ALEXA
ALEXA PLUS

ARRI ALEXA is an extraordinary 35 format film-style digital camera system designed for the motion picture and broadcast markets, consisting of four cameras and an extensive range of primes, zooms, accessories and recording solutions. Currently available are the original ALEXA and the ALEXA Plus, which adds support for the ARRI Wireless Remote System, cmotion cvolution lens control system, ARRI Lens Data System and expanded metadata. These cameras will be joined by the ALEXA M, a modular system with a separate camera head for 3D applications and lightweight camera configurations and the ALEXA Studio, the only digital motion picture camera with an optical viewfinder and a 4:3 sensor.

All ALEXA cameras offer exceptional image quality with the organic look and feel of film; their unequalled exposure latitude, high sensitivity and unique ARRI color processing provide sharp and natural images for 2K and HD with a cinematic look of breathtaking richness and detail.

Making them the perfect tools for a wide range of workflow and budget requirements, ALEXA cameras can simultaneously output a number of formats, all with audio and metadata. Their ability to record Apple ProRes images to on-board SxS PRO cards offers file-based workflows of unparalleled efficiency for immediate time and cost savings. ARRIRAW delivers the pinnacle in image quality and postproduction flexibility, while the HD-SDI outputs integrate seamlessly into existing HD infrastructures.

Based on over 90 years of experience in building equipment for the motion picture industry, ALEXAs are true ARRI cameras: simple to operate, ergonomic in design and reliable in even the most extreme environments. ALEXA cameras are designed around the way *you* work and, like all other ARRI products, are backed by the global ARRI service network.

To provide more choices to the filmmaker, the ALEXA system is based on an open architecture with many industry-standard interfaces and compatibility with third party products. This, in combination with a number of components on the camera that can be upgraded, makes the system future-proof.

More than just hardware, ALEXA cameras represent an entire image pipeline that stands alone as the most complete and powerful digital production system ever built.

Main Features

Exceptional Image Performance

- Film-like, organic look
  - extended, clean highlights
  - extremely low noise floor
  - natural skin tones
  - excellent color separation
  - cinematic depth of field
- Wide exposure latitude of 14 stops over the entire EI range
- EI 800 base sensitivity (EI 160 to EI 3200)
- Sharp, natural images for 2K and HD

Efficient and Versatile Workflows

- Multiple output options
  - ProRes, ARRIRAW and HD-SDI
  - Log C, Rec 709 or DCI P3
  - ARRI Look Files for custom looks
  - audio recording
  - integrated rich metadata
- Apple ProRes
  - on-board file-based recording
  - onto SxS PRO cards
  - all five Apple ProRes codecs
  - same codec as FCP uses: Shoot > Edit
- ARRIRAW
  - best format for 2K deliverables
  - best quality for VFX productions
  - greatest flexibility in post
  - best option for archiving
- HD-SDI
  - integrates into existing HD infrastructures
  - configurable HD-SDI outputs

ARRI Product Quality

- Rugged and reliable
- Simple and safe operation
- Well balanced, ergonomic design
- Precision sync for 3D
- Powerful assistive displays, including
  - surround view
  - false color exposure check
  - peaking focus check
  - compare stored image with live image
  - electronic level
  - RETURN IN video
  - optional anamorphic de-squeeze
- Compatible with existing accessories
- Worldwide ARRI service network

Open, Future-proof Architecture

- Compatibility with industry standards
  - PL mount lenses
  - HD-SDI, ProRes, SxS PRO cards
  - Gold mount or V-lock on-board batteries
  - 12 or 24 V power inputs and outputs
  - support for cmotion lens control systems
  - support for cmotion cvolution lens control systems
  - support for ARRIRAW by third party post tools
- Numerous upgrade options
  - upgradable Storage Interface Module
  - upgradable Electronics Interface Module
  - Exchangeable Lens Mount (ELM)
  - easy and powerful free software updates
  - new features through purchase of license

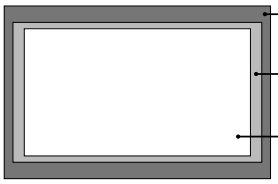
Further Resources & Online Tools

Frequently Asked Questions	http://www.arridigital.com/alexa/faq
ALEXA Manual	http://www.arri.com/goto/downloads/alexa
Digital Camera Basics	http://www.arridigital.com/creative/camerabasics
ALEXA Camera Simulator	http://www.arridigital.com/technical/simulator
ALEXA Frame Line Composer	http://www.arridigital.com/technical/aflc
ALEXA LUT Generator	http://www.arridigital.com/technical/luts

Ident.-No.: K5.40948.A · Technical data subject to change without further notice.
Arnold & Richter Cine Technik GmbH & Co. Betriebs KG · Türkenstrasse 89 · D-80799 Munich · phone +49 (0)89 3809 0 · fax +49 (0)89 3809 1245 · www.arri.com

ALEXA – Technical Data

Camera Type	35 format film-style digital camera with integrated shoulder arch and receptacles for 15 mm lightweight rods.
Sensor	35 format ALEV III CMOS with Dual Gain Architecture (DGA) and Bayer pattern color filter array. 1.5x oversampling for 1920 x 1080 output. 1.78:1 (16:9) sensor area used for image out.
Frame Rates	ProRes 422 (Proxy), 422 (LT), 422 and 422 (HQ): 0.75 - 60 fps; ProRes 4444: 0.75 - 40 fps; HD-SDI: 0.75 - 60 fps; ARRIRAW: 0.75 - 30 fps; all speeds adjustable with 1/1000 fps precision
Shutter	Electronic rolling shutter, adjustable from 5.0° to 358.0° with 1/10 degree precision.



Sensor Size 3392 x 2200 Pixels (1.54:1)
27.98 mm x 18.15 mm / 1.102" x 0.715"
Image circle: 33.35 mm / 1.313"

Surround View 3168 x 1782 Pixels (1.78:1)
26.14 mm x 14.70 mm / 1.013" x 0.579"
Image circle: 29.99 mm / 1.181"

Image Out 2880 x 1620 Pixels (1.78:1)
23.76 mm x 13.37 mm / 0.935" x 0.526"
Image circle: 27.26 mm / 1.073"

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 and DCI P3 have 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.
White Balance	Separate red/blue and green/magenta balance available through Auto White Balance or manual setting. Red/blue: 2000 to 11000 Kelvin, adjustable in 100 K steps, with presets of 3200 (tungsten), 4300 (fluorescent), 5600 (daylight), 7000 (daylight cool). Green/magenta: -8 to +8 color correction (CC), 1 CC = 035 Kodak CC values or 1/8 Rosco values.
Sound Level	Under 20 dB(A) at ≤ +30° Celsius (≤ +86° Fahrenheit) with lens attached and fan mode set to 'Regular', measured 1 m/3 feet from the image plane. Silent operation at higher temperatures possible with fan mode set to 'Rec low'.
Power In	Three inputs: BAT connector, battery adapter back and battery adapter top. All accept 10.5 to 34 V DC. 85 W power draw for camera and EVF-1 in typical use recording to SxS PRO cards, without accessories.
Power Out	12V connector: limited to 12 V, up to 2.2A. RS, EXT and ETHERNET: input below 24V is regulated up to 24V, above 24V: input = output voltage. Both RS and EXT connectors combined: up to 2.2A. ETHERNET: up to 1.2A. Maximum power draw is also limited by the power source.
Weight	ALEXA camera body + SxS Module: 6.3 Kg/13.8 lbs ALEXA camera body + SxS Module + EVF-1 + Viewfinder Mounting Bracket VMB-2 + viewfinder cable + Center Camera Handle CCH-1: 7.7 Kg/16.9 lbs
Dimensions	Length: 332 mm/12.95", width: 153 mm/6.02", height: 158 mm/6.22"
Environmental	-20° C to +45° C (-4° F to +113° F) @ 95% humidity max, non condensing. Splash and dust proof through sealed electronics. System cooling through radiator/single fan.
Lens Mount	ARRI Exchangeable Lens Mount (ELM); ships with Lens Adapter PL Mount w/o LDS (LA-PL-1), 54 mm stainless steel PL mount, Super 35 centered.
Flange Focal Depth	52.00 mm nominal
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.
Assistive Displays	On EVF-1 and MON OUT: frame lines, surround view, camera status, false color exposure check, peaking focus check, compare stored image with live image, RETURN IN video and optional anamorphic de-squeeze.
Control	Camera right: main user interface with 3" transflective 400 x 240 pixel LCD color screen, illuminated buttons and jog wheel. Camera left: operator interface with illuminated buttons and card swap button. EVF-1: viewfinder and basic camera settings, ZOOM button (2.25x pixel to pixel magnification), EXP button (false color exposure check) and jog wheel.
In-camera Recording	Apple QuickTime/ProRes 4444, 422 (HQ), 422, 422 (LT) or 422 (Proxy) 1080p .mov files with embedded audio, timecode and metadata, recording to SxS PRO cards. ProRes 4444 is RGB 12 bit, all others YCbCr 10 bit; all legal range. Minimum recording times on a 32 GB card at 24 fps: ProRes 4444 - 15 minutes, ProRes 422 (HQ) - 19 minutes.
Recording Outputs	2x REC OUT BNC connectors for uncompressed ARRIRAW or uncompressed HD-SDI video. Both with embedded audio, timecode and metadata. ARRIRAW: 2880 x 1620, 12 bit log signal without white balance or exposure index processing applied. Requires an ARRIRAW T-Link certified recorder. HD-SDI video: 1920 x 1080 4:4:4 RGB or 4:2:2 YCbCr; all legal or extended range, with optional HD-SDI record flag. Recording frame rates other than HD standard (23.976, 24, 25, 29.97, 30, 50, 59.94, 60 fps) requires a recorder with Variflag support.
Monitor Output	1x MON OUT BNC connector for uncompressed HD-SDI video: 1920 x 1080, 4:2:2 YCbCr; legal range.
Color Processing	For EVF-1, ProRes, REC OUT and MON OUT: Log C (film matrix off), Log C (film matrix on), Rec 709 or DCI P3. For Rec 709 and DCI P3 a customized look can be applied with ARRI Look Files.
Synchronization	Master/Slave mode for precision sync of sensor, processing and HD-SDI outputs for 3D applications.
Playback	QuickTime clips can be played back from SxS PRO cards to the EVF-1, MON OUT and REC OUT. Playback audio is available embedded in the MON OUT and REC OUT signals and on the headphones jack.
Processing	16 bit linear internal image processing
Audio	1x XLR 5 pin AUDIO IN connector for 2 channel, line level balanced audio input, 24 bit/48 kHz A/D conversion, works at 23.976, 24, 25, 29.97 and 30 fps. Audio is recorded uncompressed into the QuickTime/ProRes file and embedded uncompressed in all HD-SDI outputs, including ARRIRAW T-Link. Max of 2.5 dBm output from AUDIO OUT headphones connector.
Connectors	2x slots for SxS PRO cards (SxS) 2x BNC recording out HD-SDI, 1.5G/3G (REC OUT 1 and REC OUT 2) 1x BNC monitoring out HD-SDI, 1.5G (MON OUT) 1x XLR 5 pin audio in (AUDIO IN) 1x BNC return signal/sync in HD-SDI, 1.5G (RET/SYNC IN) 1x LEMO 16 pin external accessory interface (EXT) 1x Fischer 2 pin 24 V power in (BAT) 2x Fischer 3 pin 24 V remote start and accessory power out (RS) 1x LEMO 2 pin 12 V accessory power out (12 V) 1x LEMO 5 pin timecode in/out (TC) 1x TRS 3.5 mm headphone mini stereo jack out (AUDIO OUT) 1x LEMO custom 16 pin electronic viewfinder (EVF) 1x LEMO 10 pin Ethernet with power (ETHERNET)
SD Card	For importing ARRI Look Files, camera set up files, frame line files and feature licenses. Stores captured stills in ARRIRAW (.ari, 12 bit), TIFF (.tif, 16 bit), DPX (.dpx, 10 bit) and JPEG (.jpg, 8 bit) format as well as log files. Also used for software updates.
Upgrades	The Storage Interface Module (currently available for SxS PRO cards) 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. Exchangeable Lens Mount (ELM) allows other lenses beyond PL mount lenses to be used. Simple camera software updates. Licenses available for purchase: Anamorphic de-squeeze.

ALEXA Plus – Technical Data

Same as ALEXA, but with built-in support for the ARRI Wireless Remote System, cmotion cvolution lens control system and ARRI LDS Lens Data System (including Lens Data Mount and Lens Data Archive for lenses without built-in LDS). Also has one additional MON OUT, one additional RS, two LCS, one LDD and three lens motor connectors, built-in motion sensors and Quick Switch BNC connectors.

Weight	ALEXA Plus camera body + SxS Module: 7.0 Kg/15.4 lbs ALEXA Plus camera body + SxS Module + EVF-1 + Viewfinder Mounting Bracket VMB-2 + viewfinder cable + Center Camera Handle CCH-1: 8.4 Kg/18.5 lbs
Power Out	Same as ALEXA
Dimensions	Length: 332 mm/12.95", width: 175 mm/6.89", height: 158 mm/6.22"
Lens Mount	ARRI Exchangeable Lens Mount (ELM); ships with Lens Adapter PL Mount with LDS contacts (LA-PL-2), 54 mm stainless steel PL mount, Super 35 centered.
Assistive Displays	On EVF-1 and MON OUT: electronic level.
Synchronization	Automated sync of lens settings for 3D applications in Master/Slave mode.
SD Card	For importing custom lens tables for the Lens Data Archive.

Note: All technical data based on Software Update Packet (SUP) 4.0. All data subject to change without notice.