ARRI

ALEXA M

ALEXA M is the specialist in the ALEXA family of cameras, shining with its ability to fit into applications and environments which would challenge a full-sized ALEXA. ALEXA M is the ideal camera for 3D rigs, action shots, Steadicams, aerial work, and underwater photography and in general for placing a camera in very tight or safety critical spots.

The head and body of the M are connected with a high performance fiber optic cable, which in a hybrid form can also be used for powering the head. Weighing less than 3 kg, the compact front end offers multiple mounting points and versatile maneuverability. Be it inside a car, in a tight corner of a room, inside a helicopter gimbal or paired on a 3D rig – the M-head fits there, delivering beautiful ALEXA images to the system's processing and recording unit which can be kept apart from the head in a more accessible location, allowing full camera control and media access.

Part of the Family

ALEXA M shares the same genes as the other cameras in the ALEXA family; it offers the same exceptional image performance, unsurpassed exposure latitude, high sensitivity, natural skin tones and an organic, film-like image quality. Also, like its siblings, it provides an unrivaled choice of efficient workflow options including in-camera recording of Apple ProRes or AVID DNxHD files, simultaneous HD-SDI output in all conceivable flavors and/or ARRIRAW recording, the highest quality uncompressed and unencrypted image format.

ALEXA M has a PL mount with LDS (Lens Data System) contacts, works perfectly with existing 35 mm lenses and is compatible with a wide range of ARRI accessories.

The camera can be switched from 16:9 sensor mode to 4:3 sensor mode for anamorphic productions which makes it a perfect companion for all other ALEXA cameras. Anamorphic de-squeeze and high speed license are built in the M by default.

Main Features

Separate camera head and body
- Highest flexibility on set
- Small form factor and low weight of M-head for lightweight and size-critical camera and 3D applications
- Fiber optic interface between M-Head and M-Body for long distance signal transmission
- Physical separation of sensor and back-end electronics enables accessibility of the body's user interface and image outputs in special shooting situations

ALEXA quality and versatility
- Exceptional image quality
- Efficient and versatile workflows
- ARRI product quality
- Simple and safe operation
- ARRI global service centers

4:3 Super 35 Sensor
- Ideal for anamorphic shoots
- Extra room for vertical repositioning of spherical images

Inbuilt Options
- Includes anamorphic de-squeeze license
- Includes high speed license

ALEXA M – Specifications

Camera Type	35 format film-style digital camera with separate camera head and body.
Sensor	35 format ALEV III CMOS sensor with Dual Gain Architecture (DGA) and Bayer pattern color filter array.
Photosites	
16:9 sensor mode:	2880 x 1620 for ARRIRAW, 2880 x 1620 down sampled to 1920 x 1080 for HD video, ProRes and DNxHD
4:3 sensor mode:	2880 x 2160 for ARRIRAW, 2880 x 2160 down sampled to 1440 x 1080 (pillar box) for monitoring in EVF-1 and HD video (MON OUT only)
Operating Modes	16:9 or 4:3 sensor mode. 4:3 mode is currently only available for ARRIRAW. Regular (max. 60 fps) or High Speed mode (max. 120 fps).
Frame Rates	
16:9 sensor mode:	ProRes 422 (Proxy), 422 (LT), 422 and 422 (HQ), DNxHD 145 and 220x: 0.75 – 120 fps; ProRes 4444: 0.75 – 60 fps; HD-SDI: 0.75 – 60 fps; ARRIRAW: 0.75 – 60 fps
4:3 sensor mode:	ARRIRAW: 0.75 – 48 fps
Shutter	Electronic rolling shutter, 0.75 - 60 fps: 5.0° - 356.0°, 60 - 120 fps: 356°. Shutter angle setting precision: 1/10 degree.
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 are the same except for 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.
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 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) @ 24 fps and ≤ +30° Celsius (≤ +86° Fahrenheit) with lens attached, measured 1 m/3 feet in front of the lens.
Power In	Three inputs at the camera body: BAT connector, battery adapter back and battery adapter top. All accept 10.5 to 34 V DC. 85 W power draw for body in typical use recording to SxS PRO cards, without accessories. 40W power draw for head in typical use without accessories. A minimum of 15V power input to the body is required to power the camera head from the body through a standard SMPTE 311M hybrid fiber 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 from the camera body.
Power Out	Several outputs at the camera body: 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 offers two RS connectors and one ETHERNET connector, with the same specifics as on the camera body.
Weight	ALEXA camera body + SxS Module: 5.5 kg/12.1 lbs; ALEXA camera head: 2.9 kg/6.4 lbs
Dimensions	Body: Length: 323mm, width: 153mm, height: 158mm; Head: Length: 212mm, width: 129mm, height: 149mm More detailed drawings can be found in the ALEXA Dimensions PDF on our Downloads Website: http://www.arri.com/downloads
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 on camera head and body.
Lens Mount	ARRI Exchangeable Lens Mount (ELM); ships with Lens Adapter PL Mount with LDS contacts, 54 mm stainless steel PL mount, Super 35 centered.
Flange Focal Depth	52.00 mm nominal
Viewfinder (optional)	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.
Assistive Displays	For 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 anamorphic de-squeeze. MON OUT only: Reel & clip number.
Control	Camera body right: main user interface with 3" transflective 400 x 240 pixel LCD color screen, illuminated buttons, button lock and jog wheel. Camera head back: REC button and POWER button (POWER button is active when head is run by local power supply through the head's BAT input).
In-camera Recording	Records Apple QuickTime files with ProRes encoding or MXF files with DNxHD encoding onto either one or two (Dual Recording) SxS PRO cards. All codecs legal range with embedded audio, timecode and metadata.
Recording Outputs	2x 1.5 G or 3G REC OUT BNC connectors on the camera body for ARRIRAW T-Link or HD-SDI video. Both with embedded audio, timecode, metadata and optional recording flag. ARRIRAW 2880 x 1620 (16:9), 2880 x 2160 (4:3) uncompressed 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; both legal or extended range. 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 on the camera body for uncompressed 1.5G HD-SDI video: 1920 x 1080 (16:9), 4:2:2 YCbCr legal range.
Image Processing	16 bit linear internal image processing. Target color spaces for all ProRes codecs, DNxHD 220x, REC OUT and MON OUT: Log C (film matrix off), Log C (film matrix on), Rec 709 or DCI P3. Target color spaces for DNxHD 145: Rec 709 or DCI P3. For Rec 709 and DCI P3 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.
Playback	QuickTime/ProRes or MXF/DNxHD 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.
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 or MXF/DNxHD files 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	Camera body
	2x BNC recording out HD-SDI, 1.5G/3G	REC-OUT 1/2	Camera body
	1x BNC monitoring out HD-SDI, 1.5G	MON OUT	Camera body
	1x XLR 5 pin audio in	AUDIO IN	Camera body
	1x BNC return signal HD-SDI, 1.5G	RET/SYNC IN	Camera body
	1x LEMO 16 pin external accessories	EXT	Camera body
	1x Fischer 2 pin 24 V power in	BAT	Camera body
	2x Fischer 3 pin 24 V remote start and accessory power out	RS	Camera body
	1x LEMO 2 pin 12 V accessory power out	12 V	Camera body
	1x LEMO 5 pin timecode in/out	TC	Camera body
	1x TRS 3.5 mm headphone mini stereo jack out	AUDIO OUT	Camera body
	2x LEMO 10 pin Ethernet with 24 V power	ETHERNET	Camera body
	1x LEMO SMPTE 304M hybrid fiber connector	Optical Link	Camera body
	1x LEMO SMPTE 304M hybrid fiber connector	Optical Link	Camera head
	1x LEMO custom 16 pin electronic viewfinder	EVF	Camera head
	1x Fischer 2 pin 24 V power in	BAT	Camera head
	2x Fischer 3 pin 24 V remote start and accessory power out	RS	Camera head
	1x LEMO 10 pin Ethernet with 24 V power	ETHERNET	Camera head

SD Card	For importing ARRI Look Files, camera set up files, frame line files and feature license keys. Stores captured stills from the REC OUT image path during Regular Speed (not High Speed) 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, High Speed and DNxHD.