD material can be accessed directly with the file names and directory structure in the known order.

The most affordable solution to access Capture Drives is the Capture Drive Dock (USB-3 no VFS license) that will hold one drive.

Uncompressed ARRIRAW

When the camera records ARRIRAW, the Capture Drives are initialized for use with the Codex Virtual File System, which provides 480 GB of storage capacity, or about 45 minutes of 16:9 ARRIRAW 2.8K. These drives can be accessed using Codex software running on a Mac that is connected to a Capture Drive Dock (USB3.0 or Thunderbolt), or preferably the more powerful Capture Drive Dock (SAS), which has 2 drive bays and a fast SAS interface.

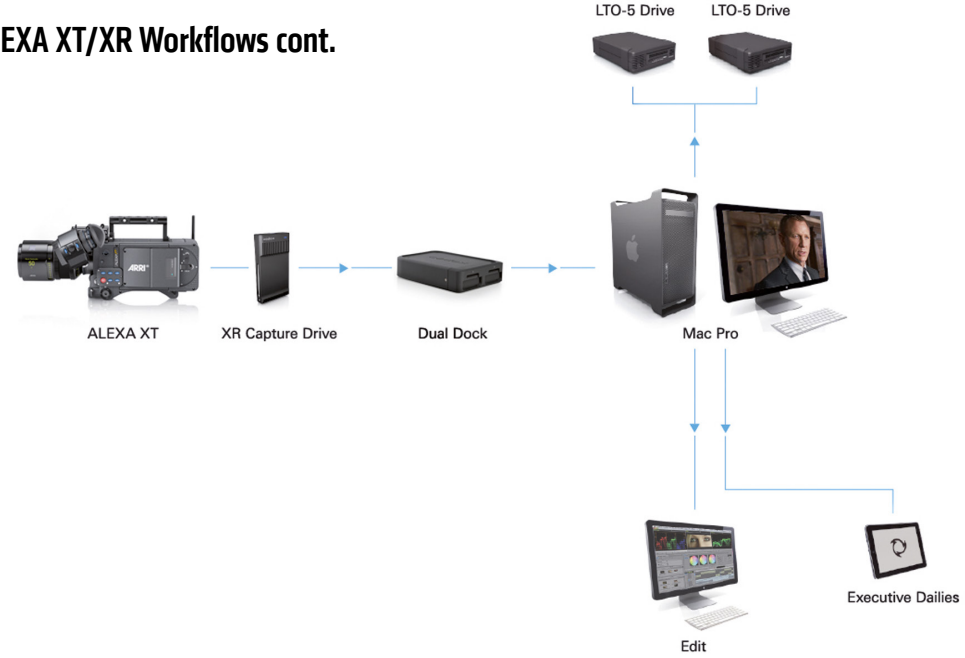


Codex also offers a standalone turnkey system called Vault for assisted location-based data management.

When an XR Capture Drive with footage is loaded, the contents are presented through the Codex Virtual File System (VFS). The VFS can present various file formats, such as readily processed DPX files and Avid DNxHD proxies next to the original ARI files on drive. Except for the recorded data, however, none of these additional files actually exist. It's only when these files are requested, that they are generated, on-demand and on the fly. Hence the term "virtual".

The file formats, file naming and directory structure that will be presented by the VFS are fully configurable through the Codex software. This makes the VFS a highly flexible tool for providing exactly the material you require, when you want it, without redundant processing and storage overhead on your drives.

ALEXA XT/XR Workflows cont.



Generating Deliverables

Functions:

- Clone XR Capture Drives to transfer drives, maintaining the VFS
- Checksum verification
- Generate files for review, edit and post
- Clear the data from the recording media

Optional Features:

- Codex Storage option, to keep footage in VFS for several days before clearing
- Codex Offloader option, for verified copies to external drives or LTFS tape

A "digital lab setup" as shown here can be used to handle all regular data management tasks during a production.

- *.ARI files are backed up to an internal or external RAID (and collected for archiving to LTO tape). Depending on the amount of footage per day, 5 TB of storage provides enough space for a few shoot days worth of ARRIRAW footage. This gives a production a few days buffer to confirm that the material is OK before the storage needs to be cleared.
- Deliverables for Dailies review and editorial can be provided via Network or shuttle disks.

ALEXA XT/XR Workflows cont.

This setup also offers several options to optimize the performance in different production environments:

- The Capture Drive Dock (SAS) allows cloning XR Capture Drives to Codex Transfer Drives. Cloning creates verified, identical copies and maintains the VFS.
- An optional Codex Storage option will transform up to 6TB of internal RAID storage into a Codex volume, which allows cloning Capture Drives to keep all data in the VFS.
- Setting up the Mac in a 10 Gig Ethernet network enables direct VFS access for postproduction tools through a network share.
- The optional Codex Offloader option expands the Software with an option to create verified copies of the VFS to connected external disks or to LTO tapes for archiving.

Scaling your Workflow

To overcome a situation where you will be faced with more footage than a setup can handle, the obvious solution is to add a second setup. Sometimes, it may be more beneficial to combine setups including a Capture Drive Dock (USB or Thunderbolt) and a Capture Drive Dock (SAS) or a Capture Drive Dock (SAS) and a Vault, and to use the different feature-sets to distribute the workload.

Sometimes (not even related to the amount of footage) higher efficiency may be gained by splitting tasks between location and post production. One example would be creating multiple deliverables for editorial, dailies projection, streaming on the web, iPad, etc., which can be done more efficiently using a dedicated dailies tool. Archiving to LTO tape also does not necessarily need to happen on location, especially if postproduction is close by and possibly connected over e.g. 10 Gig Ethernet.

Specifications and Reference

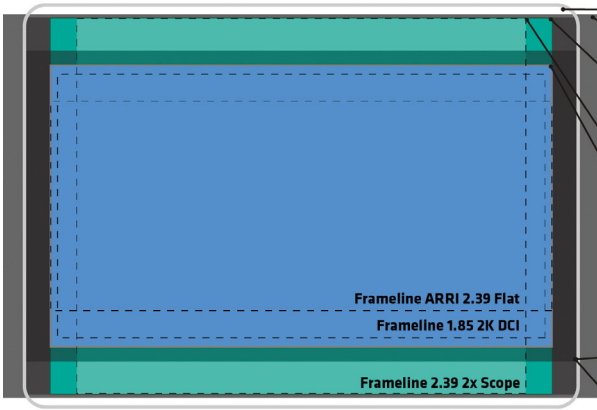
Technical Specifications

Camera Types:

ALEXA	35 format film-style digital camera with integrated shoulder arch and receptacles for 15 mm lightweight rods.
ALEXA XT	35 format film-style digital camera with integrated shoulder arch and receptacles for 15 mm lightweight rods. The ALEXA XT Series features a 4:3 sensor as well as various improvements including in-camera ARRIRAW recording, Open Gate a Lens Data Mount for all cameras
ALEXA Plus	Offers in addition built-in support for the ARRI Wireless Remote System, cmotion cvolution lens control system and ARRI Lens Data System (including Lens Data Mount and Lens Data Archive for lenses without built-in LDS).
ALEXA Plus 4:3	This version of ALEXA Plus offers a 4:3 capture mode in addition to the “Plus” feature set. It is bundled with an Anamorphic De-squeeze, High Speed and DNxHD license.

ALEXA XT Plus	Offers in addition built-in support for the ARRI Wireless Remote System and cmotion cvolution lens control system.
ALEXA Studio	In addition features a rotating mirror shutter, an optical viewfinder that can be exchanged with the standard electronic viewfinder and 4:3 capture mode.
ALEXA XT Studio	In addition features a rotating mirror shutter, an optical viewfinder that can be exchanged with the standard electronic viewfinder.
ALEXA M	Based on the ALEXA, but with separate camera head and body. Also offers 4:3 capture mode.
ALEXA XT M	Based on the ALEXA, but with separate camera head (equipped with LDS PL mount) and body.

Output Formats in 16:9, 4:3 and Open Gate Sensor Mode



Optical Viewfinder (ALEXA Studio)
26.14 x 19.0 mm / 1.029 x 0.748", ø: 32.32 mm / 1.272"

Sensor Mode Open Gate (1.55:1)
ARRIRAW – 3414 x 2198 Photosites
28.17 x 18,13 mm / 1.109 x 0.714", ø: 33.50 mm / 1.319"

Sensor Mode 4:3
ARRIRAW *full* – 2880 x 2160 Photosites
23.76 x 17.82 mm / 0.935 x 0.702", ø: 29.70 mm / 1.169"
ProRes 2K – 2868 x 2150 Photosites
23.66 x 17.74 mm / 0.931 x 0.698", ø: 29.57 mm / 1.164"
ARRIRAW *cropped* – 2578 x 2160 Photosites
21.27 x 17.82 mm / 0.837 x 0.702", ø: 27.75 mm / 1.092"

Sensor Mode 16:9
ARRIRAW / ProRes HD / DNxHD – 2880 x 1620 Photosites
23.76 x 13.37 mm / 0.935 x 0.526", ø: 27.26 mm / 1.073"
ProRes 2K – 2868 x 1612 Photosites
23.66 x 13.30 mm / 0.931 x 0.524", ø: 27.14 mm / 1.069"
ProRes 3.2K – 3164 x 1778 Photosites
26.10 x 14,67 mm / 1.027 x 0.578", ø: 29,94 mm / 1.179"

EVF-1/MON OUT
4:3 Surround View – 3168 x 2160 Photosites
26.14 x 17,82 mm / 1.029 x 0.5702", ø: 31.64 mm / 1.246"
16:9 Surround View – 3168 x 1782 Photosites
26.14 x 14.70 mm / 1.029 x 0.579", ø: 29.99 mm / 1.181"

Sensor 35 format ALEV III CMOS sensor with Bayer pattern color filter array.

Photo Sites

16:9	2880 x 1620 used for ARRIRAW 16:9 2880 x 1620 down sampled to 1920 x 1080 for HD-SDI, ProRes HD 16:9 and DNxHD HD 16:9 2868 x 1614 down sampled to 2048 x 1152 for ProRes 2K 16:9 3164 x 1778 natively used for ProRes 3.2K
4:3 Full	2880 x 2160 used for ARRIRAW 4:3 Full 2868 x 2152 down sampled to 2048 x 1536 for ProRes 2K 4:3
4:3 Cropped	2578 x 2160 used for ARRIRAW 4:3 Cropped
Open Gate	3414 x 2198 used for ARRIRAW Open Gate
Operating Modes	**Sensor mode** 16:9, 4:3 Full, 4:3 Cropped or Open Gate sensor modes. Switching takes approx. 60 seconds. 16:9 available for ARRIRAW, ProRes and DNxHD recording. 4:3 Full available for ARRIRAW and ProRes 2K recording. 4:3 Cropped and Open Gate available for ARRIRAW recording. **Regular** or **High Speed mode.** Switching takes approximately 20 seconds. **Mirror shutter (ALEXA Studio only)** on or off. Switching takes approximately 3 seconds through camera display.

Motorized Filter (ALEXA Studio/ ALEXA XT Studio only)

Sealed behind-the-lens motorized filter mechanism provides optical flat or ND 1.3 (4 1/3 stops).

Frame Rates

Please refer to the tables given in the chapter “Recording Media” on page 16 ff.

Shutter

Rotating mirror shutter (ALEXA Studio only) (11.2° - 180.0°) or electronic rolling shutter (0.75 - 60 fps: 5.0° - 358.0°; 60 - 120 fps: 356°). Shutter angle setting precision: 1/10 degree. Certain fps limits apply for maximum mirror shutter angle.

Exposure Latitude

14+ stops for all sensitivity settings from EI 160 to EI 3200, as measured with the ARRI Dynamic Range Test Chart (DRTC).

Exposure Index

EI $160^{+5.0}_{-9.0}$ EI $200^{+5.3}_{-8.7}$ EI $400^{+6.3}_{-7.7}$ EI $800^{+7.4}_{-6.6}$ EI $1600^{+8.4}_{-5.6}$ EI $3200^{+9.4}_{-4.6}$

Values behind the exposure index are the number of stops above and below 18% grey. These values are for Log C. Rec 709 is the same except for 0.3 stops fewer in the low end at EI 160, 200 and 400. Also see Page 32 and 33.

White Balance

Presets for 3200 (tungsten), 4300 (fluorescent), 5600 (daylight) and 7000 (daylight cool). Automatic calculation or manual white balance for 2000 to 11000 Kelvin, adjustable in 100 K steps

Color Correction	While white balance changes the red/blue hue of the image, color correction changes green/magenta. Adjustable range from -12 to +12 CC. 1 CC corresponds to 035 Kodak CC values or 1/8 Rosco values.
Sound Level	ALEXA: Under 20 db(A) while recording ProRes 4444 16:9 HD @ 24 fps (mirror shutter running on the Studio) and ≤ +30° Celsius (≤ +86° Fahrenheit) with lens attached and fan mode set to 'Regular', measured 1 m/3 feet in front of the lens. Silent operation at higher temperatures possible with fan mode set to 'Rec low'. ALEXA XT: Under 19 db(A) while recording ProRes 4444 16:9 HD @ 24 fps (mirror shutter running on ALEXA XT Studio) and ≤ +30° Celsius (≤ +86° Fahrenheit) with lens attached and fan mode set to 'Regular', measured 1 m/3 feet in front of the lens. Silent operation at higher temperatures possible with fan mode set to 'Rec low'.
Power In	BAT connector, optional V-Lock or Gold mount battery adapter back and top. Camera accepts 10.5 to 34 V DC on all inputs.
Power draw	Values stated here apply to typical use at 24 fps, without accessories.
ALEXA/Plus/Plus 4:3:	85 W for camera and EVF-1, recording to SxS PRO cards.
ALEXA XT/XT Plus:	100W for camera and EVF-1, recording to Capture Drives/SxS PRO cards.

ALEXA Studio: ALEXA XT Studio:	90 W for camera with OVF-1, recording to SxS PRO cards, mirror shutter on. 105 W for camera with OVF-1, recording to Capture Drives/SxS PRO cards, mirror shutter on. When running over 30 fps with mirror shutter on, a supply voltage of 18 V or more is recommended.
ALEXA M: ALEXA XT M:	40 W for camera head and 85 W for body, recording to SxS PRO cards. 40 W for camera head and 100 W for body, recording to Capture Drives/SxS PRO cards. A 24 V power input to the body is required to power the camera head from the body through a standard SMPTE hybrid cable up to 50 meters, without accessories. The camera head has one 10.5 to 34 V DC power input that can be used to power the head independently form the camera body.
Power Out	**12 V connector:** limited to 12 V, up to 2.2 A. **RS, EXT** and **ETHERNET**: input below 24 V is regulated up to 24 V, above 24 V: input = output voltage. Both RS and EXT connectors combined: up to 2.2 A. **ETHERNET:** up to 1.2 A. Maximum power draw is also limited by the power source. The camera head on the ALEXA M offers two RS connectors and one ETHERNET connector, with the same specifics as on the camera body.

Weight

Camera Model	Camera Body	With Accessories[1]
ALEXA with SxS Module	6.3 kg/13.8 lb	7.7 kg/16.9 lb
ALEXA XT with XR Module	6.6 kg/14.5 lb	8.0 kg/17.6 lb
ALEXA Plus/Plus 4:3 with SxS Module	7.0 kg/15.4 lb	8.4 kg/18.5 lb
ALEXA XT Plus with XR Module	7.3 kg/16.1 lb	8.7 kg/19.2 lb
ALEXA Studio with SxS Module[2]	8.0 kg/17.6 lb	10.2 kg/22.5 lb
ALEXA XT Studio with XR Module[2]	8.3 kg/18.3 lb	10.5 kg/23.1 lb
ALEXA M XT/XT M Head	2.9 kg/6.39 lb	–
ALEXA M Backend	5.5 kg/12 lb	–
ALEXA XT M Backend	5.8 kg/12.8 lb	–

[1] EVF-1 with Viewfinder Mounting Bracket VMB-1, viewfinder cable, and Center Camera Handle (CCH-1)
[2] Accessories for ALEXA Studio/XT Studio: OVF-1 and CCH-1

Dimensions

ALEXA:	Length: 332 mm/12.95", width: 153 mm/6.02", height: 158 mm/6.22"
ALEXA XT:	Length: 332 mm/12.95", width: 161 mm/6.33", height: 158 mm/6.22"
ALEXA Plus/Plus 4:3:	Length: 332 mm/12.95", width: 175 mm/6.89", height: 158 mm/6.22"
ALEXA XT Plus:	Length: 332 mm/12.95", width: 183 mm/7.20", height: 158 mm/6.22"
ALEXA Studio:	With OVF-1: Length: 402 mm/15.83", width: 268 mm/10.55", height: 241 mm/9.49"
ALEXA XT Studio:	With OVF-1: Length: 402 mm/15.83", width: 268 mm/10.55", height: 241 mm/9.49"
ALEXA M Head:	Length: 212 mm/8.35", width: 129 mm/5.08", height: 149 mm/5.87"
ALEXA M Backend:	Length: 323 mm/12.72", width: 153 mm/6.02", height: 158 mm/6.22"
ALEXA XT M Head:	Length: 212 mm/8.35", width: 129 mm/5.08", height: 149 mm/5.87"
ALEXA XT M Backend:	Length: 323 mm/12.72", width: 161 mm/6.33", height: 158 mm/6.22"

Detailed drawings can be found in the ALEXA Dimensions PDF document on our website at: http://www.arri.com/alexa/downloads

Lens Mount

54 mm stainless steel LDS PL mount, Super 35 centered. 52.00 mm nominal flange focal depth. All models but Standard ALEXA are outfitted with a Lens Data Mount.

Viewfinder

Low latency (≤1 frame delay) electronic color viewfinder ARRI EVF-1 with 1280 x 784 F-LCOS micro display (image: 1280 x 720, status bars: 1280 x 32 above and 1280 x 32 below image) and ARRI LED illumination, both temperature controlled. Image can be flipped for use of viewfinder on camera left or right. Viewfinder Mounting Bracket allows movement of viewfinder forward/backwards, left/right, up/down, 360-degree rotation and placement on camera left or right. EVF-1 controls: viewfinder and basic camera settings, ZOOM button (2.25x pixel to pixel magnification), EXP button (false color exposure check) and jog wheel.

ALEXA Studio: Optical viewfinder OVF-1 shows a bright, high contrast image for through-the-lens viewing with low distortion, accurate color fidelity and no delay. Can be used camera left or right and the viewfinder arm telescopes closer/farther from the camera body. Automatically keeps an upright image in all positions with an optional override for manual image rotation. Includes a flip in ND 0.6 contrast filter and 2x de-squeeze module for 2x anamorphic lenses lenses (can also be retrofitted with a 1.3x de-squeeze module). Includes Basic Insert Module BIM-1 for RGB frameglow. Accepts 8x and 10x 435 eyepieces, 435 eyepiece extensions and heated eyecups. With the optional ARRICAM Eyepiece Adapter AEA-1, the OVF-1 can accept the 8x ARRICAM Studio eyepiece, ARRICAM Studio Viewfinder Extension Medium and ARRICAM Studio Viewfinder Zoom Extension. Not compatible with Lite Universal Eyepiece. Can be replaced with the ALEXA Electronic Viewfinder EVF-1 by using the Electronic Viewfinder Adapter EVA-1.

Assistive Displays

For EVF-1 and MON OUT:	preset and custom frame lines, user rectangles, surround view, 180° image rotation, camera status, false color exposure check, peaking focus check, com pare stored image with live image, RETURN IN video and anamorphic de-squeeze. For MON OUT additionally: Reel & clip number.
For OVF-1:	Warning LEDs for REC (recording), BAT (battery low), FULL (XR Capture Drive or SxS PRO card full).

Control

Camera right:	Main user interface with a 3" transflective 400 x 240 pixel LCD color screen, illuminated buttons, button lock and jog wheel.
Camera left:	Operator interface with illuminated buttons and button lock. Camera left (ALEXA Studio and ALEXA XT Studio): MIRROR PARK buttons: VIEW/GATE. Optional accessory Remote Control Unit RCU-4 for cabled remote control via camera ETHERNET connector. Optional accessory Wireless Compact Unit WCU-4 for wireless remote control.

In-camera Recording	ALEXA: QuickTime/ProRes or MXF/DNxHD recording onto one or two (Dual Recording) SxS PRO or SxS PRO+ cards. All formats include embedded audio, timecode and metadata.

ALEXA XT Series: Uncompressed and unencrypted ARRIRAW, compressed and unencrypted QuickTime/ProRes or compressed and unencrypted MXF/DNxHD recording onto XR Capture Drives. With SxS Adapter: QuickTime/ProRes or MXF/DNxHD onto SxS PRO or SxS PRO+ cards. With CFast 2.0 Adapter: QuickTime/ProRes or MXF/DNxHD onto CFast 2.0 cards. All formats include embedded audio, timecode and metadata. ARRIRAW can additionally store an ASC Color Decision List (CDL) from an on-set network connection.

Recording Outputs

ALEXA: 2x 1.5G or 3G REC OUT BNC connectors for ARRIRAW T-Link or HD-SDI video. Both with embedded audio, timecode, metadata and recording flag. ARRIRAW: 2880 x 1620 (16:9), uncompressed, unencrypted 12 bit log without white balance or exposure index processing applied. Requires an ARRIRAW T-Link certified recorder. HD-SDI video: uncompressed 1920 x 1080 (16:9) 4:4:4 RGB or 4:2:2 YCbCr at 23.976, 24, 25, 29.97, 30, 50, 59.94, or 60 fps. Recording other speeds requires a recorder with Variflag support. Legal or extended range signal mapping.

ALEXA XT Series: 2x 1.5G or 3G REC OUT BNC connectors for uncompressed 1920 x 1080 4:4:4 RGB or 4:2:2 YCbCr HD video at 23.976, 24, 25, 29.97, 30, 50, 59.94, or 60 fps. Recording other speeds requires a recorder with Variflag support. Legal or extended range signal mapping. Embedded audio, time code, metadata and recording flag. ALEXA XT models do not offer ARRIRAW T-Link output.

Monitor Output	2x MON OUT BNC connector on ALEXA Plus/Plus 4:3/Studio/XT Plus/XT Studio for uncompressed 1.5G HD-SDI video: 1920 x 1080 (16:9), 4:2:2 YCbCr; all legal range. ALEXA, ALEXA M, ALEXA XT and ALEXA XT M offer 1x MON OUT.
Image Processing	16 bit linear internal image processing in full ALEXA native color space. Target output color spaces for ProRes, DNxHD, REC OUT and MON OUT: Log C or Rec 709. For Rec 709, a customized look can be applied during record and playback with ARRI Look Files. Optional horizontal image mirroring.
Synchronization	Master/Slave mode for precision sync of settings, sensor, processing, HD-SDI outputs and QuickTime/ProRes or MXF/DNxHD recording for 3D applications. PHASE user button for shifting camera phase to move phase artifacts out of frame, i.e. when shooting a CRT monitor or rear screen projector (works in Rec Run TC mode).

Playback	ALEXA: Playback of ProRes or DNxHD from SxS PRO or SxS PRO+ cards visible on EVF-1, MON OUT and REC OUT. Playback audio available over headphone jack and embedded in the MON OUT and REC OUT signal. ALEXA XT Series: Playback of ARRIRAW, ProRes or DNxHD from XR Capture Drive or playback of ProRes or DNxHD from SxS PRO or SxS PRO+ cards visible on EVF-1, MON OUT and REC OUT. Playback audio available over headphone jack and embedded in the MON OUT and REC OUT signal.
Audio	1x XLR 5 pin AUDIO IN for 2 channel, line level, balanced audio. 24 bit/48 kHz A/D conversion. Uncompressed PCM audio recording to ARRIRAW, ProRes, DNxHD and embedded in all HD-SDI outputs. Only available with same project/sensor speed at 23.976, 24, 25, 29.97 and 30 fps. Max of 2.5 dBm output from AUDIO OUT headphones connector.

Connectors

Connector type	Name	ALEXA (XT)	ALEXA (XT) Plus/4:3/ Studio	ALEXA (XT) M Backend	ALEXA (XT) M Head
SxS Module/XR Module	SxS/–	2/1	2/1	2/1	-/-
BNC recording out HD-SDI, 1.5G/3G	REC-OUT 1/2	2	2	2	–
BNC monitoring out HD-SDI, 1.5G	MON OUT	1	2	1	–
XLR 5 pin audio in	AUDIO IN	1	1	1	–
BNC return signal HD-SDI, 1.5G	RET/SYNC IN	1	1	1	–
LEMO 16 pin external accessories	EXT	1	1	1	–
Fischer 2 pin 24 V power in	BAT	1	1	1	1
Fischer 3 pin 24 V remote start and accessory power out	RS	2	3	2	2
LEMO 2 pin 12 V accessory power out	12 V	1	1	1	–
LEMO 5 pin timecode in/out	TC	1	1	1	–
TRS 3.5 mm headphone mini stereo jack out	AUDIO OUT	1	1	1	–
LEMO custom 16 pin electronic viewfinder	EVF	1	1	–	1
LEMO 10 pin Ethernet with 24 V power	ETHERNET	1	1	1	1
Fischer 5 pin Lens Control System	LCS	–	2	–	–
Fischer 5 pin Lens Data Display	LDD	–	1	–	–
Fischer 12 pin for CLM-2, CLM-3 or later	IRIS	–	1	–	–
Fischer 12 pin for CLM-2, CLM-3 or later	ZOOM	–	1	–	–
Fischer 12 pin for CLM-2, CLM-3 or later	FOCUS	–	1	–	–
LEMO SMPTE 304M hybrid fiber connector	Optical Link	–	–	1	1

SD Card

For importing and storing ARRI Look Files, camera set up files, frame line files, feature license keys, user pixel masks and custom lens tables for the Lens Data Archive (LDA). Stores captured stills from the REC OUT image path in TIFF (.tif, 16 bit), DPX (.dpx, 10 bit) or JPEG (.jpg, 8 bit) format (1). Stores log files. Also used for installing Software Update Packets (SUPs).

Upgrades

The Storage Interface Module can be exchanged for future storage modules. The Electronics Interface Module (available as either regular ALEXA or ALEXA Plus versions) can be exchanged for future control electronics. An easily exchangeable lens mount allows other lenses beyond PL mount lenses to be used. Simple camera software updates via free of charge Software Update Packets (SUPs) and payable license keys – Anamorphic De-squeeze, High Speed and DNxHD.

Note: All technical data based on Software Update Packet (SUP) 11.0.
All data is subject to change without notice.

Menu Settings & Button Functions

RECORDING menu

Internal >>
- Format (Off/ProRes/ARRIRAW)
- Setting/HS Setting (ARRIRAW, DNxHD 145/220x/444, ProRes 422/422 HQ/4444/4444 XQ)
- Resolution (HD (1920x1080)/2K (2048x1152/1536)*XT/PLUS 4:3 3.2K (3164x1778)*XT and Full /Cropped*ARRIRAW 4:3 on XT)
- Dual Recording (On/Off)*NON XT

Prerecord >>
- Prerecord (On/Off)*PRORES
- Buffer size (220MB/660MB/1100MB)

Quick format SxS Card 1/2*NON XT /Capture Drive*XT

Erase SxS Card 1/2*NON XT

REC OUT >>
- Framerate 23.976/24/25/29.97/30/48/50/59.94/60fps)
- HD-SDI format (422 1.5G SL/1.5G DL/3G SL, 444 1.5 DL 444 3G SL/3G DL/RAW*NON XT 1.5G DL/3G SL/3G DL, MON OUT clone or Clean MON OUT)
- Surround mask (25%, 50%, 100%)*Clean MON OUT
- Scan format (psf/p)
- Output range (Legal/Extended/Raw)
- REC OUT fps sets sensor fps (On/Off)

MONITORING menu

Electronic viewfinder >>
- Brightness (0-5)
- Rotate image (On/Off)
- Smooth mode (On/Off)
- Surround view (On/Off)

Frame lines + status info >>
- Frame lines (On/Off)
- Surround mask (Black line/Color line/Mask 25%/50%/75%)
- Center mark (Off/Dot/Cross)
- Status info (On/Off)
  - Electronic horizon (On/Off)
  - LDS info (On/Off)

Note: The only differences between ALEXA XT and the classic ALEXA can be found in the RECORDING menu. This chart reflects the ALEXA XT menu, Software Update Packet version 11.0.

Peaking (Off/On) >>
Peaking (On/Off)
Peaking level (Low/Medium/High)
Anamorphic desqueeze*XT/ANAMORPH (Off/1.3x/2.0x/2.0xmag)
Zoom position (Centered/Eye level)
MON OUT >>
Framerate (23.976/24/25/29.97/30fps)
Scanformat (psf/p)
Surround view (On/Off)
Frame lines + status info >>
Frame lines (On/Off)
Surround mask (Black line/Color line/Mask 25%/50%/75%)
Center mark (Off/Dot/Cross)
Status info (On/Off)
Electronic horizon (On/Off)
LDS info (On/Off)
Camera index letter (On/Off)
Peaking (Off/On) >>
Peaking (On/Off)
Peaking level (Low/Medium/High)
False Color (On/Off)
Anamorphic desqueeze*ALEXA XT/ANAMORPH (Off/1.3x/2.0x/2.0xmag)
Frame lines >>
Frame line 1 (choose/add/delete; Off)
Frame line 2 (choose/add/delete; Off)
User rectangles >>
User rectangles (Off/Rect 1/Rect 2/Rect 1+2)
Set rect 1/2 >>
Top, Bottom, Left, Right (0 - 1000), Reset
Color (Red/Green/Blue/Yellow/Black/White)
Intensity (1-4)
RET IN path (EVF, MON OUT, EVF+MON)
Electronic horizonsensitivity (1x, 2x, 4x, 8x, 16x)
False color index >>

ALEXA SUP 11.0 underlined values represent the factory reset

Menu Settings & Button Functions

MENU

PROJECT menu

Sensor Mode*XT/STUDIO/M/PLUS 4:3 (16:9/4:3/OPEN GATE)*OG
Rec. resolution (Menu > Recording > INTERNAL)
Codec (Menu > Recording > INTERNAL)
Project frame rate (23.976/24/25/29.97/30fps)
Camera index (A-Z)
Camera index color (Red, Green, Blue, Yellow, Black, White)
Next reel count (001-999)
Lens squeeze factor (1.0, 1.3, 2.0)
Production info >>
- Production
- Prod. Company
- Director
- Cinematographer
- Camera Operator
- Location
- Scene
- Take
- User Info 1/2

SYSTEM menu

Imaging >>
- Sensor mode*ALEXA XT/STUDIO/M/PLUS 4:3 (16:9/4:3/OpenGate)
- Sensor temperature (Standard/High humidity)
- Image transform (None, Mirror horizontally, Rotate 180°)

Power >>
- BAT1 (Plug) warning (10.0-30.0V; 21.0V)
- BAT2 (Onboard) warning (10.0-30.0V; 12.0V)

External sync >>
- Eye index (L/R)
- Sensor sync (Off/EXT master/EXT slave)
- HD out phase (+/-30 clocks; 0 clocks)
- Send HD sync trigger >
- Settings sync (Off/ETH master/ETH slave)

Test signal >>
- Color bar (On/Off)
- Enable test tone (On/Off)
- Test tone level (0 dBFS/-9 dBFS/-18 dBFS)

Display + beeper >>
Display button brightness (0-8)
Button brightness (Off/Low/Medium/High)
Run beeper mode (Off/Start/Stop/Start+Stop)
System time + date >>
set date, time, timezone and daylight saving time
Fan mode (Regular/Rec low)
Network access read-only (On/Off)
SD card >>
Format + prepare SD card
Prepare SD card

Firmware >>
Select update file >>
Licensed features >>

install/delete licenses; save hardware info

FRAME GRABS menu

File format (Jpeg/Tiff/Dpx/Ari)
Compare grab to live image >>
load grab

Options Compare Options >>
Compare mode (Toggle/Interleave)
Active on EVF (On/Off)
Active on MON OUT (On/Off)
Grabbed images inherit REC OUT settings!
Ari only possible, when REC OUT = ARRI RAW

USER SETUPS menu

Save current setup
Load setup

Factory reset

LDS *ALEXA XT M/M

see Lens Data for PLUS/STUDIO

ALEXA SUP 11.0 underlined values represent the factory reset

Menu Settings & Button Functions

HOME

FPS

set sensor speed (0.75 fps-60fps /120fps*ALEXA XT/HS; 24fps)
add/delete value
HIGHSPEED/EXIT HS*ALEXA XT/HS (boot ALEXA to HS mode; 60-120fps)
MODE (MENU > RECORDING > INTERNAL)
MEDIA INFO (INFO > MEDIA INFO)
SDI FPS >>
REC OUT (23.976, 24, 25, 29.97, 30fps)
MON OUT (23.976, 24, 25, 29.97, 30fps)

AUDIO

adjust CH1+/- (level +20/-10; unity)
adjust CH2+/- (level +20/-10; unity)
AUDIO OUT
set AUDIO OUT
Phones Level (+/-)
OPTIONS
AUDIO OUT > OPTIONS >>
Left out (CH1, CH2, CH1+2, None)
Right out (CH1, CH2, CH1+2, None)
Audio OUT level (Manual, Unity max.)
OPTIONS
AUDIO IN > OPTIONS >>
Record (On/Off)
Channel 1/2 level (Manual/Unity)
Channel 1/2 source (L/R in)
Soundroll (=Tape) (edit name)

SHUTTER

set shutter angle (5.0° - 358.0°; 172.8°)
in highspeed mode (5.0°-356.0°)*ALEXA XT/HS
add/delete value
see calculated exposure time
MIRROR*ALEXA XT STUDIO/STUDIO (On/Off)

EI

set exposure index (160ASA - 3200ASA; 800ASA)

ND FILTER*ALEXA XT STUDIO/STUDIO (On/Off)

COLOR

SET LOOK

choose/delete/load look from SD

ARRI LCC look loaded by default

CDL CONF*ALEXA XT > set ip adress

CDL (On/Off)*ALEXA XT

set COLORPATH

EVF (Look ON/OFF for REC 709)

MON OUT (Look ON/OFF for REC 709)

INTERNAL, REC OUT } (Look ON/OFF for REC 709)

GAMMA

COLOR > GAMMA >>

INTERNAL (REC 709, LOG C, RAW*ALEXA XT)

REC OUT (REC 709, LOG C)

MON OUT (REC 709, LOG C)

EVF (REC 709, LOG C)

WB

set WHITEBALANCE (2000K - 11000K, Auto WB; 5600K; and CC SHIFT)

add/rename/delete value

ALEXA SUP 11.0 underlined values represent the factory reset

Menu Settings & Button Functions

USER BUTTON ASSIGNMENT

set Button 1, 2, 3

- None
- MON OUT surround
- MON OUT gamma
- MON OUT look
- MON OUT frame lines
- MON OUT status info
- MON OUT false color
- MON OUT peaking
- MON anam. desqu. *XT/ANAMORPH
- Frame lines color
- EVF surround
- EVF gamma
- EVF look
- EVF frame lines
- EVF status info
- EVF zoom
- EVF false color
- EVF peaking
- EVF anam. desqu. *XT/ANAMORPH
- Grab still frame
- Return in active
- Toggle SxS*NON XT/XR
- Check last clip end/start
- Circle clip
- Auto WB
- Phase sensor
- Color bars
- Grab GUI

set Button 4, 5, 6

- None
- MON OUT surround
- MON OUT gamma
- MON OUT look
- MON OUT frame lines
- MON OUT status info
- MON OUT false color
- MON OUT peaking
- MON anam. desqu. *XT/ANM.
- Return in active
- Frame lines color
- Toggle SxS*NON XT/XR
- Phase sensor
- Color bars
- Format Card1*NON XT/XR
- Format Card2*NON XT/XR
- False color index
- Format media*XT
- Mirror shutter*STUDIO

PLAY

PLAYBACK screen

start Playback of last clip (press wheel or PLAY 2x on operator's side)
+/- 10%, CLIPLIST, STEPSIZE (1 frame/1 second),
CIRCLE CLIP
OPTIONS
PLAY Options >>
Clip end action (Pause/Loop)
Show frame lines (On/Off)
Status info on MON OUT (On/Off)
Peaking on MON OUT (On/Off)
Peaking on EVF (On/Off)

GRAB

FRAMEGRAB screen

save Framegrab to SD Card 

ALEXA SUP 11.0 underlined values represent the factory reset

Menu Settings & Button Functions

INFO

SYSTEM INFORMATION screen

LIVE INFO
  SAVE TO SD
VERSION
MEDIA INFO
SYSTEM
FPS INFO

TC

TIMECODE screen

SET TC (SET TO TIME/RESET/MANUAL)
Options
  Timecode Options >>
  Source (Int TC/Ext LTC)
  Mode (Rec run/Free Run)
  Generator (Regen/Jam Sync)
  User bit source (Internal/UB in Ext TC)
Userbits (set Userbits)
Project (Menu > Project)

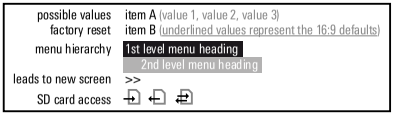
LOCK

BUTTON LOCK

locks HOMESCREEN, MENU, PLAY, TC and INFO:
*also locks the buttons on EVF and WRS*ALEXA XT/PLUS & STUDIO!*

ALEXA SUP 11.0 underlined values represent the factory reset

LEGEND SUP 11.0



***ALEXA XT** = function available on ALEXA XT/XR only
***ANAMORPH** = requires Anamorphic Desqueeze License
***DNxHD** = requires DNxHD License
***HS** = requires High Speed License
***PLUS** = ALEXA PLUS only
***PLUS 4:3** = ALEXA PLUS 4:3 only
***STUDIO** = ALEXA STUDIO only
***M** = ALEXA M only

Menu Settings & Button Functions

ALEXA (XT) Studio, ALEXA (XT) Plus and ALEXA (XT) M*

WRS

RADIO

STATUS
Channel: 0
Units: 0
Ready/Off

WRS > RADIO >>
WRS radio power (On/Off)
WRS radio channel (0-7)

CAM LEVEL

STATUS READOUT FROM SENSORS
Tilt: 0.0°
Roll: 0.0°

CAM LEVEL > RESET
use to reset your null balance

LENS DATA

LDS READOUT
Status
LENS DATA
displays FOCAL LENGTH, IRIS, FOCUS and DoF close/far

LDS OPTIONS
Lens distance unit (Metric, Imperial, Default Unit)
Circle of confusion (0.013/0.025/0.035/0.050mm)
LDS mount (On/Off)
LDA *available when non-LDS lens in use*
manage lens data for non-LDS lenses

IRIS/ZOOM/FOCUS CLM

CLM STATUS

displays TYPE, DIRECTION and TORQUE (1-4; CLM-3 & 4)

IRIS/ZOOM/FOCUS CLM

set DIRECTION

set TORQUE (only CLM-3 & 4)

CALIBRATE/CALIBRATE ALL motors

*on ALEXA XT M and ALEXA M via SYSTEM > LDS

ALEXA SUP 11.0 underlined values represent the factory reset

Menu Settings & Button Functions

Electronic Viewfinder EVF-1

CAM

FPS

set sensor speed (0.75 fps-60fps /120fps*XT/HS; 24fps)

SHUTTER

set shutter angle (5.0° - 358°; 172,8°) in High Speed Mode 5.0°-356.0°)*XT/HS

EI

set exposure index (160ASA - 3200ASA; 800ASA)

WB

set white balance (2000K - 11000K, Auto WB; 5600K; and CC SHIFT)

EXP

false color exposure check (toggle mode)

ZOOM

get 2.25x image magnification (toggle mode)

EVF menu

Brightness (0-5)
Rotate Image (On/Off)
Smooth Mode (On/Off)
Surround View (On/Off)
Surround Mask (Black line/Color Line/Mask 25%/50%/75%)
Status Info (On/Off)
Frame Lines (On/Off)
Select Frame Lines 1 (choose from list)
Select Frame Lines 2 (choose from list)
Center Mark (Off/Dot/Cross)
User Rectangles (Off/Rect 1/Rect 2/Rect 1&2)
Edit User Rectangles (only when User Rectangles active)
Frame Lines Color (Red/Green/Blue/Yellow/Black/White)
Frame Lines Intensity (1-4)

Mirror Control on ALEXA (XT) Studio

switch to VIEW-mode (Operator sees an image)
press 2x for spinning mirror

switch to GATE-mode (sensor & all video outs "see" an image)
press 2x for spinning mirror

ALEXA SUP 11.0 underlined values represent the factory reset

ARRI Lenses

ARRI/ZEISS Master Anamorphic Lenses

Name	Lens Mount[1]	Aperture	Close Focus[2]	Magnification Ratio[3]	Length[4]	Length[14]	Front Diameter[5]
Master Anamorphic 35/T1.9	PL LDS	T1.9 - T22	0.75 m / 2'6"	H: 1:32.3 V: 1: 16.1	183 mm / 7.2"	235 mm / 9.3"	95 mm / 3.7"
Master Anamorphic 40/T1.9	PL LDS	T1.9 - T22	0.70 m / 2'4"	H: 1:25.6 V: 1: 12.8	183 mm / 7.2"	235 mm / 9.3"	95 mm / 3.7"
Master Anamorphic 50/T1.9	PL LDS	T1.9 - T22	0.75 m / 2'6"	H: 1:22.2 V: 1: 11.1	183 mm / 7.2"	235 mm / 9.3"	95 mm / 3.7"
Master Anamorphic 60/T1.9	PL LDS	T1.9 - T22	0.90 m / 3'	H: 1:24.3 V: 1: 12.2	183 mm / 7.2"	235 mm / 9.3"	95 mm / 3.7"
Master Anamorphic 75/T1.9	PL LDS	T1.9 - T22	0.90 m / 3'	H: 1:19.6 V: 1: 9.8	183 mm / 7.2"	235 mm / 9.3"	95 mm / 3.7"
Master Anamorphic 100/T1.9	PL LDS	T1.9 - T22	0.95 m / 3'1"	H: 1:14.7 V: 1: 7.4	206 mm / 8.1"	258 mm / 10.2"	95 mm / 3.7"
Master Anamorphic 135/T1.9	PL LDS	T1.9 - T22	1.20 m / 3'11"	H: 1:15.6 V: 1:7.8	226 mm / 9.1"	278 mm / 10.7"	95 mm / 3.7"

For Annotations, see Page 120.
All data is subject to change without notice.

Maximum Housing Diameter	Weight (kg)	Weight (lb)	Angle of View H - V	Entrance Pupil[6]
			Super 35 Cinemascope[8] ID = 29.26 mm[7]	
114 mm / 4.5"	2,6	5.7	65.5° - 29.9°	178.8 mm / 7.0"
114 mm / 4.5"	2,7	6.0	58.7° - 26.3°	176.0 mm / 6.9"
114 mm / 4.5"	2,6	5.7	48.5° - 21.2°	171.5 mm / 6.8"
114 mm / 4.5"	2,7	6.0	41.1° - 17.7°	152.0 mm / 6.0"
114 mm / 4.5"	2,6	5.7	33.4° - 14.2°	136.7 mm / 5.4"
114 mm / 4.5"	3,1	6.8	25.4° - 10.7°	145.9 mm / 5.7"
114 mm / 4.5"	3,8	8.4	18.9° - 7.9°	129.3 mm / 5.1"

ARRI Anamorphic Ultra Wide Zoom AUWZ 19-36

Name	Lens Mount[1]	Focal Length *Wide*	Focal Length *Long*	Focal Length *Ratio*	Aperture	Close Focus[2]	Magnification Ratio[3]	Length[4]	Front Diameter[5]
Anamorphic Ultra Wide Zoom - AUWZ 19-36/T4.2[16]	PL LDS	19	36	1.9	T4.2 - T22	0.6 m / 2'	1:10.2 (H) 1:5.2 (V) at 36mm	397.1 mm / 15.634"	114 mm / 4.488"

For Annotations, see Page 120.
All data is subject to change without notice.

Maximum Housing Diameter[15]	Weight	Focal Length	Angle of view H – V	Entrance pupil[6]
			Super 35 Cinemascope[8] ID = 29.26 mm[7]	
112 mm / 4.409“	5.5 Kg / 12.1 lb	at 19 mm	100.8° - 52.0°	414.9 mm / 16.33“
		at 24 mm	87.4° - 42.2°	414.4 mm / 16.31“
		at 28 mm	78.5° - 36.6°	413.9 mm / 16.30“
		at 32 mm	71.1° - 32.3°	413.2 mm / 16.27“
		at 36 mm	64.9° - 28.9°	412.5 mm / 16.24“

ARRI/ZEISS Master Prime Lenses

Name	Lens Mount[1]	Aperture	Close Focus[2]	Magnification Ratio[3]	Length[4]	Length[14]	Front Diameter[5]	Maximum Housing Diameter
Master Prime 12/T1.3	PL LDS	T1.3 - T22	0.40 m / 16"	1:16.5	197 mm / 7.8"	249 mm / 9.80"	156 mm / 6.1"	159 mm / 6.3"
Master Prime 14/T1.3	PL LDS	T1.3 - T22	0.35 m / 14"	1:11.7	172 mm / 6.8"	224 mm / 8.82"	114 mm / 4.5"	128 mm / 5"
Master Prime 16/T1.3	PL LDS	T1.3 - T22	0.35 m / 14"	1:11.8	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 18/T1.3	PL LDS	T1.3 - T22	0.35 m / 14"	1:11.0	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 21/T1.3	PL LDS	T1.3 - T22	0.35 m / 14"	1:9.5	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 25/T1.3	PL LDS	T1.3 - T22	0.35 m / 14"	1:8.6	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 27/T1.3	PL LDS	T1.3 - T22	0.35 m / 14"	1:7.8	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 32/T1.3	PL LDS	T1.3 - T22	0.35 m / 14"	1:7.1	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 35/T1.3	PL LDS	T1.3 - T22	0.35 m / 14"	1:6.4	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 40/T1.3	PL LDS	T1.3 - T22	0.40 m / 16"	1:7.0	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 50/T1.3	PL LDS	T1.3 - T22	0.50 m / 20"	1:7.0	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 65/T1.3	PL LDS	T1.3 - T22	0.65 m / 2'3"	1:8.2	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 75/T1.3	PL LDS	T1.3 - T22	0.80 m / 2'9"	1:8.9	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 100/T1.3	PL LDS	T1.3 - T22	1.00 m / 3'6"	1:8.9	153 mm / 6"	205 mm / 8.07"	114 mm / 4.5"	128 mm / 5"
Master Prime 135/T1.3	PL LDS	T1.3 - T22	0.95m / 3'3''	1:6.6	172 mm / 6.8"	224 mm / 8.82"	114 mm / 4.5"	128 mm / 5"
Master Prime 150/T1.3	PL LDS	T1.3 - T22	1.50 m / 4'11"	1:10.3	210 mm / 8.3"	262 mm / 10.31"	134 mm / 5.3"	137 mm / 5.4"

For Annotations, see Page 120.
All data is subject to change without notice.

Weight	Angle of view H – V – D			Entrance pupil[6]
	Normal 35[9] ID = 27.20 mm[7]	DIN Super 35[10] ID = 30.00 mm[7]	ANSI Super 35[11] ID = 31.14 mm[7]	
2.9 Kg / 6.4 lb	83.87° -66.44° - 96.13°	88.85° - 72.70° - 101.97°	90.98° - 74.78° - 104.26°	208,3 mm / 8.2"
2.4 Kg / 5.3 lb	76.42° - 59.41° - 88.52°	81.24° - 65.39° - 94.07°	83.44° - 67.49° - 96.33°	189,3 mm / 7.5"
2.2 Kg / 4.8 lb	70.07° - 53.79° - 81.76°	74.85° - 59.56° - 87.24°	76.87° - 61.50° - 89.33°	158,8 mm / 6.3"
2.2 Kg / 4.8 lb	63.98° - 48.60° - 75.29°	68.56° - 53.97° - 80.52°	70.53° - 55.80° - 82.48°	154,9 mm / 6.1"
2.4 Kg / 5.3 lb	55.96° - 42.05° - 66.60°	60.22° - 46.85° - 71.70°	62.07° - 48.50° - 73.66°	149,3 mm / 5.9"
2.6 Kg / 5.1 lb	48.12° - 35.79° - 57.97°	52.01° - 40.00° - 62.89°	53.72° - 41.45° - 64.81°	135,9 mm / 5.4"
2.2 Kg / 4.8 lb	43.82° - 32.45° - 53.08°	47.45° - 36.31° - 57.80°	49.06° - 37.64° - 59.66°	136,7 mm / 5.4"
2.3 Kg / 5.1 lb	38.84° - 28.74° - 47.10°	42.07° - 32.16° - 51.31°	43.51° - 33.35° - 52.98°	128,4 mm / 5.1"
2.2 Kg / 4.8 lb	35.04° - 25.82° - 42.64°	38.01° - 28.94° - 46.52°	39.33° - 30.02° - 48.04°	126,9 mm / 4.9"
2.3 Kg / 5.1 lb	30.91° - 22.75° - 37.68°	33.55° - 25.51° - 41.15°	34.73° - 26.46° - 42.52°	119,6 mm / 4.7"
2.7 Kg / 5.9 lb	25.02° - 18.27° - 30.81°	27.26° - 20.53° - 33.88°	28.26° - 21.32° - 35.13°	136,1 mm / 5.4"
2.6 Kg / 5.7 lb	19.27° - 14.06° - 23.72°	20.99° - 15.80° - 26.08°	21.59° - 16.58° - 27.00°	107,3 mm / 4.2"
2.8 Kg / 6.2 lb	16.66° - 12.17° - 20.51°	18.15° - 13.67° - 22.56°	18.82° - 14.20° - 23.39°	102,5 mm / 4.0"
2.9 Kg / 6.4 lb	12.60° - 9.17° - 15.56°	13.74° - 10.32° - 17.14°	14.25° - 10.72° - 17.79°	57,2 mm / 2.3"
2.8 Kg / 6.2 lb	9.49° - 6.91° - 11.72°	10.35° - 7.77° - 12.91°	10.73° - 8.07° - 13.40°	30.1 mm / 1.2"
4.0 Kg / 8.8 lb	8.53° - 6.22° - 10.53°	9.30° - 6.99° - 11.59°	9.65° - 7.26° - 12.03°	-89,0 mm / -3.5"

ARRI/ZEISS Ultra Prime Lenses

Name	Lens Mount[1]	Aperture	Close Focus[2]	Length[4]	Front Diameter[5]	Maximum housing diameter	Weight
Ultra Prime 8R/T2.8	PL	T2.8 to T22	0.35 m / 13.8"	130 mm / 5.1"	134 mm / 5.3"	137 mm / 5.4″	2.0 Kg / 4.4 lb
Ultra Prime 12/T2.0	PL	T2.0 to T22	0.30 m / 11.8"	140 mm / 5.5"	156 mm / 6.1"	159 mm / 6.3″	2.0 Kg / 4.4 lb
Ultra Prime 14/T1.9	PL	T1.9 to T22	0.22 m / 8.7"	112 mm / 4.4"	114 mm / 4.5"	114 mm / 4.5″	1.8 Kg / 4.0 lb
Ultra Prime 16/T1.9	PL	T1.9 to T22	0.25 m / 9.8"	94 mm / 3.7"	95 mm / 3.7"	104 mm / 4.1″	1.2 Kg / 2.6 lb
Ultra Prime 20/T1.9	PL	T1.9 to T22	0.28 m / 11"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.2 Kg / 2.6 lb
Ultra Prime 24/T1.9	PL	T1.9 to T22	0.30 m / 11.8"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.0 Kg / 2.2 lb
Ultra Prime 28/T1.9	PL	T1.9 to T22	0.28 m / 11"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.0 Kg / 2.2 lb
Ultra Prime 32/T1.9	PL	T1.9 to T22	0.35 m / 13.8"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.1 Kg / 2.4 lb
Ultra Prime 40/T1.9	PL	T1.9 to T22	0.38 m /15"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.0 Kg / 2.2 lb
Ultra Prime 50/T1.9	PL	T1.9 to T22	0.60 m / 23.6"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.0 Kg / 2.2 lb
Ultra Prime 65/T1.9	PL	T1.9 to T22	0.65 m / 25.6	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.1 Kg / 2.4 lb
Ultra Prime 85/T1.9	PL	T1.9 to T22	0.90 m / 35.4"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.2 Kg / 2.6 lb
Ultra Prime 100/T1.9	PL	T1.9 to T22	1.00 m / 39.4"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.2 Kg / 2.6 lb
Ultra Prime 135/T1.9	PL	T1.9 to T22	1.50 m / 59.1"	119 mm / 4.7"	95 mm / 3.7"	102 mm / 4.0″	1.6 Kg / 3.5 lb
Ultra Prime 180/T1.9	PL	T1.9 to T22	2.60 m / 102.4"	166 mm / 6.5"	114 mm / 4.5"	119 mm / 4.7″	2.6 Kg / 5.7 lb

For Annotations, see Page 120.
All data is subject to change without notice.

Angle of view H – V – D			Entrance pupil[6]
Normal 35[9] ID = 27.20 mm[7]	DIN Super 35[10] ID = 30.00 mm[7]	ANSI Super 35[11] ID = 31.14 mm[7]	
107.1° - 89.1° - 118.3°	111.8° - 95.8° - 123.1°	113.7° - 98.0° - 124.8°	155,2 mm / 6.1"
85.5° - 67.8° - 97.6°	90.5° - 74.2° - 103.2°	92.6° - 76.3° - 105.2°	113,4 mm / 4.4"
75.6° - 58.9° - 87.6°	80.5° - 64.8° - 93.2°	82.6° - 66.8° - 95.4°	91,3 mm / 3.5"
68.6° - 52.8° - 80.3°	73.3° - 58.4° - 85.8°	75.4° - 60.2° - 88.1°	85,1 mm / 3.3"
58.9° - 44.6° - 69.8°	63.2° - 49.6° - 75.1°	65.1° - 51.3° - 77.2°	73,3 mm / 2.8"
50.5° - 37.8° - 60.5°	54.4° - 42.2° - 65.4°	56.2° - 43.7° - 67.5°	67,4 mm / 2.6"
43.6° - 32.4° - 52.6°	47.1° - 36.2° - 57.2°	48.7° - 37.5° - 59.0°	67,3 mm / 2.6"
38.6° - 28.5° - 46.8°	41.8° - 31.9° - 51.0°	43.2° - 33.1° - 52.7°	61,1 mm / 2.4"
31.0° - 22.8° - 37.9°	33.7° - 26.6° - 41.5°	34.9° - 26.6° - 42.9°	59,2 mm / 2.3"
24.3° - 17.8° - 29.8°	26.5° - 20.0° - 32.8° -	27.4° - 20.8° - 33.9°	13,4 mm / 0.5"
19.4° - 14.2° - 23.9°	21.9° - 16.5° - 27.2°	21.9° - 16.5° - 27.2°	19,0 mm / 0.7"
15.2° - 11.1° - 18.7°	16.5° - 12.4° - 20.5°	17.1° - 12.9° - 21.3°	3,5 mm / 0.1"
12.3° - 8.9° - 15.2°	13.4° - 10.0° - 16.7°	13.9° - 10.4° - 17.3°	12,4 mm / 0.4"
9.3° - 6.7° - 11.5°	10.1° - 7.6° - 12.6°	10.5° - 7.9° - 13.1°	-56,9 mm / -2.2"
6.9° - 5.1° - 8.5°	7.6° - 5.7° - 9.5°	7.9° - 5.9° - 9.9°	-19,7 mm / -0.7"

ARRI/ZEISS LDS Ultra Prime Lenses

Name	Lens Mount[1]	Aperture	Close Focus[2]	Length[4]	Front Diameter[5]	Maximum housing diameter	Weight
LDS Ultra Prime 12/T2.0	PL LDS	T2.0 to T22	0.30 m / 11.8"	140 mm / 5.5"	156 mm / 6.1"	159 mm / 6.3″	2.0 Kg / 4.4 lb
LDS Ultra Prime 14/T1.9	PL LDS	T1.9 to T22	0.22 m / 8.7"	112 mm / 4.4"	114 mm / 4.5"	114 mm / 4.5″	1.8 Kg / 4.0 lb
LDS Ultra Prime 16/T1.9	PL LDS	T1.9 to T22	0.25 m / 9.8"	94 mm / 3.7"	95 mm / 3.7"	104 mm / 4.1″	1.2 Kg / 2.6 lb
LDS Ultra Prime 20/T1.9	PL LDS	T1.9 to T22	0.28 m / 11"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.2 Kg / 2.6 lb
LDS Ultra Prime 24/T1.9	PL LDS	T1.9 to T22	0.30 m / 11.8"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.0 Kg / 2.2 lb
LDS Ultra Prime 28/T1.9	PL LDS	T1.9 to T22	0.28 m / 11"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.0 Kg / 2.2 lb
LDS Ultra Prime 32/T1.9	PL LDS	T1.9 to T22	0.35 m / 13.8"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.1 Kg / 2.4 lb
LDS Ultra Prime 40/T1.9	PL LDS	T1.9 to T22	0.38 m /15"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.0 Kg / 2.2 lb
LDS Ultra Prime 50/T1.9	PL LDS	T1.9 to T22	0.60 m / 23.6"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.0 Kg / 2.2 lb
LDS Ultra Prime 65/T1.9	PL LDS	T1.9 to T22	0.65 m / 25.6	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.1 Kg / 2.4 lb
LDS Ultra Prime 85/T1.9	PL LDS	T1.9 to T22	0.90 m / 35.4"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.2 Kg / 2.6 lb
LDS Ultra Prime 100/T1.9	PL LDS	T1.9 to T22	1.00 m / 39.4"	91 mm / 3.6"	95 mm / 3.7"	104 mm / 4.1″	1.2 Kg / 2.6 lb
LDS Ultra Prime 135/T1.9	PL LDS	T1.9 to T22	1.50 m / 59.1"	119 mm / 4.7"	95 mm / 3.7"	102 mm / 4.0″	1.6 Kg / 3.5 lb
LDS Ultra Prime 180/T1.9	PL LDS	T1.9 to T22	2.60 m / 102.4"	166 mm / 6.5"	114 mm / 4.5"	119 mm / 4.7″	2.6 Kg / 5.7 lb

For Annotations, see Page 120.
All data is subject to change without notice.

Angle of view H – V – D			Entrance pupil[8]
Normal 35[9] ID = 27.20 mm[7]	DIN Super 35[10] ID = 30.00 mm[7]	ANSI Super 35[11] ID = 31.14 mm[7]	
85.5° - 67.8° - 97.6°	90.5° - 74.2° - 103.2°	92.6° - 76.3° - 105.2°	113,4 mm / 4.4″
75.6° - 58.9° - 87.6°	80.5° - 64.8° - 93.2°	82.6° - 66.8° - 95.4°	91,3 mm / 3.5″
68.6° - 52.8° - 80.3°	73.3° - 58.4° - 85.8°	75.4° - 60.2° - 88.1°	85,1 mm / 3.3″
58.9° - 44.6° - 69.8°	63.2° - 49.6° - 75.1°	65.1° - 51.3° - 77.2°	73,3 mm / 2.8″
50.5° - 37.8° - 60.5°	54.4° - 42.2° - 65.4°	56.2° - 43.7° - 67.5°	67,4 mm / 2.6″
43.6° - 32.4° - 52.6°	47.1° - 36.2° - 57.2°	48.7° - 37.5° - 59.0°	67,3 mm / 2.6″
38.6° - 28.5° - 46.8°	41.8° - 31.9° - 51.0°	43.2° - 33.1° - 52.7°	61,1 mm / 2.4″
31.0° - 22.8° - 37.9°	33.7° - 26.6° - 41.5°	34.9° - 26.6° - 42.9°	59,2 mm / 2.3″
24.3° - 17.8° - 29.8°	26.5° - 20.0° - 32.8° -	27.4° - 20.8° - 33.9°	13,4 mm / 0.5″
19.4° - 14.2° - 23.9°	21.9° - 16.5° - 27.2°	21.9° - 16.5° - 27.2°	19,0 mm / 0.7″
15.2° - 11.1° - 18.7°	16.5° - 12.4° - 20.5°	17.1° - 12.9° - 21.3°	3,5 mm / 0.1″
12.3° - 8.9° - 15.2°	13.4° - 10.0° - 16.7°	13.9° - 10.4° - 17.3°	12,4 mm / 0.4″
9.3° - 6.7° - 11.5°	10.1° - 7.6° - 12.6°	10.5° - 7.9° - 13.1°	-56,9 mm / -2.2″
6.9° - 5.1° - 8.5°	7.6° - 5.7° - 9.5°	7.9° - 5.9° - 9.9°	-19,7 mm / -0.7″

ARRI/FUJINON Alura Zooms Lenses

Name	Lens Mount[1]	Focal Length *Wide*	Focal Length *Long*	Focal Length *Ratio*	Aperture	Close Focus[2]	Magnification Ratio[3]	Length[4]	Front Diameter[5]
Alura Lightweight Zoom 15.5-45/T2.8	PL LDS	15.5	45	2.9	T2.8 - T22	0.6 m / 2'0"	1:8.1	228 mm / 9.0"	114 mm / 4.5"
Alura Lightweight Zoom 30-80/T2.8	PL LDS	30	80	2.7	T2.8 - T22	0.6 m / 2'0"	1:4.9	228 mm / 9.0"	114 mm / 4.5"
Alura Zoom 18-80/T2.6	PL	18	80	4.4	T2.6 - T22	0.7 m / 2'4"	1:5.5	285 mm / 11.2"	134 mm / 5.3"
Alura Zoom 45-250/T2.6	PL	45	250	5.6	T2.6 - T22	1.2 m / 3'11"	1:4	370 mm / 14.6"	134 mm / 5.3"

For Annotations, see Page 120.
All data is subject to change without notice.

Maximum Housing Diameter	Weight	Focal Length	Angle of view H – V – D			Entrance pupil[6]
			Normal 35[9] ID = 27.20 mm[7]	DIN Super 35[10] ID = 30.00 mm[7]	Alexa/D-21 HD[12] ID = 27.26 mm[7]	
114 mm / 4.5"	2.2 Kg / 4.9 lb	at 15.5 mm	70.7° - 54.6° - 82.5°	74.9° - 46.7° - 82.7°	78.5° - 49.4° - 86.3°	237.0 mm / 9.3"
		at 25 mm	47.5° - 35.5° - 57.1°	50.8° - 29.9° - 57.2°	53.8° - 31.8° - 60.4°	230.9 mm / 9.1"
		at 45 mm	27.5° - 20.2° - 33.6°	29.6° - 16.9° - 33.7°	31.4° - 18° - 35.8°	222.6 mm / 8.8"
114 mm / 4.5"	2.2 Kg / 4.9 lb	at 30 mm	40.3° - 29.9° - 48.8°	43.2° - 25.1° - 48.9°	45.8° - 26.7° - 51.7°	219.3 mm / 8.6"
		at 50 mm	24.8° - 18.2° - 30.4°	26.7° - 15.2° - 30.5°	28.4° - 16.2° - 32.4°	201.0 mm / 7.9"
		at 80 mm	15.7° - 11.4° - 19.3°	16.9° - 9.6° - 19.3°	18° - 10.2° - 20.6°	187.4 mm / 7.4"
134 mm / 5.3"	4.7 Kg / 10.4 lb	at 18 mm	62.8° - 48.0° - 74.1°	67.4° - 53.1° - 79.6°	66.8° - 40.7° - 74.3°	264.0 mm / 10.4"
		at 50 mm	24.8° - 18.2° - 30.4°	27.0° - 20.4° - 33.4°	26.7° - 15.2° - 30.5°	231.6 mm / 9.1"
		at 80 mm	15.6° - 11.4° - 19.3°	17.1° - 12.8° - 21.2°	16.9° - 9.5° - 19.3°	213.9 mm / 8.4"
153 mm / 6"	7.5 Kg / 16.5 lb	at 45 mm	27.5° - 20.2° - 33.6°	29.9° - 22.6° - 36.9°	29.6° - 16.9° - 33.7°	234.4 mm / 9.6"
		at 150 mm	8.4° - 6.1° - 10.4°	9.1° - 6.9° - 11.4°	9.1° - 5.1° - 10.4°	2.0 mm / 0.1"
		at 250 mm	5.0° - 3.7° - 6.2°	5.5° - 4.1° - 6.9°	5.4° - 3.1° - 6.2°	-101.5 mm / -4.0"

ARRI/FUJINON Alura LDS Extender

Combining the Alura Zooms with Alura Extenders

Alura Zoom		Alura Extender	Resulting Combination
	Alura Lightweight Zoom 15.5-45/T2.8	Alura LDS Extender 1.4x	Alura 22-63/T4.0
		Alura LDS Extender 2.0x	Alura 31-90/T5.6
	Alura Lightweight Zoom 30-80/T2.8	Alura LDS Extender 1.4x	Alura 42-112/T4.0
		Alura LDS Extender 2.0x	Alura 60-160/T5.6
	Alura Zoom 18-80/T2.6	Alura LDS Extender 1.4x	Alura 25-112/T3.7
		Alura LDS Extender 2.0x	Alura 36-160/T5.2
	Alura Zoom 45-250/T2.6	Alura LDS Extender 1.4x	Alura 63-350/T3.7
		Alura LDS Extender 2.0x	Alura 90-500/T5.2

Name	Weight	Diameter without knobs	Length without knobs
Alura LDS Extender 1.4x	300 g / 0.66 lb	77 mm / 3.03″	44 mm / 1.73″
Alura LDS Extender 2.0x	530 g / 1.17 lb	77 mm / 3.03″	60 mm / 2.36″

ARRI Ultra Wide Zoom UWZ 9.5-18

Name	Lens Mount[1]	Focal Length *Wide*	Focal Length *Long*	Focal Length *Ratio*	Aperture	Close Focus[2]	Magnification Ratio[3]	Length[4]	Front Diameter[5]
Ultra Wide Zoom - UWZ 9.5-18/T2.9[16]	PL LDS	9.5	18	1.9	T2.9 - T22	0.55 m / 1'9"	1:10.7	335.5 mm / 13.2"	156 mm / 6.1"

For Annotations, see Page 120.
All data is subject to change without notice.

Maximum Housing Diameter[15]	Weight	Focal Length	Angle of view H – V – D			Entrance pupil[6]
			Normal 35[9] ID = 27.20 mm[7]	DIN Super 35[10] ID = 30.00 mm[7]	Alexa HD[12] ID = 27.26 mm[7]	
112 mm / 4.4"	4.8 Kg / 10.5 lb	at 9.5 mm	98.6° - 80.3° - 110.5°	103.5° - 87.0° - 115.7°	103.0° - 70.3° - 110.6°	310.4 mm / 12.22"
		at 14 mm	76.3° - 59.5° - 88.3°	81.2° - 65.5° - 94.0°	80.6° - 51.1° - 88.5°	309.4 mm / 12.18"
		at 18 mm	62.8° - 47.9° - 74.1°	67.3° - 53.1° - 79.5°	66.8° - 40.8° - 74.2°	308.0 mm / 12.13"

ARRI/ZEISS Master Macro Lens

Name	Lens Mount[1]	Aperture	Close Focus[2]	Magnification Ratio[3]	Length[4]	Front Diameter[5]
Master Macro 100/T2.0	PL LDS	T2.0/T4.3 to T32	0.35 m / 13 3/4"	1:1	210.0 mm / 8.27"	114 mm / 4.5"

For Annotations, see Page 120.
All data is subject to change without notice.

Maximum Housing Diameter[15]	Weight	Horizontal Angle of View		
		Normal 35[9] ID = 27.20 mm[7]	DIN Super 35[10] ID = 30.00 mm[7]	ANSI Super 35[11] ID = 31.14 mm[7]
138 mm/5.4"	2.6 kg / 5.7 lbs	12.42°	13.52°	14.02°

Annotations

Operation Temperature: -20°C to +40°C / -4°F to +104°F
Storage/Transport Temperature: -40C to +70°C / -40°F to +158°F

1 Positive locking (PL) 54mm stainless steel lens mount on some models with Lens Data System (LDS) contacts
2 Close focus is measured from the film/sensor plane
3 Magnification ratio is the relationship of the size of an object on the film/sensor plane (first number) to the size of that object in real life (second number) at the close focus setting (on zoom lenses also at the telephoto zoom setting; for Master Anamorphic Lenses: horizontal (H) and vertical (V)
4 Length is measured from the lens mount to the front of the lens housing
5 Diameter of the lens/matte box interface; Maximum lens housing diameter for the Master Macro 100 is 138 mm.
6 The distance from the entrance pupil to the film/sensor plane (at focus = infinity). Positive numbers indicate an entrance pupil in front, negative numbers indicate an entrance pupil behind the film/sensor plane. The entrance pupil (often mistakenly called "nodal point") is the center of perspective; moving the camera/lens system around the center of the entrance pupil prevents parallax errors. While largely irrelevant for live action, this measurement is important for special effects work.

7 The image diameter (ID) is the diameter of the image circle needed for the respective format. These lenses are designed for the largest ID given here.

8 Horizontal (H) and vertical (V) angles of view for a Super 35 Cinemascope camera aperture (22,5mm x 18,7mm / 0.8858" x 0.7362")

9 Horizontal (H), vertical (V) and diagonal (D) angles of view for a Normal 35 Academy camera aperture (1.37:1, 22mm x 16mm / 0.8661" x 0.6299")

10 Horizontal (H), vertical (V) and diagonal (D) angles of view for a DIN Super 35 Silent camera aperture (1.33:1, 24mm x 18mm / 0.944" x 0.7087")

11 Horizontal (H), vertical (V) and diagonal (D) angles of view for an ANSI Super 35 Silent camera aperture (1.33:1, 24.9mm x 18.7mm / 0.980" x 0.7362")

12 Horizontal (H), vertical (V) and diagonal (D) angles of view for the Alexa/D-21 HD camera aperture (1.78:1, 2880 x 1620 pixels, 23.76 mm x 13.37mm / 0.935" x 0.526")

14 Length is measured from the sensor plane to the front of the lens housing.

15 Excluding front and gear.

16 180° optical image rotation

Resources and Contacts

ARRI Sales Contacts

Europe, Middle East, Africa, India

Arnold & Richter Cine Technik GmbH & Co. Betriebs KG
(Headquarters, Sales & Service)
Türkenstraße 89, 80799 Munich, Germany
salessupport@arri.de
Tel: +49 (0)89 3809 0, Fax: +49 (0)89 3809 1245

ARRI CT Limited (Sales & Service)
2 Highbridge
Oxford Road, Uxbridge
UB8 1LX Middlesex, United Kingdom
Tel: +44 1895 457 000
Fax: +44 1895 457 001

ARRI Italia S.r.l. (Sales & Service)
Viale Edison 318,
20099 Sesto San Giovanni (Milano), Italy
info@arri.it
Tel: +39 (02)262 271 75, Fax: +39 (02)242 1692

Americas

ARRI Inc./West Coast & Mexico (Sales & Service)
600 North Victory Blvd., Burbank, CA 91502-1639, USA
info@arri.com
Tel: +1 (818)841 7070, Fax: 1 (818)848 4028

ARRI Inc. / East Coast (Sales & Service)
617 Route 303, Blauvelt, NY 10913-1109, USA
info@arri.com
Tel: +1 (845) 353 1400, Fax: +1 (845) 425 1250

ARRI Inc. / Central & Southern America (Sales)
2385 Stirling Road, Ford Lauderdale, FL 33312, USA
ventas@arri.com
Tel: +1 954 322 4545, Fax: +1 954 322 4188

ARRI Canada Limited (Sales & Service)
1200 Aerowood Drive,
Unit 29 Mississauga, Ontario L4W 2S7
info@arri.com
Tel: +1 416 255 3335, Fax: +1 416 255 3399

Asia

ARRI Asia Limited (Sales & Service)
2203B, The Centrium, 60 Wyndham Street,
Central, Hong Kong
info@arriasia.hk
Tel : +852 2571 9066, Fax : +852 2875 9181

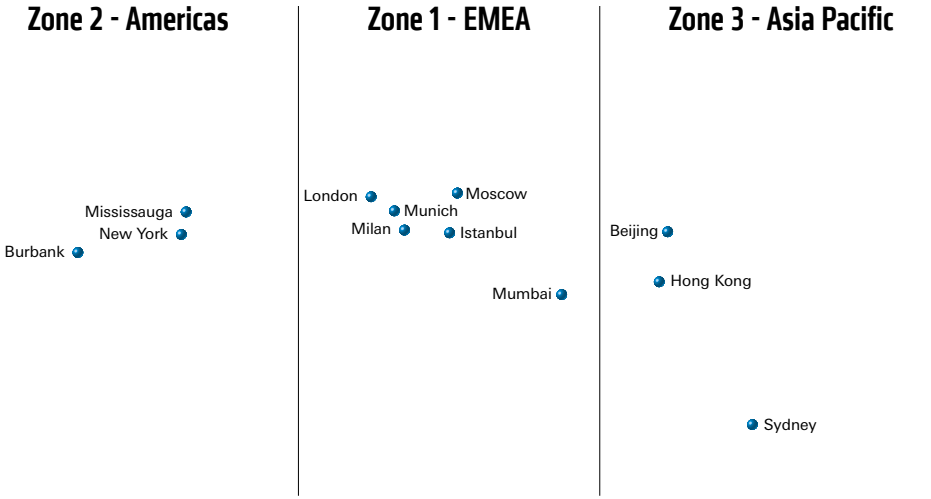
ARRI China (Beijing) Co. Ltd. (Sales & Service)
Chaowai SOHO Tower C, 6/F, 0628/0656
Chaowai Dajie Yi 6, Beijing, China
store@arrichina.com
Tel : +86 10 59009680, Fax : +86 10 59009679

Australia / New Zealand

ARRI Australia Pty Ltd (Sales & Service)
Level 1, Unit 1, 706 Mowbray Road,
Lane Cove NSW 2066, Sydney, Australia
info@arri.com.au
Tel: +61 2 9855 4300, Fax: +61 2 9855 4301

ARRI Service Contacts

Zone	Availability	Service Center	E-Mail	Telephone Hotline
1	Monday – Friday: 09:00 – 17:00 (CET)	**Munich, Germany** Arnold & Richter Cine Technik	service@arri.de	+49 (89) 3809 2121
	Monday – Friday: 09:00 – 17:30 (CMT)	**London, Great Britain** ARRI CT Limited	service@arri-ct.com	+44 1895 457 051
	Monday – Friday: 09:00 – 18:00 (CET)	**Milan, Italy** ARRI Italia S.r.l.	service@arri.it	+39 335 749 00 70
	Monday – Saturday 09:00 - 18:00 (MSK)	**Moscow, Russia** Bars-Pro Ltd.	arri@bars-pro.ru	+7 (495) 415 98 13 +7 (499) 586 02 99
	Monday – Friday: 9:00 – 18:00 (EET)	**Istanbul, Turkey** LINKA Ithalat Ihracat ve Dis Tic.	service@linkgroup.com.tr	+90 (212) 358 4520
2	Monday – Friday: 08:30 – 17:00 (PST)	**Burbank, USA** ARRI Inc. West Coast	service@arri.com	+1 877 565 2774
	Monday – Friday: 08:30 – 17:30 (EST)	**New York, USA** ARRI Inc. East Coast	service@arri.com	+1 877 565 2774
	Monday – Friday: 08:30 – 17:00 (EDT)	**Mississauga, Canada** ARRI Canada Limited	service@arri.com	+1 416 255 3335
3	Monday – Friday: 09:00 – 18:00 (HKT)	**Hong Kong** ARRI Asia Limited	service@arri.cn	+852 2537 4266
	Monday – Friday: 09:00 – 18:00 (CST)	**Beijing, China** ARRI China Co. Limited	service@arrichina.com	+86 10 5900 9680
	Monday – Saturday: 10:00 – 18:00 (CST)	**Mumbai, India** CINEOM Broadcast India Pvt. Ltd.	service@cineom.com	+91 22 42 10 9000
	Monday – Friday: 08:00 – 17:00 (AEST)	**Sydney, Australia** ARRI Australia Pty Limited	service@arri.com.au	+61 2 9855 4305



ARRI Service is the first port of call for all questions concerning the ALEXA cameras, with worldwide service centers and 24h availability on Monday to Friday. Well trained technicians cover all hardware- and software-related issues, upgrades or e.g. the recovery of cards that have been accidentally erased.

ARRI Digital Workflow Solutions

The Digital Workflow Solutions (DWS) group deals with all workflow related issues including ARRI Look File handling, data copying, backups, quality check, LUTs, metadata or working with Log C files. In addition the DWS group provides support for such tools as the ARRIRAW Converter, ARRI Look Creator, ARRI LUT Generator and ALEXA Frameline Composer.

Feel free to contact DWS at digitalworkflow@arri.de

This ARRI ALEXA Pocket Guide (Ident.-Nr.: 80.0003607) is published by Arnold & Richter Cine Technik, April 01, 2014

Arnold & Richter Cine Technik GmbH & Co. Betriebs KG · Türkenstrasse 89 · D-80799 Munich
Tel +49 (0)89 3809 0 · Fax +49 (0)89 3809 1245 · www.arri.com

Online Resources

Downloads	
ALEXA Manual	www.arri.com/alexa/downloads
ALEXA Dimensions	www.arri.com/alexa/downloads
ALEXA Software Update Packets	www.arri.com/alexa/downloads
Technical Details	
Frequently Asked Questions	www.arri.com/alexa/learn
ARRIRAW	www.arri.com/alexa/arriraw
ProRes / DNxHD	www.arri.com/alexa/sxs
Software Tools (apps):	
ARRIRAW Converter (ARC)	www.arri.com/alexa/tools
ARRI Look Creator (ALC)	www.arri.com/alexa/tools
ARRI Meta Extract	www.arri.com/alexa/tools
Software Tools (online):	
ALEXA Camera Simulator	www.arri.com/alexa/tools
ALEXA Frameline Composer	www.arri.com/alexa/tools
LUT Generator	www.arri.com/alexa/tools
Lens Illumination Guide	www.arri.com/alexa/tools

ALEXA Pocket Guide WebApp

www.arri.com/alexa/apg