

# ARRI NEWS

NAB ISSUE 2015



## ALEXA MINI

Full ALEXA image quality  
in a compact form factor



## ANAMORPHIC ULTRA WIDE ZOOM

Wide-angle anamorphic with  
the AUWZ 19-36/T4.2



## L10 LED FRESNEL

Bright new L10 fixture completes  
the L-Series family



## ALEXA SXT

New SXT cameras are the next step  
in ALEXA's continuing evolution





## DEAR FRIENDS AND COLLEAGUES


This issue of ARRI News is full of new products for 2015, across all of our various business units. With the introduction of the ALEXA Mini and ALEXA 65, the announcement of ALEXA SXT and improvements to AMIRA, we offer a camera for every different production type and shot requirement. Our overriding focus remains on future-proofing customer investment through a combination of the highest image quality with the most efficient workflows on set and in post.

By taking a balanced approach to the many different parameters that determine image quality we maximize compatibility with future technology standards that will be defined not just by spatial resolution, but also by higher dynamic range, higher frame rates and wider color gamuts. Through the 'UHD Alliance,' leading content providers and manufacturers are finding consensus on UHD standards, and it is now clear that HDR will be a key element in next-generation consumer televisions. With their unsurpassed dynamic range, ALEXA and AMIRA are uniquely suited to HDR

display and even today, footage shot with ARRI cameras for one medium can easily be adapted for another – the recent IMAX screenings of *Game of Thrones* episodes captured with ALEXA in HD are a case in point.

We're excited to be introducing the new SkyPanel and L10 lights, which reflect our ongoing commitment to multichannel LED technology. The L10 makes the L-Series a complete family of fixtures, while the SkyPanel is an entirely new concept – one that will re-write the rules on what can be achieved with LED.

Our goal with every single new product is to fulfil the promise of the ARRI brand – a promise that we have been keeping for nearly 100 years, of uncompromising quality and long-term value for our customers.

  
Dr. Jörg Pohlman

  
Franz Kraus



# CONTENTS

## CAMERA

- 8 ALEXA 65 system now out on first productions
- 10 Aerial shooting with the ARRI Ultra Wide Zoom
- 12 New tools for electronic camera and lens control
- 14 Introducing the new ALEXA SXT cameras
- 16 ALEXA Software Update Packet SUP 11.0
- 20 Super-lightweight ALEXA Mini
- 22 First test shoot with the ALEXA Mini
- 24 Master Anamorphics on *Insurgent*
- 26 Versatile flare sets for the Master Anamorphics
- 30 DP Duane McClunie takes AMIRA to extremes
- 32 Anamorphic Ultra Wide Zoom 19-36/T4.2
- 34 New Pro Camera Accessories



## LIGHTING

- 4 SkyPanel: the groundbreaking new LED soft light
- 18 L5 LED Fresnels allow changeable lighting at Moscow gallery
- 28 Big and bright new L10 fixture added to the L-Series line-up

## DI SYSTEMS

- 36 ARRISCAN Wet Gate aids Polish film restoration

## CONTACTS



# SKYPANEL®



## SOFT LIGHTING REDEFINED

*Slim, bright and tuneable: the new line of ARRI SkyPanel LED soft lights*

ARRI proudly introduces SkyPanel, a brand new line of LED fixtures. SkyPanel is a compact, ultra-bright and high-quality LED soft light that sets a new standard for the industry. With a design focused on form, color, beam field and output, SkyPanel represents the culmination of more than a decade of research and development of LED technology at ARRI.



### TWO SIZES FOR LIMITLESS APPLICATIONS

SkyPanel will initially be available in two sizes: the S60 and S30. The S60 is a mid-range model, featuring a light aperture of 645 mm x 300 mm and accommodating the vast majority of applications. The S30 is a smaller, more portable version; half the length of the S60, it is perfect for on-the-go mobile applications. Both models are available in fully color tuneable and remote phosphor versions.

### FULLY TUNEABLE, EXCELLENT COLOR RENDERING

Incorporating features of ARRI's successful L-Series LED Fresnels, SkyPanel is one of the most versatile soft lights on the market, as well as one of the brightest. Like the L-Series, SkyPanel 'C' (Color) versions are fully tuneable; correlated color temperature is adjustable between 2,800 K and 10,000 K, with excellent color rendition over the entire range. Full plus and minus green correction can be achieved with the

simple turn of a knob, and in addition to CCT control, vivid color selection and saturation adjustment is also possible. Applications for this controllability range from quickly adjusting the CCT to set the mood of a scene, to selecting the perfect green color to wash a greenscreen. Each LED light engine is computer calibrated in order to ensure unit-to-unit and batch-to-batch consistency, as well as accurate color temperatures.



## MAIN FEATURES

- Two models: S60 and smaller S30
- Fully tuneable and remote phosphor versions
- Tremendous light output
- Soft, clean shadows
- Outstanding color rendition
- Interchangeable diffusion panels
- Large aperture for smooth, even light
- On-board battery input for portable operation



### POWERFUL LIGHT OUTPUT

Unlike other tuneable fixtures, SkyPanel makes no sacrifice when it comes to light output. SkyPanel puts out a tremendous amount of light, in a soft and uniform beam field. Brighter than a 2 kW tungsten soft light or a 6 kW tungsten space light, the SkyPanel S60 has more than enough light for most applications. At the same time, the lamphead is able to perform beautifully at lower light levels. This range of illumination and color gives users an unprecedented amount of control.

### TRUE SOFT LIGHT BEAM QUALITY

Soft lights are known for their smooth quality of light and even, uniform beam field – SkyPanel is no different. The combination of the curated selection of diffusion panels, LED mixing chamber and large light aperture allow for the light to wrap around objects, eliminating sharp shadows and making for a perfect beauty light. The beam field is homogeneous in both color and intensity.

### NATURAL SHADOW RENDITION

Mixing some 2,000 calibrated red, green, blue and white LEDs into one homogeneous beam of soft light, SkyPanel produces not just excellent light, but excellent shadows as well. The shadows are soft in nature and do not exhibit multiple edges or strange colors. Recognizing that a diffused light source is not enough to make a true soft light, ARRI has also given SkyPanel one of the largest light apertures in its power class. This substantial opening contributes significantly to the soft quality of light and wrapping of the source around a subject.

### VERSATILITY BUILT IN

While the SkyPanel was designed to be used primarily as a soft light to illuminate people, various built-in features make it extremely versatile. The diffuser panels on the front of the lamphead are interchangeable, so going from the Heavy Diffusion panel to the Lite Diffusion can be done in a matter of seconds, and further diffusion accessories are planned. With the on-board battery input, SkyPanel can be run off industry-standard batteries for untethered soft light requirements. The S60 can be operated at up to 50% of its total power on battery, and the S30 can be used at full power.

The SkyPanel also makes an amazing space light; by providing a large pool of downward soft light, as well as the ability to change CCT and vivid colors, it offers a compelling alternative to conventional space lights.



### BUILT TO LAST

Made in Germany to the high standards for which all ARRI products are known, SkyPanel is built to last – constructed from resilient materials and assembled by hand with great care. The combination of an aluminum core with fiberglass-reinforced thermoplastics results in a solid fixture that can withstand heavy daily use on busy film sets. The electronics have been designed to last beyond a minimum of 25,000 hours, and to be easily serviceable. The LED light engine even allows for recalibration, further enhancing SkyPanel's credentials as a long-lasting, high-quality fixture.

Other features include a LAN port for network connectivity, USB-A port for firmware updates via thumb drive, and many more.

### REMOTE PHOSPHOR VERSIONS

If tuneability is not required, a remote phosphor version of the SkyPanel is also available. Remote phosphor technology uses powerful blue LEDs to excite a panel coated in phosphors, which is positioned further away from the LEDs. These high-quality phosphors deliver near-perfect color rendition and outstanding light output. The remote phosphor versions of SkyPanel are roughly 10% brighter than the color versions and have a lower price point. Different color temperature panels are available, including 2,700 K; 3,200 K; 4,300 K; 5,600 K; and 6,500 K.



Visit the SkyPanel microsite:  
[www.arri.com/skypanel](http://www.arri.com/skypanel)



Watch the SkyPanel demo reel:  
[www.arri.com/goto/0415/skypanel](http://www.arri.com/goto/0415/skypanel)

The SkyPanel S60 will start shipping in September 2015, with the S30 becoming available shortly afterwards.



## 65 MM REBORN

After outstanding feedback from demos and field testing, the ALEXA 65 system is now in use on its first major productions



Following a series of very successful worldwide launch events, ARRI Rental is now experiencing significant demand for the ALEXA 65 camera system. An upgrade to the ALEXA 65 recorder hardware due this summer, allowing for longer recording times and higher uncompressed frame rates, will further stimulate demand. In response, ARRI Rental will initially make the ALEXA 65 system accessible to the global creative community via direct rental through its own network of rental offices, and in due course via partnerships with other rental companies capable of providing the highest levels of service and support.



"On Zhang Yimou's *The Great Wall* we are delighted to be the first film to use the ALEXA 65 as our main unit A-camera. Although we haven't yet commenced principle photography, we have been shooting tests with our leads in full hair, makeup and costume. What is totally blowing our minds is how great the close-ups are looking. Skin tones are great, detail is amazing without being overly sharp, and the way focus rolls off is very appealing. Now we can't wait to see the detail in the crowd scenes!"

Stuart Dryburgh, ASC



"From the first shot that I framed with the ALEXA 65 both the director and I were seduced by its power, innate qualities and unique perspective. I see this camera as an essential and critical development in the evolution of digital

cinematography, once again giving filmmakers access to 65 mm – a format steeped in cinema history of the highest lineage."

Jess Hall, BSC



### EASY WORKFLOWS WITH ARRIRAW

ALEXA 65 captures in the ARRIRAW format, which delivers uncompressed, uncompromised and unencrypted images. Working closely with Codex, ARRI Rental has created a high-performance workflow that processes full-resolution ARRIRAW 65 mm images and can run on either a purpose-configured ARRI Rental Vault S or the new ARRI Rental Lab 65.



LAB 65

For dailies generation and archival, productions can choose whatever workflow tools and facilities suit them best, just as they can with ARRIRAW 35 mm. High-speed connections to a local SAN for copy and backup, or to systems running standalone workflow tools such as Colorfront OSD can be easily achieved using a fast Ethernet connection from the ARRI Rental Vaults.

### UNSURPASSED IMAGE QUALITY

The ALEXA 65 sensor is of exactly the same design as that found in ARRI's successful 35 mm format ALEXA cameras, aside from being much larger. With an open gate resolution of 6560 x 3100, ALEXA 65 offers the same incredible sensitivity, high dynamic range and natural colorimetry as ALEXA, but with far greater spatial resolution. This results in images that look stunningly life-like on the largest cinema screens, while maintaining ALEXA's famously organic texture and pleasing skin tones.

### A COMPLETE SYSTEM

Launched as an integral part of the ALEXA 65 system is a range of high-performance 65 mm prime and zoom lenses that do justice to the exceptional levels of detail captured by the camera. The 50-110 mm Zoom 65 and the eight Prime 65 lenses, ranging from 24 mm to 300 mm, utilize state-of-the-art optics from Hasselblad, housed in classically robust and uniform lens barrels co-developed with IB/E Optics.



PRIME 65 / ZOOM 65

Working practices on set are just as simple and unrestricted. The ALEXA 65 camera is of comparable size and weight to the ALEXA Studio, with an ergonomic design that allows handheld and fast-paced shooting. Solid, reliable and versatile, ALEXA 65 is poised to write a new chapter in 65 mm filmmaking.



### LDS XPL MOUNT

The Prime 65 and Zoom 65 lenses feature an XPL mount equipped with the ARRI Lens Data System (LDS), allowing frame-accurate metadata about focus, iris and zoom settings to be recorded with the image stream. This data can be used on set for wireless remote lens control, but it can also be used in postproduction, reducing the time and cost involved in generating complex visual effects shots.





# DYNAMIC MOTION WITH THE UWZ

*Anders Holck flies fast and low to shoot amazing aerial footage in New Zealand with the 9.5-18 mm Ultra Wide Zoom*



The ARRI Ultra Wide Zoom UWZ 9.5-18/T2.9 is a uniquely distortion-free, extreme wide-angle zoom with an optical performance that surpasses most high-end cine prime lenses. Cinematographer, Steadicam operator, helicopter operator and CTO/founder of a Danish rental facility, Anders Holck recently purchased the UWZ and used it with an ALEXA M in a gyro-stabilized head to shoot spectacular aerial footage around Queenstown in New Zealand.

### What got you interested in the UWZ?

We were looking to buy a Shotover F1 head for our rental company, which is called Red Rental although we rent out ARRI cameras almost exclusively at the moment. I saw the UWZ at NAB last year and we were immediately interested because we didn't have anything in that range. The widest lens we had was a



10 mm Ultra Prime, but its front diameter is too big to fit in the head. Also, when you are in a chopper you really need some focal length range, so a zoom lens is very useful.

We actually bought the UWZ before we got the F1 head – we needed it for another

assignment that involved shooting down a mine. That was done with an ARRI AMIRA on a Steadicam and the footage was stunning. We wanted a wide field of view in the mine but I could only take one lens down there and didn't know exactly what focal length would be right, so the UWZ was ideal.

### How did the aerial shoot come about?

No-one had used the UWZ in an F1 head before, so there were no mounts for the lens. Our idea was to ship it to the Shotover guys in New Zealand so they could start making some bracket mounts, and then to go down there ourselves and shoot a test that would demonstrate what the lens can do. Of course New Zealand is prettier and has a few more mountains than Denmark, so it wasn't something we could have done around here!



DP Anders Holck

### Did the lens perform well?

Mostly I was on the wide end of the lens and the way it renders the image without any distortion is very impressive. We filmed over water and the flat horizon demonstrated that lack of distortion; when

I tilted up the horizon line stayed straight. Panning just a little while the chopper was moving created a really nice effect because of the optical qualities of the lens. The accentuated speed of the pan makes people think I was zooming when in fact I wasn't; the movement is incredibly dynamic. We found that flaring is very subdued, like with the Master Primes, although if you actively try to flare the lens then the flares are organic and pleasing.

### What do your rental clients make of the UWZ?

I've shown it to a few DPs and at first they comment on the size, but they quickly realize it's not limiting and the lens is great fun to use. I think it's perfect when combined with a small camera because the overall length of the package is really not that long. We are in the process of ordering two

ALEXA Minis and they will work extremely well with this lens.

The dry hire assignments it has gone out on are those that would normally have used a wide-angle lens, like a 10 mm or 14 mm, but they're not certain of the focal length they need. Having the zoom gives them the flexibility to make compositional adjustments once they're in the situation, without having to change the lens on the camera, so it's a fantastic lens for vehicle shots and car work.



Watch the UWZ aerial footage:  
[www.arri.com/goto/0415/uwz](http://www.arri.com/goto/0415/uwz)



# ELECTRONIC CONTROL SYSTEM

ARRI's system for wireless control of any camera and any lens extends to the new ALEXA Mini



ARRI's Electronic Control System is a sophisticated toolset for precise wireless remote control of any camera and any lens; it also provides valuable metadata about exactly what the lens is doing at any given moment. All tools within the modular, future-proof system can be freely combined to provide powerful, scalable solutions for any application. Ergonomic, feature-rich hand units ease the work of the focus puller, while compact, intelligent motor controllers optimize camera setups.

Several new tools are being introduced for 2015. A result of both ARRI's own technological developments and of its ongoing collaboration with cmotion, they further reinforce the Electronic Control System as the most complete professional system on the market, ready for any challenge on set.



## ACTIVE MOTOR CONTROLLER AMC-1

The new ARRI Active Motor Controller AMC-1 is a compact motor controller with an LBUS interface that can connect with up to three daisy-chained cforce motors. It is designed for weight and size-critical setups such as Steadicam or camera drones.



## CFORCE MINI LENS MOTOR

cmotion and ARRI have partnered up to develop the new intelligent cforce mini motor. This small and lightweight motor adjusts lens settings on weight-optimized camera configurations with remarkable speed and torque. Equipped with twin LBUS connectors and using daisy chain technology, up to three cforce mini motors can be linked in a row.

The cforce mini connects directly to the new ALEXA Mini camera, providing a super-lightweight, integrated solution, as well as to ARRI's new AMC-1 motor controller for camera-independent setups. It is also fully compatible with all cmotion LBUS-compatible devices such as the compact LCS and the evolution system, the new pan-bar zoom, the knob solo and ENG adapters.



## ACCESSORIES FOR CFORCE MINI

ARRI and cmotion offer a wide range of cables for devices that use the LBUS communication protocol, such as the cforce mini and other cforce lens motors, the ALEXA Mini and the AMC-1. These LBUS-only cables allow LBUS-compatible devices to be connected to each other, providing control signals and power. There are eight LBUS to LBUS cables, ranging in length from 0.2 m/8" to 15 m/49'. In addition, there are LBUS to D-Tap, XLR and RS cables that can be used to power an LBUS system from an external power source, for example when using a cforce motor with accessories like cmotion's new pan-bar zoom.

A number of lenses, including Panavision and B4 mount ENG-type lenses, do not have the same tooth dimensions on their focus, iris and zoom rings as ARRI cine lenses. Tooth dimensions are defined by different manufacturers according to either the DIN Module System (e.g. module 0.4) or the diametral pitch (e.g. 64 pitch). ARRI will offer a complete set of optional gear modules for the cforce mini motor, making it fully compatible with all common, industry-standard lenses.



## WCU-4 PLATE

The ARRI Wireless Compact Unit WCU-4 features M4 mounting points on its top and bottom, and the new WCU-4 Plate can attach to either, providing various additional 1/4-20" and 3/8-16" mounting points itself. When mounted on the bottom, the WCU-4 Plate serves as a table stand or can be used to accept a 3/8-16" spigot for mounting on a C-stand. When mounted on top, it can be used to adapt the WCU-4 to an on-board monitoring system. Weighing only 67 g, the WCU-4 Plate is made of durable, aircraft-grade aluminum.





# ALEXA SXT

## THE BEST JUST GOT BETTER

*New ALEXA SXT models feature ProRes 4K recording and enhanced image quality*

ARRI's new ALEXA SXT (Super Xtended Technology) cameras represent the next exciting step in the continuing evolution of the ALEXA family. Retaining the rock-solid foundation on which ALEXA is built, ALEXA SXT cameras additionally offer ProRes 4K recording, improved image quality, powerful color management and three fully independent HD-SDI outputs.

The first ALEXA SXT cameras are planned for release around mid-2015; the full range will comprise ALEXA SXT EV, SXT Plus and SXT Studio models, replacing current ALEXA XT cameras (though the ALEXA Classic EV model will remain in the line-up). ALEXA XT cameras (except ALEXA XT M) shipped between 1st Jan. 2015 and the first shipment of SXT cameras will be eligible for a full SXT upgrade, free of charge.

Ever since its launch, the ALEXA system's fundamental advantage has been its unique combination of the highest overall image quality with the most efficient workflows on set and in post. Based on extensive market feedback, the ALEXA SXT line of cameras further improves upon those qualities, raising the widely-accepted gold standard set by ALEXA still higher.

### Easy ProRes 4K recording

With in-camera recording formats of ProRes 4K UHD (3840 x 2160 pixels) and ProRes 4K Cine (4096 x 2637 pixels), ALEXA SXT cameras are the ideal choice for productions that need 4K UHD TV or 4K DCI cinema deliverables, so filmmakers can continue using the ARRI ALEXA platform they know and love.

### Improved image quality

ALEXA SXT cameras keep the acclaimed 3.4K ALEV III sensor of previous ALEXAs and add the state-of-the-art electronics of ARRI's groundbreaking ALEXA 65 camera. These high-performance electronics combine the latest generation of FPGA processors with a lightning-fast internal backplane and form the basis of a completely overhauled image processing chain, advanced pixel correction and optional noise reduction. This results in a further improvement in overall image quality. Like their XT predecessors, ALEXA SXT cameras retain the unique and popular Open Gate, 4:3 and 16:9 sensor modes, which can be recorded in ARRIRAW or ProRes.



ALEXA SXT EV



ALEXA SXT Plus



ALEXA SXT Studio

ALEXA SXT range

### New looks and smoother workflow

The creation of new, powerful and unique looks has been made possible by utilizing the advanced color management engine originally developed for the ARRI AMIRA camera. Taking advantage of the extremely wide native color gamut of the ALEXA sensor, this new engine allows unprecedented control, which in the end means greater creative freedom for the filmmaker. A new type of look file, the ALF-2 (ARRI Look File 2), contains an ASC CDL (Color Decision List) as well as a 3D LUT (Look-Up Table). The new color management engine can easily match the look of current ALEXA cameras, but also provides the basis for radically different looks. In addition, previewing of looks on set is improved, including the option to use the wide color gamut of Rec 2020 gamma, while dailies creation is made more efficient and final grading made faster. ALF-2 files and the tools that create them are compatible between ALEXA SXT, ALEXA Mini and AMIRA.

### Super flexible on-set monitoring

To further streamline on-set workflows and deliver what has been asked for by crews all over the globe, ALEXA SXT cameras include three fully independent HD-SDI outputs. This allows, for instance, a Log C image to be used to show the director a pristine image with live grading, a clean Rec 709 image to be fed to video village, and a Rec 709 image with status information overlays to be displayed on the camera's on-board monitor.

### Future-proof technology

ALEXA SXT cameras are designed to keep up with the growing needs of changing production methods: their powerful electronics offer significant potential for future hardware and software upgrades, illustrating ARRI's continuing commitment to the future-proof technology concept behind the ALEXA system.

### SXR Module upgrade for ALEXA XT cameras

Concurrent with the ALEXA SXT release ARRI will offer an SXR (Super Xtended Recording) Module upgrade to owners of existing ALEXA XT, XT Plus and XT Studio cameras. The SXR Module upgrade delivers all the features of the SXT cameras, although it might not offer all the future upgrade potential.





ALEXA



ALEXA XT



ALEXA XT PLUS



ALEXA XT M



ALEXA XT STUDIO

# NEW FEATURES FOR ALL CURRENT ALEXA MODELS

Software update SUP 11.0 introduces new features including ProRes 3.2K and enhanced debayering

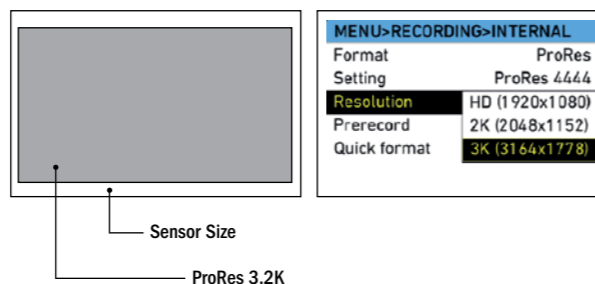
Software Update Packet (SUP) 11.0 for ALEXA cameras is now available for download from the ARRI website, free of charge. ALEXA's eleventh major update includes many new features, among them an ALEXA ProRes 3.2K recording format for productions requiring 4K UHD deliverables, and ADA-5 – an enhanced debayering algorithm that further improves ALEXA's image quality.

## SUP 11.0 FEATURES FOR ALEXA XT AND XR CAMERAS

### ProRes 3.2K recording

Available to ALEXA XT cameras and ALEXA Classic cameras with the XR Module upgrade, ALEXA ProRes 3.2K is a new recording resolution that uses 3.2K 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.

At data rates far below uncompressed ARRIRAW, ALEXA ProRes 3.2K provides the benefits of the well-established and efficient ProRes workflow. A straightforward up-sample from ALEXA ProRes 3.2K using standard post tools results in a 4K UHD deliverable of unsurpassed overall image quality.



### ARRIRAW checksum

ALEXA XT/XR cameras will now record a checksum with each ARRIRAW frame that can be used to verify data integrity throughout the subsequent workflow. This makes working with ARRIRAW even safer and copying even faster, though it means that the latest version of Codex software must be used to read SUP 11.0 ARRIRAW files.

## SUP 11.0 FEATURES FOR ALEXA CLASSIC, XT AND XR CAMERAS

### ARRI Debayer Algorithm ADA-5

The ARRI Debayer Algorithm ADA-5 represents an improvement in image quality for all ALEXA models, delivering clearer and sharper images. This is especially visible in small, high-contrast details (such as thin branches against a blue sky), which will exhibit smoother, cleaner edges.

ADA-5 also further reduces noise in the red and blue channels, making bluescreen compositing in VFX even easier. ADA-5 has been available through the ARRIRAW Converter since ARC 3.1 and as part of the ARRIRAW Software Developer's Kit (SDK); it has also been used in the AMIRA camera since AMIRA SUP 1.1 and will be used in the ALEXA Mini.

### Expanded media support and ECS compatibility



LDE-1

Another feature of SUP 11.0 is expanded media support, with all generations of SxS PRO+ cards, and ALEXA XT/XR cameras able to support SanDisk CFast 2.0 128 GB cards. ALEXA compatibility with the ARRI Electronic Control System (ECS) has also been expanded, with SUP 11.0 providing support for the new Lens Data Encoder LDE-1, as well as unlocking a number of new features when using the Wireless Compact Unit WCU-4.

### Improved user buttons and web remote



1	2	3
Button 1	EVF anam. desqueeze	
Button 2	Grab still frame	
Button 3	Return in active	
Button 4	Check last clip end	
Button 5	Check last clip start	
Button 6	Circle clip	
4	5	6

The 'Check last clip' user button command has been split into two new commands: 'Check last clip end' and 'Check last clip start' for greater on-set flexibility. For situations requiring web-based remote control, Web Remote 2.0 represents a great improvement in user interface and functionality.

### Framelines and time zones saved in metadata

Up to six framelines can now be saved within the camera metadata; these can be used to speed up automated dailies processing, or displayed in post software. Time zone information can also now be saved in the metadata, as a number of post systems require this information for a smooth workflow.

MENU>SYSTEM>TIME + DATE	
Time	1:18:12
Date	2015-01-20
Set time + date >	
Time zone	UTC -12:00
DST	Standard time



# ADAPTABLE LIGHT AND SPACE

Lighting designer Alessandro Chiodo uses ARRI L5 LED Fresnel lights to equip a chameleon-like gallery space in Moscow



ARRI L5-C LED Fresnel

When architects from the Milan-based firm Metrogramma were commissioned by Iris Group to design a multi-purpose gallery for contemporary design in Moscow called SuperSurfaceSpace, they brought in lighting designer Alessandro Chiodo to propose a flexible lighting scheme. On his recommendation 18 black-painted L5-C fixtures from ARRI's L-Series of tuneable LED Fresnels were supplied by ARRI Italia and installed in the 25 m by 8 m space, allowing it to be easily and endlessly reconfigured for different exhibitions.

#### What was your brief from Metrogramma?

Andrea Boschetti from Metrogramma called me and asked if it was possible to have changeable light that would allow anything to be done within the space. They had designed a table in three parts that can be moved up and down from the ceiling to the floor, and the lighting design had to follow that same adaptable concept. My background is in movies, where lights and sets are constantly changing, and Andrea envisioned a crossover between an architectural and a cinematic approach. I told him that to do it we would have to create something a bit like a movie studio.

#### How do you create a movie studio in a 25 m by 8 m space?

The structure of the space helped us because there was plenty of head height and the ceiling had exposed structural beams that could function like a lighting grid, so it was easy to fix lights up there. The challenge was to create a system for moving and controlling them that was simple enough for anyone to manage, in order to prevent them from having to bring in a professional electrician every time they change the installation.

#### Why was LED lighting the right solution?

For one thing the lights would be on all day, so if it wasn't LED the power consumption would be extremely heavy. Keeping the temperature down to a comfortable level was also important and LED was much better for that. One of the main reasons I chose ARRI fixtures was for the reliability and easy maintenance. Being able to tell the clients that they were not going to have any problems for at least 10 years helped me sell the concept.

#### And why did you choose the L5-C Fresnel?

When ARRI Italia told me that the L5 was coming out, which was a smaller version



of their LED Fresnel but with the same tuneability, I knew it would be perfect. The space is not very big, so having a compact Fresnel light with barndoors allows you to control the light by cutting, focusing or diffusing it, and you can also hide the source a little bit. That versatility means you can give the curator of each different installation exactly what they want.

A key point when I presented the project was that there are three levels of control: basic, standard and advanced. One of the reasons I chose the ARRI's was because each lamphead has its own controls, so even if the DMX fails you can still program them manually – that's the first level. The second level is touch timer control of different presets and the third level, which is designed for me or for someone else who can handle the programming, is Wi-Fi control.

#### Were the clients pleased with the result?

They were amazed. For the opening party I designed three different preset lighting setups, which surprised the clients because they didn't realize we could make those changes while people were actually in the space. All of the L5s were perfectly matched in terms of color and output, so it looked fantastic. An "Oh, wow!" response was my goal and that's what we got; it was great fun to see everybody's reaction as the changes happened and it really conveyed the concept of the gallery.

Photos: Ricardo Oliveira Alves



# ALEXA MINI

ALEXA image quality and diverse shooting options in a small, lightweight package



The new ALEXA Mini is a versatile additional tool in the ARRI ALEXA camera range that combines a compact and lightweight form factor with the same unparalleled image quality that has made the ALEXA system a gold standard for the industry. Designed for specialized shot-making, it perfectly complements a full ALEXA shooting kit and allows crews to keep everything within a single system that is trusted all over the world.



## Strength and agility

To maintain ARRI's famously rugged build quality in a small and lightweight camera, a number of unique design solutions have been incorporated. These include highly integrated and sealed electronics, a lightweight carbon housing and a solid titanium PL mount that connects directly with the new internal sensor mount to ensure a super-stable flange focal distance. Nimble in use and hardy on set, the ALEXA Mini is a go-anywhere tool, easy to transport in backpacks or as carry-on luggage.

## Versatile shooting options

The ALEXA Mini can be operated in a number of ways: by wireless remote control, as a normal camera with the ARRI MVF-1 multi viewfinder attached, or with an on-board monitor and controlled via the user button interface on the camera body. Light enough to be held at arm's length in a hand rig, its compact size and quiet operation also make it ideal for tight shooting conditions. The symmetrical design permits filming in any orientation, including upside-down and in portrait mode, while multiple accessory points enable highly creative mounting solutions. In addition, the ALEXA Mini's interchangeable lens mount can be replaced to accommodate B4 video and EF mount stills lenses.

## Simple workflows

Equipped with a 4:3 sensor, automatic de-squeeze mode for anamorphic productions and frame rates of 0.75-200 fps, the ALEXA Mini records ProRes or uncompressed ARRIRAW either in-camera to CFast 2.0 cards or to a specially-designed external Codex recorder that can record image streams from up to four ALEXA Minis simultaneously – a compelling option for multi-camera setups such as 360° plate shots. Images from the ALEXA Mini will perfectly match those from all other ALEXA cameras, making the final grade easier and quicker.



ALEXA Minis connected to the Codex Multi-Camera Recorder

## Efficient, integrated functions

Integrated functionality is at the heart of the ALEXA Mini's efficient and self-contained design. A built-in lens motor controller allows new active lens motors to be connected directly to the titanium PL mount, while ARRI Lens Data System (LDS) technology provides frame-accurate metadata that can save time and money both on set and in post. Wi-Fi connectivity means that iOS or Android devices can be used to remotely control camera functions such as the motorized internal ND filters.

## Perfect for gimbals and multicopters

The body design is optimized for use with brushless gimbals, aerial multicopters and other specialized rigs. It is compact enough in the lens direction to allow the use of standard PL mount lenses even on lightweight and space-constrained rigs, such as gyro-stabilized aerial systems. The camera's superb low-light performance makes it perfect for underwater work; dedicated underwater housings are currently being developed by leading manufacturers.



Exchangeable lens mounts



ALEXA Mini with active lens control in a Freefly MōVI rig

## Easy 4K UHD recording

Like the ARRI AMIRA and ALEXA SXT, the ALEXA Mini can record 4K UHD ProRes images, facilitating real-time 4K UHD output for easy high-resolution deliverables. More importantly, the Mini and all other ARRI cameras with the ALEV III sensor offer unrivalled overall image quality by focusing not just on spatial resolution, but also on other parameters such as colorimetry, skin tones and High Dynamic Range (HDR). This is equally true whether the chosen output is HD, 2K, 4K UHD or one of the native resolution outputs like uncompressed ARRIRAW 2.8K or ProRes 3.2K, ensuring that images captured with the ALEXA Mini are future-proof, whatever new industry standards emerge.

## MAIN FEATURES

- Same sensor and image quality as other ALEXA models
- Super-lightweight carbon and titanium construction
- Exchangeable PL, B4 and EF lens mounts
- Frame rates of 0.75-200 fps
- In-camera ProRes and ARRIRAW recording to CFast 2.0 cards
- Versatile configuration and control options
- Integrated lens motor control and ND filters
- Future-proof 4K UHD and High Dynamic Range output
- Wi-Fi camera control from iOS or Android devices

Full tech specs and FAQ on the ALEXA Mini microsite: [www.ari.com/alexamini](http://www.ari.com/alexamini)





# A FLYING START

On its maiden test shoot, the ALEXA Mini captures a hot air balloon flight from gimbal and multi-rotor rigs



Casey Warren and Danielle Krieger of the Seattle-based content provider MINDCASTLE are the creative team behind *The Balloonist*, a short film designed to test the new ALEXA Mini on Freefly Systems' popular MōVI gimbal rig and CineStar aerial multi-rotor. Both companies provided input during the camera's development and the MINDCASTLE duo were able to draw on their experiences combining their ALEXA M camera with MōVI rigs in planning a shoot – at short notice – that would demonstrate the ALEXA Mini's remarkable production benefits.

**Why is ALEXA the right system for the work you do?**

**Casey Warren:** We used to work with DSLRs but we wanted to move up a level and were looking around for our next camera. Our main criteria were dynamic range and filmic skin tones, so we specifically examined how all the available cameras rendered skin tones and ALEXA was the best. We went with the ALEXA M because we could make it work on our smaller Steadicam and dollies.

**Danielle Krieger:** We were excited when we heard that a mini ALEXA was being developed because it would mean we could work untethered and do new things without giving up the beautiful imagery we're used to from the ALEXA M.

**What input did you and Freefly give ARRI about the ALEXA Mini?**

**DK:** Most people will probably be renting the Mini as a second or third camera, but

from our perspective as owner-operators it was potentially our primary camera, so we wanted it to have an audio input and to be as small as possible, while Freefly wanted it to be optimized for gimbals. I think the fact that ARRI listened to a lot of people's feedback has led to the Mini fulfilling various different requirements.



**How did *The Balloonist* come about?**

**CW:** A prototype was being brought to the U.S. for testing on the MōVI and CineStar so we suggested that instead of a purely technical test we should do a whole shoot, although there were only a few days to put it together. Freefly is located in a valley in Washington and a lot of balloon flights happen there, which immediately made sense for our needs. I was telling people that we wanted to shoot the biggest color chart in the world and we ended up doing exactly that because our balloon had these rainbow colors on it.

**What were your first impressions of the camera?**

**DK:** We were at Freefly's headquarters when it arrived and I was just thrilled to see something so small. For the last three years we've been hoping for something the size of the ALEXA M head and the Mini is even smaller than that, so it was very exciting for us.

**CW:** When we picked it up the lightness really surprised us. On the second day of the shoot I ran around handholding a minimal setup of just the camera, a lens, the MVF-1 viewfinder and a battery. It was amazing and I realized you can throw this camera in a backpack and go literally anywhere. I think it's going to be really interesting to see where people take the Mini and what they do with it.

**How easy was it to balance the ALEXA Mini in the rigs?**

**CW:** Having all the weight towards the front of the camera body has several advantages. One is that when you put a lens on the camera, you can balance it very easily and accurately on a gimbal or a multi-rotor. Another is that once you're shooting, the motors on the gimbal have an easier time maintaining that balance because the center of gravity is very close to the center of mass.

**DK:** We did this whole shoot in only about four hours and we were constantly switching between different rigs and lenses, so being able to do that without any downtime was a big help.



Watch *The Balloonist*: [www.arri.com/goto/0415/balloonist](http://www.arri.com/goto/0415/balloonist)





# INSURGENT

Florian Ballhaus, ASC chooses Master Anamorphics and ALEXA XT for Robert Schwentke's box office hit



The second installment of author Veronica Roth's popular *Divergent* trilogy, *Insurgent* follows the travails of Tris, Four, and other characters struggling for identity and power in a dystopian Chicago. *Insurgent* is also the fifth collaboration between director Robert Schwentke and cinematographer Florian Ballhaus, ASC, who shot the film with ARRI ALEXA XT cameras and ARRI/ZEISS Master Anamorphic lenses provided by ARRI Rental Atlanta.

"I felt *Insurgent* could benefit from the anamorphic look in every possible way."

"I was a reluctant convert to the new digital world," admits Ballhaus. "I experimented with several digital cameras but nothing ever felt to me that it was as good as film. In 2010, when the ALEXA came out, I was won over by it and haven't turned back. It's the most intuitive system and the imagery feels so natural that I haven't felt any need to change."

Not even the advent of 4K cameras has swayed him. "I never felt that the resolution of the camera compromised the image in any way," he says. "Most movies are finished in 2K and therefore I don't see a great benefit to shooting in 4K. I'm more interested in image quality than pixel count."

Ballhaus notes that Schwentke is drawn to large-scale productions because they give him the opportunity to paint on a big canvas: "*Insurgent* is an interesting project because it allowed us to experiment visually, beyond the confines of an action-adventure movie,"

he says. "My desire to make the world seem bigger, more engaging and vibrant led me early on to explore anamorphic lenses."

Digital cinematography, explains Ballhaus, has pushed him to be "more experimental with my choice of lens manufacturers." With lenses playing a greater role in defining the look of digital films, he observes that, "Now, I scrutinize my lens choices very thoroughly for every movie I shoot. For each movie, there's a right set of lenses. I felt *Insurgent* could benefit from the anamorphic look in every possible way."

Ballhaus used his lens choices to differentiate between the everyday look of dystopian Chicago and the vivid dreamscapes of 'sims,' or simulations, in the film's

plotline – using anamorphics for the former and spherical lenses for the latter. "I find that the difference subtly indicates that this is a simulated world," says the cinematographer. The choice of spherical lenses for the simulation sequences was also practical. "The sims were incredibly VFX heavy," he says. "When you shoot spherically with a 2.40 extraction, you have more re-framing options in postproduction, and that's where the spherical format came in quite handy."

Looking for anamorphic lenses, Ballhaus revisited some he had used before and liked. Then he tested the Master Anamorphics. "The interesting thing is that they give you the best of both worlds: the perfect image of the spherical world, but with the depth of an anamorphic image," he says. "It was an easy sell to Robert who is concerned about symmetry and resolution. The slight imperfections and beautiful bokeh falloff on the anamorphic lenses made the images more interesting dramatically, without dealing with extreme focus fall-off on the edges."

Although this was Schwentke's first anamorphic movie, he readily embraced the format and the Master Anamorphic lenses. "He loves wide-angle lenses and the ability to create beautiful, rich wide shots with great detail," says Ballhaus. "The anamorphics create a richer image that gives you a three-dimensional sense of the shot. The curvature produces a very natural sense of depth."



Photos: Andrew Cooper

*Insurgent* was converted to 3D, a decision made part-way through production, and the use of anamorphic lenses was serendipitous. "I think anamorphic is a more aesthetically pleasing image," says Ballhaus. "When you have action, everything is more vibrant and immediate. The focus shifts between foreground and background are more dramatic and pronounced, and that helps when you're trying to create more energetic images."

Did the Master Anamorphics fulfill their promise? "Yes, absolutely," says Ballhaus. "We were thrilled with the result and once

we started watching dailies, Robert utterly embraced the new look. We have already started prep on the next one, our sixth collaboration, and of course we will use the Master Anamorphics again."

Take a look behind the scenes: [www.arri.com/goto/0415/insurgent](http://www.arri.com/goto/0415/insurgent)

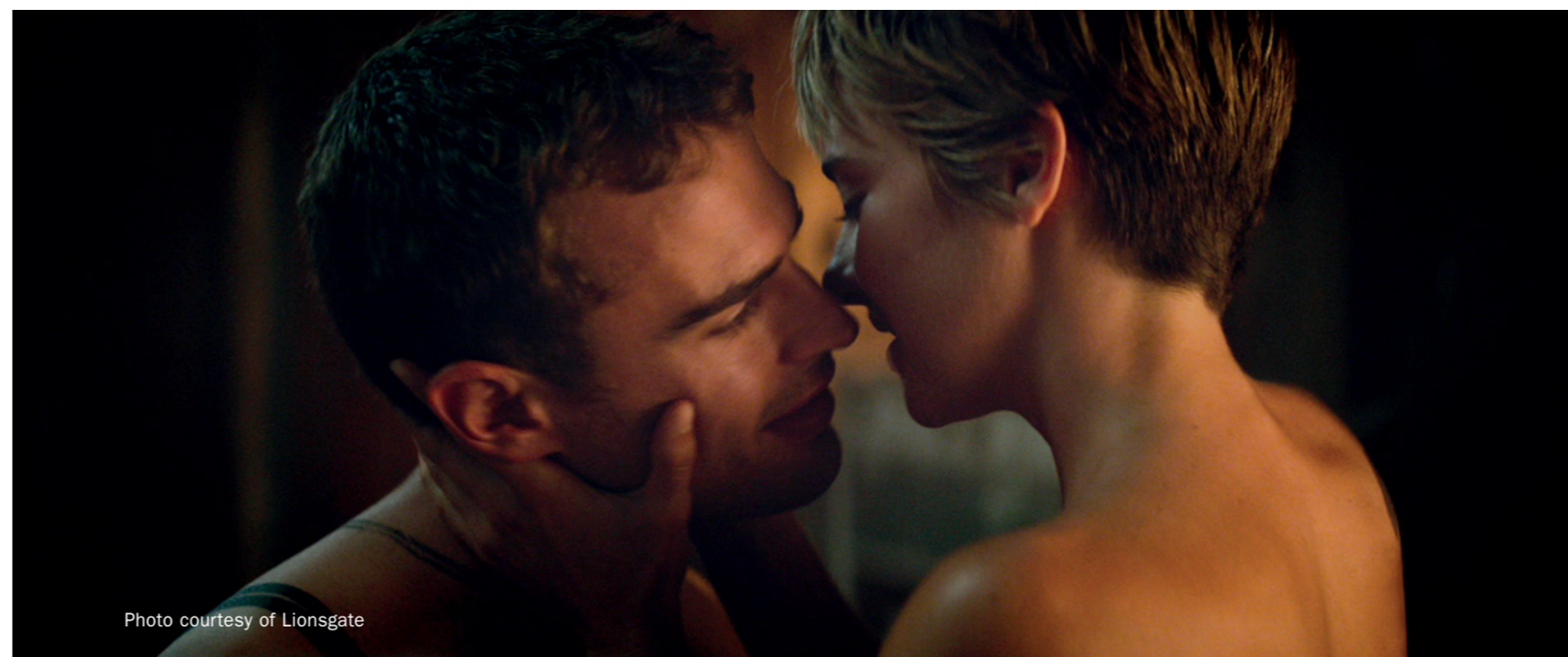


Photo courtesy of Lionsgate



# A FLARE FOR ANAMORPHIC

New flare sets for the Master Anamorphic lenses expand creative options for cinematographers



The new ARRI Master Anamorphic Flare Sets are highly versatile and economical accessories for the ARRI/ZEISS Master Anamorphic lens series. Each of the seven Master Anamorphic focal lengths has its own specific flare set, comprising easily replaceable front and rear glass elements that can be used individually or in combination to provide the lens with three additional looks for enriched on-set creativity.

Since their introduction in 2013, the Master Anamorphic lenses have established themselves as the most advanced anamorphic optics ever designed for the film and

Images captured with the MA Flare Sets by Tom Fährmann, BVK



television industry. Offering a perfect combination of compact form factor, minimal weight, distortion-free optical performance and an unparalleled high speed of T1.9 across the entire focal length range, they are as fast and easy to use as spherical cine lenses and represent a major step forward in anamorphic cinematography.

For the majority of shooting situations, cinematographers and also VFX supervisors appreciate how effectively the Master Anamorphic optical design and coating technology suppress flares and reflections. Under certain circumstances, however, flares might be exactly what a cinematographer wants in order to heighten the emotional impact of a shot, sequence or project by introducing a level of technical 'imperfection.' It is for these situations that the Master Anamorphic Flare Sets have been designed.

The front and rear glass elements that come with each flare set have a special lens coating that encourages flaring, ghosting and veiling glare. These image effects create a visual style that is consistent across all of the flare sets and can be controlled or tweaked via the iris setting, as well as the positioning of lighting fixtures. The front element can be used on its own, as can the rear, or they can be used in combination; each permutation provides a distinct look without sacrificing the resolution, lack of distortion or corner-to-corner optical performance for which the Master Anamorphics are famous.

**“The option to have a clean anamorphic look as well as a more lively and emotional anamorphic look in a single lens is the perfect model for the future.”**

Cinematographer Tom Fährmann, BVK

By using the new ARRI Master Anamorphic Toolkit (purchased separately but compatible with all seven flare sets), the front and rear glass elements can be exchanged with the regular Master Anamorphic elements in a matter of minutes, since each flare element is pre-aligned in a metal frame. Whether for a feature film, TV show, music video or commercial, the MA Flare Sets give rental facilities a quick and cost-effective way of offering anamorphic productions greater on-set creativity. A set of Master Anamorphics effectively becomes four different sets, each suitable for different flaring requirements while

maintaining the huge advantage of being freer from distortions such as curved horizons, focus breathing and 'mumps' and 'pincushion' effects than any other anamorphic lenses on the market.

Cinematographer Tom Fährmann, BVK recently took the MA Flare Sets onto the streets of Munich for a test shoot and commented, “To add real atmosphere and warmth to the image on set rather than digitally in post, we need more flexible lenses that can combine different elements for a wide range of looks, and that’s exactly what we get with these flare sets. The option to have a clean anamorphic look as well as a more lively and emotional anamorphic look in a single lens is the perfect model for the future; it is precisely what we have been asking for and again shows that ARRI has its ears wide open to the demands of cinematographers.”

Watch the MA Flare Sets demo reel:  
[www.arri.com/goto/0415/flaresets](http://www.arri.com/goto/0415/flaresets)



# L10

## THREE MAKES A FAMILY

*The new L10 means that the ARRI L-Series is now a complete family of LED Fresnels*



In February this year ARRI announced the L10, the newest addition to its L-Series of LED Fresnels, which also includes the portable L5 and mid-range L7. The introduction of the L10 makes the L-Series a family, fulfilling ARRI's mission to provide a full line of high-performance LED Fresnels to the film, broadcast, theater and live entertainment markets.

The L10 is the brightest and largest L-Series lamphead to date. Its substantial 10" Fresnel lens and powerful output allow for more distant fixture placement and the wrapping of light around objects in a natural and pleasing way. More than twice as bright as the L7, the L10 is also one of the brightest LED Fresnels on the market. At the BVE show in the UK, where the L10 made its well-received debut, visitors to the ARRI booth got an impression of the fixture's impressive throw when it fully illuminated the show floor's high ceiling during a demonstration.

Tuneability is the cornerstone of all ARRI LED fixtures and much like the L7 and L5, its smaller counterparts, the L10 is fully color

**"The L10 is a welcome addition to ARRI's class-leading series of versatile LED fixtures."**

Cinematographer Gavin Finney, BSC (right)



tuneable. With the ability to adjust the color temperature from 2,800 K – 10,000 K, as well as the green/magenta point, users have complete control over the color output of the fixture.

As with the other L-Series lights, the L10 comes in three versions: the L10-C (Color), L10-TT (Tungsten Tuneable) and L10-DT (Daylight Tuneable). While the L10-C is the most versatile with regard to color tuneability, producing vivid colors with saturation control, the L10-TT and L10-DT are brighter than

the L10-C and still offer a select CCT tuning range.

In a robust housing that combines aluminum with high-strength fiberglass-reinforced thermoplastics, the L10 is designed to withstand the stresses of diverse professional environments, from motion picture sets to television studios and everything in-between. This robust construction allows the L10 to live up to the benchmark of rugged durability set by other ARRI lighting fixtures.

Consuming only 400 watts, the L10 is incredibly energy efficient. The L10-TT and DT versions have a brightness level close to that of a 2 kW tungsten Fresnel. This means that with the same amount of power as consumed by a single conventional 2 kW tungsten light, you can run five L10s and achieve almost five times the light output.

The L-Series family signifies a paradigm shift in the way television studios and motion picture sets can be lit. The flexibility and tuneability of the L-Series allows for rapid and easy changes of color, which in turn makes more creative options available in a shorter period of time. The color quality and rendition outperform most LED products on the market.

With the L10 due to start shipping in May, the ARRI L-Series family represents a full line-up of powerful and versatile LED fixtures. Whether for a small television studio or a major motion picture, the L-Series can provide the perfect Fresnel light source.

### L10 MAIN FEATURES

- More than twice as bright as the L7
- Similar light output to a 2 kW tungsten Fresnel
- Consumes only 400 watts
- Full tuneability from 2,800 K – 10,000 K
- Green/magenta point and vivid color selection
- Robust, reinforced lamphead housing

Learn more about the L10:  
[www.arri.com/goto/0415/l10](http://www.arri.com/goto/0415/l10)



# TRAVELS WITH MY AMIRA

Duane McClunie discusses working with the ARRI AMIRA in a range of different shooting environments



Photo: Andrew Shaylor



Ever since UK-based DP Duane McClunie invested in two AMIRAs through his rental company Catalyst Cameras, clients have been so impressed by their performance that the cameras have become the first-choice option for many productions. Two of Duane's recent shoots that illustrated AMIRA's rugged

versatility were a Land Rover corporate film directed by Adam Kaleta for FP Creative and an ITV documentary following presenter Griff Rhys Jones through Namibia, directed by Michael Massey for IWC Media.

#### What did the Land Rover shoot involve?

It was a promotional film for Land Rover titled *Celebrate Defender*, incorporating interviews with the sons of the Defender's original designer, Maurice Wilks, and a 1 km-long piece of beach art filmed at Red Wharf Bay in Wales. We had the AMIRAs on a crane rigged to a 4x4 vehicle and on sliders, which looked amazing, with the second unit filming from inside the Defenders, as well as some observational documentary-style filming on

the beach. It was a real race against the clock to get the drawing finished on the beach before the tide came in, but it all came together really well.

#### How about the shoot in Namibia?

That was part of a series with Griff Rhys Jones called *Slow Train Through Africa*. Previous episodes had been shot with a different camera, but we suggested the AMIRA and production went with it. We mainly used PL mount zoom and prime lenses, and shot as wide open as possible, usually at T2.8, to achieve a nice cinematic look. Griff likes to be very hands-on and involved, from oyster farming to driving large diggers and getting as close to the rhinos as possible, so



it was a really good shoot to put the AMIRA through its paces. The conditions were sometimes horrific; we had horizontal sand blowing into us to the point where it was hard to just stay standing up, and temperatures up to 50°C, but the AMIRAs survived.

#### What are the key features you like about AMIRA?

I love how well the sensor handles contrasty situations; it's great to have so much latitude. Also, there has not been a really solid, easy-to-use, shoulder-mounted camera for a few years and the AMIRA not only fills that gap, it actually raises the bar. The ergonomics are great, the menus are



simple and all the buttons are in sensible places; you can throw it on your shoulder and start filming straight away. It takes no time at all to switch the frame rate, EI setting or internal NDs, so you can easily work fast.

#### Do you tend to operate the camera on your own?

Yes, for these projects it is mainly single operation. In Namibia I pulled my own focus because things were happening so fast that it was all I could do to keep up, and having someone like Griff Rhys Jones just magnifies the speed. I use the non-color peaking function at quite a high setting to help me

keep focus and at times the flip-out monitor is an absolute lifesaver for checking the frame when the camera is away from my eye.

#### Would you say that AMIRA suits a range of different production types?

The camera ticks so many boxes and is perfect for a huge range of different productions, spanning everything from run-and-gun to docs and sport to drama, and I am currently shooting a movie with two AMIRAs. If you've got a filming situation that's not going to be amazing and you are trying to do your best with it, then you want a camera that will enable you to take it to another level by delivering great pictures with great latitude. And then on higher-end shoots you can go for a slicker look and easily meet expectations with the ALEXA sensor; plus you've got high speed and soon there will be 4K UHD recording. It's incredible how much clients, as well as producers and directors, love the camera. The more I work with it the more it blows me away – it's a joy to use.





## MAIN FEATURES

- Very low distortion, even at 19 mm
- Exceptional corner-to-corner image performance
- Virtually no image breathing
- Uniform field illumination
- Extreme close focus up to the front lens element
- Fixed entrance pupil position over the entire zoom range
- LDS lens metadata for on-set tasks and VFX in post
- Complements the Master Anamorphic lenses
- Unique anamorphic flares



# A NEW PERSPECTIVE FOR ANAMORPHIC

*ARRI's new Anamorphic Ultra Wide Zoom is the widest professional anamorphic lens in the world*



The new ARRI Anamorphic Ultra Wide Zoom AUWZ 19-36/T4.2 is a unique lens that perfectly complements the ARRI/ZEISS Master Anamorphic lenses by extending the range to cover extreme wide-angle focal lengths between 19 mm and 36 mm, without any sacrifice in image quality.

Possibilities for wide-angle compositions when shooting anamorphic have been strictly limited in the past, due to a lack of high-quality lenses. Compromises such as heavy distortion, pronounced breathing and poor resolution and contrast have always been major problems with existing lenses on the market. Now, for the first time, anamorphic productions can incorporate visually stunning wide-angle perspectives into their storytelling.

The telecentric optical design of the AUWZ means that it has highly uniform field illumination, from the center to the very corners of the image. With the anamorphic elements positioned at the rear of the lens, focus breathing is virtually non-existent, distortion is kept to an absolute minimum and straight lines stay straight, even at close focus. The patented, cutting-edge lens technologies built into the AUWZ render an inverted image at the sensor

plane – a side-effect of the unique design that is overcome with the simple press of a button on most high-end digital cinema cameras.

With a minimum object distance just beyond the front lens element, the AUWZ allows dramatic and highly emotive anamorphic close-ups that simply haven't been possible before. Flares, which are very well controlled by the multilayer, anti-reflective lens coating, generate a creaminess around highlights

that gives night shots an ethereal and magic quality. Built-in ARRI Lens Data System (LDS) functionality provides precise lens metadata for zoom, focus and aperture settings, simplifying complex shot-making on set and smoothing visual effects workflows in post.

ARRI is committed to making the anamorphic format a compelling and practical option for modern, fast-paced productions. The AUWZ significantly extends the

reach of ARRI's anamorphic lens system, which currently comprises seven Master Anamorphic focal lengths ranging from 35 mm to 135 mm and their corresponding Master Anamorphic Flare Sets. In addition, the 1.4x and 2x ARRI Alura LDS Extenders can lengthen the MA135 to either 190 mm or 270 mm, meaning that the system now covers focal lengths from 19 mm up to 270 mm. This unprecedented range,

combined with the uniquely anamorphic-friendly 4:3 sensor of the ALEXA camera, offers a complete toolset that expands the vocabulary of anamorphic cinematography.



Photos: Jonathan Yi

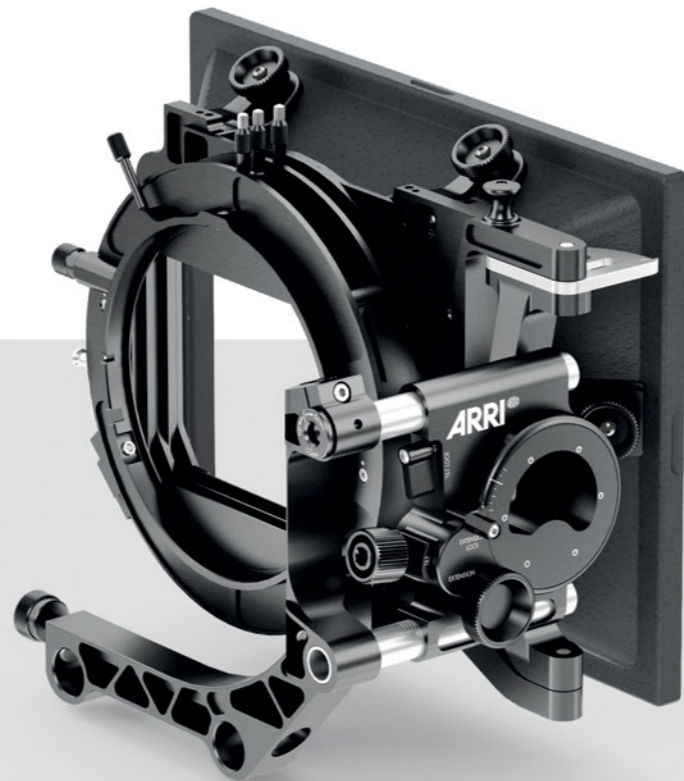
“Being primarily a documentary filmmaker whose favorite films have mostly been shot spherical, I've never really been a fan of anamorphic lenses. However, I was really impressed with the AUWZ. It is a wider lens than I ever usually shoot with and I expected it to be unflattering to faces, so I was genuinely surprised at how great people looked under this lens. Crucially, it was just as easy to use as a spherical lens and didn't slow down my shoot or change the style in which I work. The AUWZ seemed to elevate the image quality to something gorgeous without any added distortions or gimmicks; I'm excited about using it on future projects.”

Director/cinematographer Jonathan Yi



# PRO CAMERA ACCESSORIES

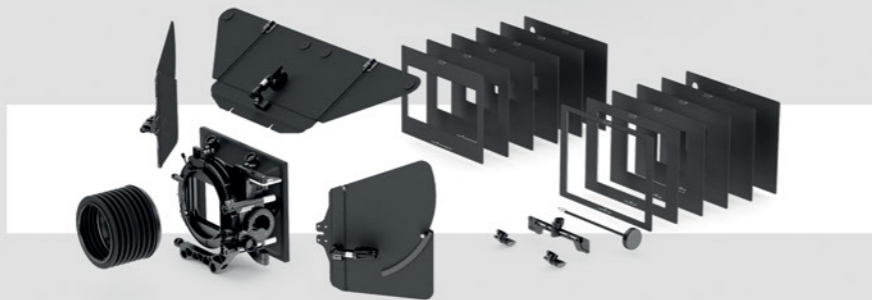
*New tools expand ARRI's accessory range and make it available to even more third-party cameras*



## STUDIO MATTE BOX SMB-2

Following the success of the Studio Matte Box SMB-1, ARRI introduces the smaller SMB-2. Optimized for 4" x 5.65" filters positioned either vertically or horizontally, the SMB-2 suits most prime lenses and smaller zooms. When recording a standard 2.8K image with ALEXA and using a three-filter stage configuration, the SMB-2 covers lenses up to the 14 mm Master Prime and 14 mm Ultra Prime, as well as all Alura zooms.

The SMB-2 Tilt features an integrated tilt module that counteracts reflections and all versions benefit from stackable filter stages, allowing quick reconfiguration. For anamorphic filming the 4:3 spherical sunshade and accessories can be replaced with a separately available anamorphic conversion set, comprising a 2:1 ratio sunshade, side flags and mattes.



"I'm using two SMB-1 tilting matte boxes on the film I am currently working on. We're using candles, lanterns and open flames in most of our interiors – always with diffusion filters – and the tilt module allows us to eliminate reflections quickly and easily. I cannot praise the

SMB-1 highly enough; it's a wonderful advancement in cinematography and I'm looking forward to buying two SMB-2s as soon as they land in the U.S."

**Cinematographer Neal Norton**

## ARRI PCA FOR SONY PXW-FS7

ARRI's Pro Camera Accessories for the Sony PXW-FS7 give it the rugged functionality required on professional film sets. With a built-in 15 mm rod console, the ARRI Plate for FS7 is compatible with standard studio bridge plates and VCT-style tripod adapters. Sturdy extended rosettes fit Sony's telescopic handgrip as well as all other rosette-based handgrips, and the ergonomic shoulder pad can remain in place for both handheld and tripod shooting.

Compatible with the Plate for FS7, the ARRI Lens Adapter Support LAS-1 equips a wide range of third-party PL and EF mount

lens adapters with pillar support. It also supports special optical adapters such as the Metabones Speed Booster.

The ARRI Top Plate for FS7 can accommodate an ALEXA or Sony top handle

and features numerous threaded interfaces, two focus hooks and an optically-centered console, while the ARRI Viewfinder Bracket for FS7 offers unrivalled adjustment range and sturdiness.



"Using the FS7 in single-operator mode requires simple yet critical adjustments to the camera's ergonomics. Improving balance and basic expandability without unnecessary complexity is where ARRI's Pro Camera Accessories for the FS7 truly shine. With the ARRI Plate

for FS7 and Top Plate for FS7, the FS7 becomes less a rig and more a natural extension of one's own body and eye."

**Anthropologist and filmmaker  
Hunter Snyder**

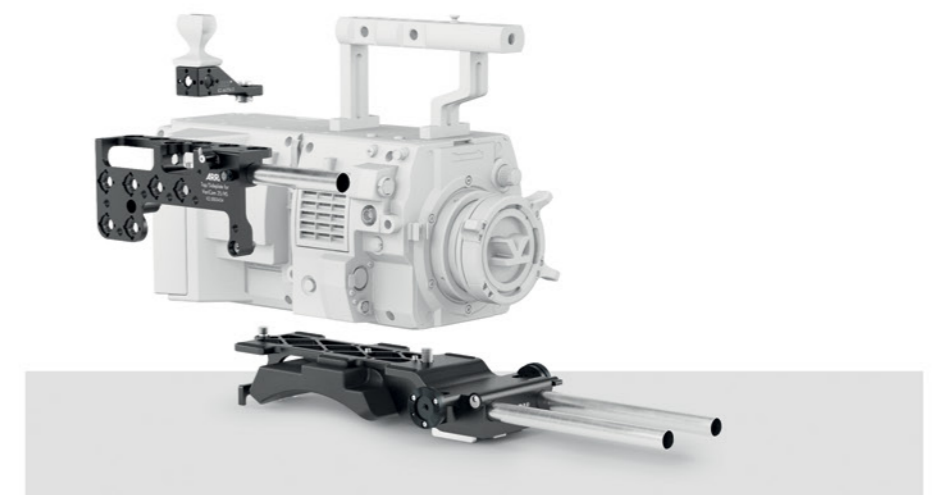
## ARRI PCA FOR VARICAM 35/HS

The Pro Camera Accessories for VariCam 35/HS equip these two Panasonic cameras for classic rental environments, offering compatibility with most industry-standard accessories and swift transitions between handheld and tripod operation. ARRI's Plate for VariCam 35/HS provides 15 mm rod support and has a wide footprint for reassuring stability on a worktop. It is compatible with industry-standard studio bridge plates and, with the supplied wedge adapter, VCT-style tripod adapters. The built-in extended rosettes fit all rosette-based handgrips and handgrip extensions, while the broad

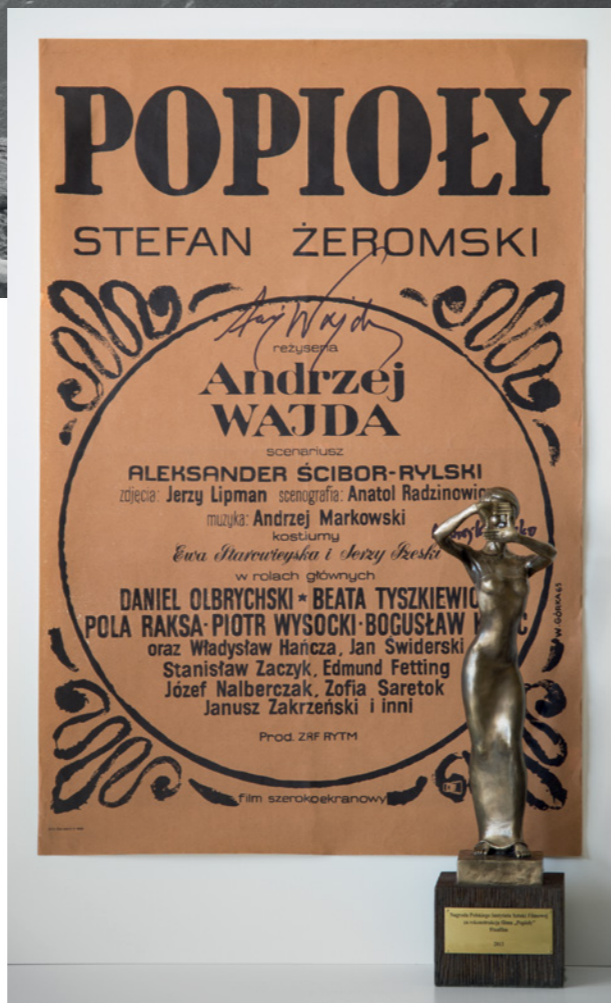
shoulder pad makes the camera comfortable to operate handheld, even in studio configuration.

Featuring multiple accessory interfaces, the ARRI Top/Side Plate for VariCam 35/HS

also includes sensor plane focus hooks and a 15 mm single rod console for streamlined low-mode setups. The VariCam control panel bracket can be fitted to the top of the plate for right-side operation.







original camera negative for this re-edit, so we had the short version on the original negative but we only had the full-length version as an interpositive print.

**WJ:** Some shots were literally cut in half and we realized that it wouldn't look good to mix the original negative and the interpositive within a single shot. Even if you try to match the grain and the grade, the resolution is very different and the audience would notice, so for shots that had been partially edited

out we used only the interpositive for the restoration. Occasionally there were just one or two missing frames at the end of a shot on the negative, which happened because of editing techniques at the time; in these situations we restored only those frames and used the negative for the rest of the shot, because the human eye doesn't register a change to the final frames of a shot in the same way as it notices changes halfway through.

**What about the actual condition of the different film materials?**

**WJ:** There was a big problem with flicker on both the negative and the interpositive. This can happen as a result of storage conditions over a 50-year period; if you have a can of film on a shelf against the wall, the



“The restoration process is about more than just cleaning up the picture and sound, it is about giving movies new energy so they can be enjoyed by today’s audiences.”

Director Andrzej Wajda

side by the wall might be a bit colder and therefore fade in a different way, which causes flickering when you run the film. It could also be that the wrong chemicals were used to develop the film in the first place, potentially meaning that the negative was not chemically stable when it went into storage.

**LC:** Another difficulty was that there were a few shots where the camera negative had clearly been lost during the original edit, so they'd had to use the daily rushes to fill in those bits. The quality was really bad because the rushes would have been hurriedly printed with a one-light setting, so a duplicate negative created from that can only be poor. To match these different elements we digitally removed the heavy dirt and black spots caused by the bad rushes printing, and we also had to manipulate the aggressive grain of the negative.

**Doesn't that mean you were making the film even cleaner that it was at the time of its original release?**

**WJ:** Yes, but does the goal of every restoration have to be to get the film as close as possible to the state in which it was premiered, or first projected? Archivists work

# RISEN FROM THE ASHES

Fixafilm uses ARRISCAN archive tools for its award-winning restoration of a classic Polish film

Founded in 2012, Warsaw-based Fixafilm is a relative newcomer to the world of film restoration, although the company has already built a reputation for completing high-profile restorations on a tight schedule. At the recent Gdynia Film Festival, Fixafilm founders Wojtek Janio and Lukasz Ceranka were presented with an award for their restoration of director Andrzej Wajda's 1965 epic *Popioły* (*The Ashes*) by the Polish Film Institute, which funded the restoration in partnership with PKN Orlen and rights-holder ZEBRA Film Studio. Here, Janio and Ceranka discuss how ARRISCAN archive tools including the Wet Gate allowed them to assemble a clean, visually consistent movie from the damaged and disparate surviving film materials.

**What is *Popioły* about and why was it selected for restoration?**

**Wojtek Janio:** It was selected because Andrzej Wajda is a respected international director and he is still active, so was able to provide input during the restoration. The film is about a very specific and dark chapter in Polish history, when this country fought alongside Napoleon in a bid to regain its freedom. They didn't have a big budget for the movie so they had to shoot on black-and-white film stock instead of color, but it was

recognized as an important Polish production and was screened at the 1966 Cannes Film Festival.

**What film materials were available for you to work with?**

**Lukasz Ceranka:** It's a long movie, almost four hours, but before it was sent to Cannes the communist government of that time re-edited it down to slightly less than three hours, discarding all the politically sensitive scenes. Unfortunately they cut the



# KEY CONTACTS

## Europe, Middle East, Africa, India

Arnold & Richter Cine Technik GmbH & Co. Betriebs KG  
Headquarters  
Munich, Germany  
+49 89 3809 0

Arnold & Richter Cine Technik GmbH & Co. Betriebs KG  
Business Unit  
Lighting & System Group  
Berlin, Germany  
+49 30 678 233 0

ARRI Italia S.r.l.  
Milan, Italy  
+39 02 2622 7175

ARRI CT Limited  
London, Great Britain  
+44 1895 457 000

## Americas

ARRI Inc. East Coast  
New York, NY USA  
+1 845 353 1400

ARRI Inc. West Coast  
Burbank, CA USA  
+1 818 841 7070

ARRI Inc. Central & Southern America  
Fort Lauderdale, FL USA  
+1 954 322 4545

ARRI Canada Limited  
Toronto, Canada  
+1 416 255 3335

## Asia Pacific

ARRI Asia Limited  
Hong Kong  
+852 2571 6288

ARRI China Co. Limited  
Beijing, China  
+86 10 5900 9680

ARRI Australia Pty Limited  
Sydney, Australia  
+612 9855 4300

www.arri.com  
**ARNOLD & RICHTER CINE TECHNIK**  
GmbH & Co. Betriebs KG  
Türkenstr. 89 · 80799 Munich  
Telefon +49 89 3809 0  
Fax +49 89 3809 1244

## Published by:

Arnold & Richter Cine Technik, Türkenstr. 89, 80799 Munich

## Editor & Chief Copywriter:

Mark Hope-Jones

## Additional contributors:

Martin Cayzer, Markus Dürr, Judith Evans, Jeanfre Fachon, Neil Fanthom, Syna Greiser, Michael Jonas, Debra Kaufman, Sibylle Maier, Catia Marini, Susanne Mayer, Thorsten Meywald, Stephan Schenk, Marc Shipman-Müller, An Tran, Alida Varano, Philip Vischer, Hendrik Voss, Mike Wagner, Franz Wieser, Markus Zeiler

**Editorial Design & Art Direction:** polta.co

The opinions expressed by individuals quoted in articles in ARRI NEWS do not necessarily represent those of ARRI or the editors of ARRI NEWS. Because of our constant endeavour to improve quality and design, modifications may be made to products from time to time. Details of availability and specifications given in this publication are subject to change without notice.

Ident Nr.: 80.0006822



from original camera negative whenever possible, which has a totally different grain structure to a print taken from it. The print seen at a premiere would be dense, with lower definition and less grain, so working from original camera negative immediately distances you from the look of what was originally seen by audiences.

**LC:** One argument is that restoration gives filmmakers the chance to create what they would ideally like to have shown on the day of original release, even though they couldn't do it at the time. The ethics are tricky and there's no right answer. Our approach in Poland is to scan everything in 4K and archive it, and then to create a new version that has been digitally cleaned as well as possible, mostly to attract young viewers who are used to modern images.

**For this job you used the Wet Gate on the ARRISCAN for the first time; why was that?**

**LC:** There were several reasons: the Wet Gate gets rid of a lot of scratches and a lot of dirt, and it also reduces localized flicker caused by bacteria eating the emulsion in some parts of the frame but not others, which is really hard to remove with digital tools. The big advantage of the Wet Gate is that in one pass you can fix a lot of problems organically that would be very difficult and time-consuming to fix digitally.



From left: Wojtek Janio, colorist Gosia Grzyb and director Andrzej Wajda



ARRISCAN with Wet Gate at WFDiF, Warsaw



**WJ:** When we did a comparison test between a one-light scan on another machine and a Wet Gate scan with the ARRISCAN, the difference was just amazing and we knew straight away that we had to use the Wet Gate. We turned to WFDiF, a company that owns an ARRISCAN with Wet Gate; they did a beautiful scan for us and they did it incredibly fast. We were supposed to do this job in three months, but all the problems with the different film materials lost us time and in the end we had to do it in less than two months. If we hadn't scanned everything with the Wet Gate, we would have been in trouble.

**Did Andrzej Wajda actually attend the restoration?**

**LC:** We worked with Mr Wajda on a direct basis for the grading of the film. He really liked what we had done with the image and he appreciated the fact that we could clean up the bits of rushes cut into the negative, because he regretted them getting lost in the first place. The cinematographer is no longer alive but his assistant is, so he helped us as well.

**WJ:** In Poland if the original cinematographer of a film cannot be there to advise during a restoration, then the Polish Society of Cinematographers designates someone else

to do it. In this case it was the camera operator on *Popioly*, Andrzej Kostenko, who is good friends with Mr Wajda and was able to call him with questions. For example you sometimes couldn't tell from the negative whether a scene should be graded for day or night, because they had originally shot day-for-night, but Mr Wajda was able to provide guidance on that. It was great to have both of them involved in the process.





# SKYPANEL<sup>®</sup>

SOFT LIGHTING | REDEFINED

The new ARRI SkyPanel line of LED soft lights is launching with the S60 and the smaller S30, in both fully tuneable and remote phosphor versions. Featuring versatile user controls and rugged build quality, SkyPanel delivers exceptional light output with a soft, uniform beam field and high color rendering.