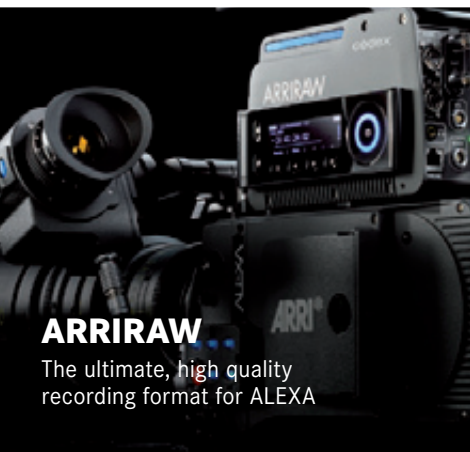# ARRINEWS

NAB ISSUE 2011

NEW L-SERIES

Versatile and cost-saving
LED-based Fresnel lights

ARRIRAW

The ultimate, high quality
recording format for ALEXA

ARRISCAN

Preserving cinema history with
archive and restoration tools

PCA RANGE

New film-style accessories
for smaller digital cameras

EDITORIAL

DEAR FRIENDS AND COLLEAGUES

At NAB this year ARRI is unveiling a major new development to its range of lighting products. The result of extensive technical innovation and customer feedback, our new ARRI L-Series fixtures are, in many ways, the LED lights that film professionals have been waiting for. Together with advancements to our existing LED line-up and new tungsten lampheads, they demonstrate how ARRI lighting is making quantum leaps every bit as impressive as our imaging divisions.

Meanwhile the ALEXA camera system has been enthusiastically embraced by international film and program makers, achieving emphatic penetration and acceptance in every category of production; inside these pages you will find stories of high-end feature film, television and 3D productions that have benefitted from ALEXA's unique offerings, as well as details of the latest updates and exciting new models in development. You will also find news of how our DI archive tools are helping to preserve and restore the earliest films of Alfred Hitchcock – the master of suspense.

Still more stories can be found online. Since its launch at IBC last year, the news platform that welcomes visitors to our website has featured over 70 articles about how ARRI products and services are being used on all types of production, all over the world. Take a look – and get in touch if you have an experience to share with us.
www.arri.com

Dr. Martin Prillmann   Franz Kraus

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A natural selection for cinematographers

THE EVOLUTION
OF ARRIRAW

Since a successful first test phase in January, filmmakers have come to realize that ARRIRAW delivers the best possible image quality from the ALEXA CMOS sensor, selecting the format for several major motion picture and commercial productions this year. Additionally, most postproduction facilities now have tools in place to support an ARRIRAW workflow, making it the natural selection for delivering uncompromised image quality, cost-effectively. Nevertheless, some people still ask the following …

WHAT'S THE POINT OF ARRIRAW?

We all know that ALEXA already records great-looking images, and there is clearly a measureable cost benefit of recording in-camera with ProRes 4444. So what is the real advantage in capturing with ARRIRAW?

Some camera formats compress the RAW sensor image down to a manageable file size to allow recording in-camera. Once recorded, the image is decompressed and reconstructed (de-Bayered) as part of the postproduction process. This procedure results in visible artifacts and the inaccurate rendering of colors. ALEXA ARRIRAW recordings are different in that they are uncompressed, uncompromised and compression artifact-free, making it the perfect choice for high-end cinematic applications.

The ARRIRAW image needs to be recorded in a special way, using ARRI's Transport Link (T-link) interface to a certified recorder – capable of recording at a data rate almost 10 times higher than ALEXA's in-camera recording technology. ARRIRAW footage can then be reliably transported on data magazines and easily ingested into postproduction systems for real-time quality control and cost-effective dailies. The original ARRIRAW files can be archived for use at a later date - a process entirely analogous to traditional film capture, where film negative is processed, scanned into a DI pipeline for dailies and then archived for future use.

ARRIRAW

WHO CAN WORK WITH ARRIRAW FILES?

The same advancements in image processing, viewing and storage media that revolutionized the digital stills industry have unlocked the potential for manipulating RAW images in the broadcast and movie industries. ARRI is openly working with over 30 software and hardware partners to bring creative and efficient digital workflow tools to the market. Almost any postproduction facility in the world now has the ability to work with ARRIRAW files, with new features and increased levels of performance becoming available every day. A full list of partners can be found at:

www.arridigital.com/contacts/partnerprogram

WHAT'S THE BENEFIT OF ARRIRAW FOR VISUAL EFFECTS APPLICATIONS?

ALEXA's ProRes in-camera recording system produces wonderfully clean 1920 x 1080 HD images, ideal for most visual effects (VFX) applications. Recording with ALEXA in ARRIRAW mode will allow the full 16:9 sensor resolution of up to 3072 x 1728 to be recorded, and currently a 2880 x 1620 image is captured in compatible recorders. With ARRIRAW, VFX teams can now choose to work with either a downscaled HD or 2K image, or for optimum quality a 3K ARRIRAW image, increasing flexibility in image manipulation and improving finished quality in VFX-heavy applications.

WHY SHOOT ARRIRAW?

- **It delivers the best possible digital alternative to capturing on 35 mm film**

- **It is uncompressed and unencrypted – all the way from scene to screen – guaranteeing the purity of the image**

- **It does not 'bake-in' any camera settings, so features such as White Balance can be adjusted in post**

- **The ARRIRAW image capture and archival process follows a more traditional, film-like workflow**

These key attributes make the transition from film to digital a much more transparent process for cinematographers and directors, who place a high value on preserving image quality, retaining creative flexibility and working with repeatable production processes. Based on the purity of image and simplicity of workflow, and the speed at which the format has been embraced, the future of ARRIRAW for major motion pictures and high-end commercials seems assured.

ARRI®
CERTIFIED FOR
ARRIRAW
T-LINK
ALEXA

ARRIRAW COMPLIANT RECORDERS

ARRI continues to work with recorder manufacturers and partners on ARRIRAW T-link compliance testing. The Codex OnBoard was the first recorder to be certified, and is already being used on ARRIRAW productions worldwide. The OB-1 recorder from S.two is also now certified.

Based on the growing demand for ARRIRAW recording, ARRI is pleased to announce a reseller agreement with Codex. A cost-effective version of the Codex OnBoard, offering ARRIRAW-only recording, is now available through ARRI sales channels. This entry-level version is fully upgradeable to a standard Codex with wavelet and uncompressed HD recording formats, and is compatible with Codex's standard Datapack and Transfer Station products.

codex™   **S.two**
Digital Filmmaking

RESCUING THE HITCHCOCK 9

ARRISCAN archive tools help save Alfred Hitchcock's earliest films

The famed director Alfred Hitchcock often made cameo appearances in his own films; here he is holding a book in *Blackmail*

THE HITCHCOCK 9

The Pleasure Garden (1925)

The Lodger (1926)

The Ring (1927)

Downhill (1927)

Easy Virtue (1927)

The Farmer's Wife (1927)

Champagne (1928)

The Manxman (1929)

Blackmail (1929)

Having invested in a 4K ARRISCAN film scanner with 16 mm and 35 mm Wet Gates and the Sprocketless Film Transport, the British Film Institute (BFI) is putting these state-of-the-art ARRI restoration tools to use on the earliest surviving films directed by Alfred Hitchcock. Curators at the BFI National Archive, which is the world's largest film and TV collection, have identified the nine silent films as being in desperate need of restoration. A fundraising campaign has been launched, called 'Rescue the

Ben Thompson of the BFI
National Archive preparing to
scan a Hitchcock negative

Hitchcock 9,' with the goal of restoring the films for audiences today and also preserving them for generations to come.

"The restoration project is now underway," says Charles Fairall, Head of Conservation at the archive. "Scanning is taking place both in-house and on ARRISCANs at the facilities of our framework providers, Deluxe 142 and Deluxe Digital. Having our own scanner gives us the flexibility to maintain complete control over particularly delicate material."

At the controls of the BFI's ARRISCAN is Image Quality Section Leader Ben Thompson, who recently attended an advanced user training course at ARRI's Munich headquarters. Thompson has been dry scanning Hitchcock negatives and making decisions about whether to use the Wet Gate or Sprocketless Film Transport on a reel-by-reel, even shot-by-shot basis. "If we get a really bad section then we'll put it through the Wet Gate," he says. "Often the worst shots are at the beginning and end of each reel, because they've been handled the most."

For the majority of the Hitchcock films, the masters comprise dupe materials, but for certain titles original nitrate camera negatives still exist. One of these is being scanned by the BFI, but another has been entrusted to Deluxe 142 in London because the facility has considerable experience with nitrate. "We've done more nitrate scanning with the ARRISCAN than anyone else in the UK," says John Palmer, Digital Film Bureau Manager. "Some of the

Hitchcock material is in a bad state, with flare and distortion and shrinkage, but some of it looks utterly fantastic and the quality of the images is phenomenal. I think you can really tell the difference with nitrate; the blacks are just incredibly sumptuous."

Although the BFI is using ARRISCAN accessories designed specifically for restoration applications, Deluxe 142 is taking advantage of the fact that the ARRISCAN already has built-in software, configuration options and design attributes that make it suitable for archive work: the registration pin can be disabled and the LED illumination means that highly flammable nitrate materials are not exposed to any heat during the scan. "For this project I'm utilizing the archive options within the GUI," says Palmer. "I'm running pin-less on everything and I've adjusted the racking to compensate for the fact that it's not an Academy frame position."

The Hitchcock 9 project will see restored versions of the films being released in cinemas next year. "We have to matrix our approach so that we maximize use of the collections," says Fairall. "In the case of the Hitchcock restorations, that's nine titles done at the highest possible quality for a cinema

The ARRI Wet Gates utilize a unique system that minimizes contact with the film and avoids the risk of scratching
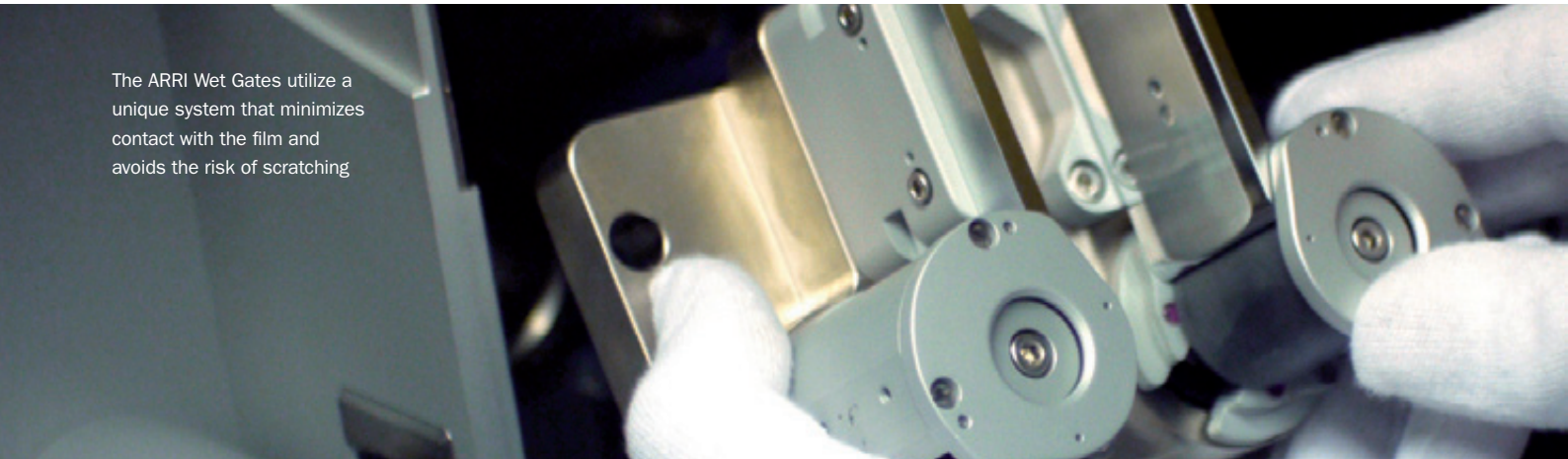
The ARRISCAN GUI incorporates software tools designed specifically for working with fragile, historic film materials

> "We have to matrix our approach so that we maximize use of the collections."

experience, with new music scored for each film; it will be a big extravaganza for 2012, forming part of the cultural Olympiad. Not only are we generating material for audiences now, but we're also protecting the original masters and creating new preservation elements, which will be stored in our sub-zero vaults for future generations to enjoy."

As well as forming the basis of its approach to this ambitious project, the ARRISCAN archive tools will expand the archive's restoration capabilities for years to come. "Previously we were pretty much limited to 2K, but we've got the capacity now to scan at whatever resolution we want," says Thompson. "We might down-res and work at 2K for a restoration, but the preservation scans can be at 4K. Another advantage of the ARRISCAN is that it widens the range of materials we can consider using for a restoration. For example with a print displaying a magenta bias - which doesn't have much status in the archive world - we can now offset the LED to cancel out that bias in the scan, allowing us to use an element that might previously have been written off."

ARCHIVE TECHNOLOGY

ARRISCAN

ARCHIVE GATE

SPROCKETLESS TRANSPORT

In cooperation with restoration experts worldwide, ARRI has developed a series of custom ARRISCAN accessories for digitizing fragile, historical films. With an enlarged aperture, the pinless Archive Gate allows damaged film and non-standard formats to be scanned and stabilized with ease. Even older and more vulnerable materials can be scanned with the Sprocketless Film Transport, while the 16 mm and 35 mm Wet Gates gently clean away dust and imperfections.

An Archive Workshop is being held at ARRI in Munich between May 31st & June 1st 2011. Contact **smaier@arri.de** for further details.

Visit the BFI's Rescue the Hitchcock 9 webpage: **www.bfi.org.uk/saveafilm.html**

SNEAK PEEK:
ALEXA CAMERAS

ALEXA is not just a camera; it is an advanced technology platform from which ARRI is deriving a comprehensive line of cameras for every production need. In late 2011 the current two models, ALEXA and ALEXA Plus, will be joined by a new and unique camera, the ALEXA Studio. As the top-of-the-line model, ALEXA Studio will have an optical viewfinder and a 4:3 sensor. Soon afterwards a fourth camera will be added to the lineup, the ALEXA M - a flexible and compact solution consisting of separate camera head and body.

ALEXA M

ALEXA M is custom tailored to 3D productions, action photography and tight corner shots where the physical space available on set or on location is limited. Despite its diminutive size, ALEXA M does not necessitate any compromise when it comes to image quality; being based on existing ALEXA technologies, it outputs the same exceptional and cinematic images that have quickly boosted ALEXA to the pinnacle of digital production tools.

The ALEXA M camera head is optimized for small size and low weight, offering great flexibility when used on compact and lightweight 3D rigs; multiple mounting points on the top and bottom of the camera allow for an easy setup with many of the 3D rigs now in widespread use. Head and body are connected with a fiber optic cable that can also be used for powering the head, depending on distance. The backend provides various recording options, just like the standard ALEXA; images, sound and metadata can be recorded to SxS cards or external recording devices, offering many different kinds of workflow. ALEXA M has a PL mount and works perfectly with all existing 35 mm lenses. It will also be compatible with a wide range of ARRI accessories.

ARRI is currently planning to present working prototypes of the ALEXA M at IBC 2011.

ALEXA M Main Features

· ALEXA image quality
· Separate head and body
· Perfect for 3D, tight corner shots and fast action
· Compact and lightweight head
· Full 3D sync functionality
· Fiber optic interface between front and back end
· Power via fiber cable or local power supply
· Multiple 3/8-16 and M4 mounting points
· Fixed PL mount

IN DEVELOPMENT

ALEXA STUDIO

Both its name and its feature-set clearly show this camera's heritage. On the one hand, the ALEXA Studio is equipped with a quiet mirror shutter and an optical viewfinder like the ARRICAM Studio. On the other hand, it has the same control panel and buttons as the ALEXA Plus, which has been praised for its simplicity of operation.

The viewfinder is a completely new development, which allows it to accept both 435 and ARRICAM style eyepieces and viewfinder extensions. Operators can look forward to a high resolution, high contrast image with true colors and little geometric distortion. If need be, the optical viewfinder can be removed and replaced with the ALEXA Electronic Viewfinder EVF-1.

Using the full 4:3 area of the ALEXA sensor allows plug-and-play use of 2x anamorphic lenses on the ALEXA Studio. Aside from the D-21, which also has a 4:3 sensor, this is an area that has been oddly neglected by digital cameras in the past. Anamorphic lenses create a unique image quality that has been appreciated by directors throughout film history and that cannot be created in post. Some highlights of anamorphic cinematography include *Apocalypse Now, Blade Runner, Chinatown*, the *Indiana Jones* films, *Alien, The Last Samurai* and the latest *Star Trek* film, which delved very deep into the aesthetic of anamorphic flares. The optical viewfinder is equipped with a special anamorphic element that can be swung into the optical path to de-squeeze 2x anamorphic images. When the electronic viewfinder is used, special software takes care of the de-squeezing.

Due for release before the end of the year, the ALEXA Studio - with its 4:3 sensor, optical viewfinder and other high-end features - is positioned to become the premium camera for spherical and anamorphic feature films and commercials.

OPTICAL VIEWFINDER ADVANTAGES

Operators see a bright and sharp, full color image through an optical viewfinder, allowing them to accurately judge focus. Relying only on light coming through the taking lens, optical viewfinders have zero delay, require no power and are less fatiguing to the eye than electronic viewfinders; they are also fully orientable and can be used with eyepiece extensions without any loss of image quality.

GAME OF THRONES

ALEXA shoots the highly anticipated HBO fantasy series

DoP Marco Pontecorvo, AIC

Based on the bestselling fantasy book series *A Song of Ice and Fire* by George R.R. Martin, the new, ten-episode HBO series *Game of Thrones* was shot on ALEXA cameras by cinematographers Alik Sakharov, ASC and Marco Pontecorvo, AIC, though Matt Jensen took over for Pontecorvo when he left the series to direct a feature. The production shot in Northern Ireland and Malta with camera equipment supplied by ARRI Media in London and a lighting package from ARRI Lighting Rental.

ARRI News: How did you set about deciding on a visual approach?

Marco Pontecorvo: We began with a concept of a very strong and committed look, in order to express the atmosphere and scale of the show; we also decided on how the look should differ between Northern Ireland and Malta, in order to help the audience place each scene. Once we'd done that we started work on some LUTs to really discover that look - this was in preproduction - and then the LUTs were adjusted and refined while we were

shooting. Alik made his adjustments and I made mine; mainly it was playing with the curve and applying desaturation, with a generally warmer look in Malta and a cooler approach for Northern Ireland.

Alik Sakharov: The tone of this series had to be a little bit more expansive than most TV shows. We didn't want it to feel claustrophobic; we were basically trying to explore as many filmic possibilities as we could and structure shots to create the depth and breadth of a feature film. I also explored the idea of under-lighting certain scenes, which allowed us to concentrate the eye on where the action is happening, as opposed to lighting

DoP Alik Sakharov, ASC
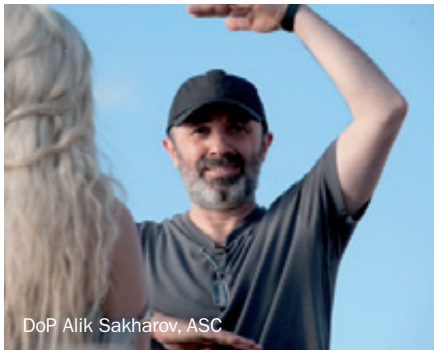
"There was so much information in the ALEXA images that it just won us over."

everything in one big wash of light. I have to say that the ALEXA was instrumental in getting this stuff. I never thought I would be singing praises to HD technology and yet there I was, utterly enamoured by it.

AN: So ALEXA helped you achieve a cinematic look?

AS: It really did. It's remarkable, the latitude of the camera, its look, and also its ability to so closely represent the curve of film; I was just flabbergasted. We tested a film camera and two digital cameras very extensively for a full week and took the tests all the way through postproduction, working with Gary Curran, our colorist at Screen Scene. There was so much information in the ALEXA images that it just won us over. We've all been waiting for the next big thing in HD;

when ALEXA arrived it was vastly different from what had come before and for the first time I was happy to shoot in situations with extreme highlights and shadows.

AN: Was ALEXA's dynamic range a significant asset on this production?

MP: First of all the ALEXA was extremely user-friendly, but yes - the dynamic range was fantastic. Of course there's always room for improvement, but I can't see why I'd need more dynamic range – and my style for the show was to shoot with a high contrast ratio. That was the case even in Northern Ireland, when we were shooting on the stage; I had a lot of contrast, with strong shafts of light and lots of shadow. The range could easily be from T2.8 to T22, so I did need the ALEXA's dynamic range and it performed very well. If you give me the stops, I'll use them!

AN: Did the camera's sensitivity also prove advantageous, and did you waver from the base sensitivity of 800 EI?

AS: I found the 800 EI rating of the camera very comfortable – it sat perfectly. There were occasions where I was pushing the camera to 1600 EI and I have to say that I didn't see much noise. One of these scenes was set in a crypt and I barely lit it at all – it was basically all done with candles. The colorist sent me a message and said that I obviously knew what I was doing because the image was perfect, but I had no idea what I was doing, I just relied on the camera! In general I lit it very much like I would a film set. The demands of the camera were not huge. ARRI has gone to great efforts not to create a monster that requires a lot of attention; I wasn't a slave to the technology, the technology was there to help me and the results were the same if not better than film.

AN: What recording solution were you using and how were you viewing rushes?

AS: We recorded to HDCAM SR and concurrently to SxS cards. To be honest we didn't follow the normal routine of dailies; that workflow was eliminated and instead the LUT was recorded on the slate and the post house could use that information to apply the right look. On set we had monitors calibrated to the LUTs and I relied heavily on that. As soon as the SxS cards were taken from the camera, our DIT plugged them into his computer, pulled up the references, applied the look and put up the stills. At the end of the day he would give me a flash drive with all the images on it, already corrected and with the LUTs applied; in a way, those images were my rushes.

MP: Collaborating with a good DIT is fundamental because he can help you take full advantage of all the possibilities of the camera without you having to expend energy on this, allowing you to focus on the more creative side of things; he will also prevent problems coming between you and what you want to achieve. The fact that our DIT was able to basically time all of the material while we were shooting, and create a look for each scene, was fantastic, because the director and everyone else could see what we wanted to achieve from the beginning.

Game of Thrones debuts on April 17 on HBO in the US, and on April 18 on Sky Atlantic in the UK.

Read the full length interview online:
www.arri.com/goto/1104/GOT

ARRI
L-SERIES

Versatility meets efficiency

At NAB ARRI is introducing a new generation of LED-based Fresnel lights that was first presented in concept form at IBC last year. The ARRI L-Series represents a major step forward in the integration of LED technology into the film and broadcast industries.

FAMILIAR FUNCTIONALITY, BREAKTHROUGH PERFORMANCE

Whereas other LED fixtures have taken forms that demand sacrifices in the quality of lighting designs, the L-Series is unique in that it fits perfectly into established working practices. This means that lighting designers will not have to adapt their creative techniques, nor will studios have to change their operating procedures; conventional Fresnels can be exchanged for L-Series Fresnels on a like-for-like basis, achieving substantial and immediate cost savings with minimal disruption.

LSERIES

THREE MODELS, 12 CONFIGURATIONS

Launching the L-Series are three LED Fresnel units that are comparable in intensity to a conventional 1K Fresnel. The L7-D, L7-T and L7-C all share the same basic housing and the same 7" Fresnel lens. They differ in terms of color temperature, with the D model outputting a daylight-equivalent 5600 K, the T model a tungsten-equivalent 3200 K, and the top-of-the-range C model offering total color control.

Customers purchasing any of the three initial units can decide between two different cooling assemblies and two different control options, so there are actually 12 distinct L-Series configurations available at launch, catering to a huge variety of studio and location lighting requirements.

A SECURE, UPGRADEABLE INVESTMENT

One of the key attributes of the L-Series is that it is an expandable system platform. Not only will further models be released as technology advances, but all models employ a future-proof architecture with upgradeable light engines, controls and optical accessories. Investment in the L-Series is therefore a safe, long term strategy for keeping up with the latest technological innovations.

THE VERSATILITY OF A TRUE FRESNEL

Fresnel lights are workhorses of the industry and the L-Series fixtures are the first LED-based units to truly match their performance and versatility. With continuous focusability from spot to flood and defined, single shadow rendition, the L-Series produces an even light field that is exceptionally smooth and homogenous.

Barndoors and flags can be used to cut and shape the light in exactly the same way as with conventional Fresnels, giving designers the creative options they depend on. Color distribution is consistent and uniform, while high color rendition ensures pleasing, true-to-life images. On the L7-T and L7-D models, the broad spectrum white light ensures excellent rendition of skin tones and colors, while the L7-C allows precise manipulation of intensity, color temperature, green-magenta point, hue and saturation.
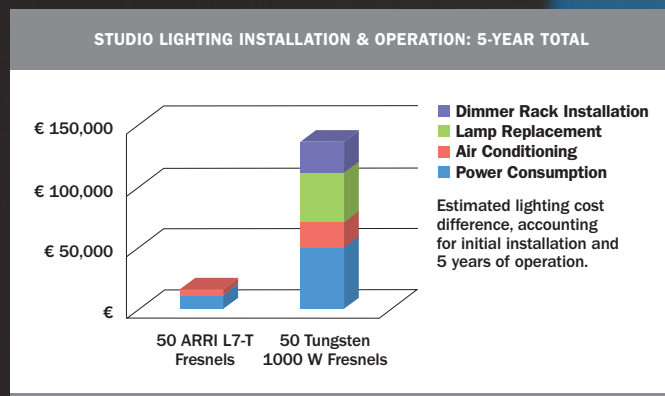
THE EFFICIENCY OF LED

L7 fixtures consume 75% less power than conventional tungsten Fresnels. The lack of forward heat makes for a more pleasant work environment, but it also vastly reduces the need for air conditioning, further minimizing energy consumption. In addition, the highly durable LED light engine is resistant to power fluctuations and rated to last around 200 times longer than a traditional tungsten lamp. Taken together with other attributes such as built-in dimming, these efficiencies add up to extremely significant cost savings and will facilitate a rapid return on investment.

ON-BOARD CONTROL OPTIONS

All of the L-Series models can be configured with or without an on-board controller. In studio setups, lights are likely to be controlled remotely by DMX, whereas on location, manual on-board controls will be of tremendous benefit; this will especially be the case with color tuneable models such as the L7-C. Preset buttons allow a look to be stored in the fixture and recalled later, and since two individual presets can be stored, an operator can easily switch between two different looks.

COOLING OPTIONS

The other configuration option is the cooling assembly, again directed primarily at catering to location and studio applications. To satisfy the rigorous sound requirements of modern broadcast studios, the unique L-Series passive cooling system incorporates no moving parts or fans and is therefore completely silent; it can be used in ambient air temperatures of up to 35°C. Alternatively, the active cooling system uses an extremely quiet (<20 dB) fan and provides a compact and lightweight option for location shoots in temperatures of up to 50°C.

STUDIO LIGHTING INSTALLATION & OPERATION: 5-YEAR TOTAL

- Dimmer Rack Installation
- Lamp Replacement
- Air Conditioning
- Power Consumption

Estimated lighting cost difference, accounting for initial installation and 5 years of operation.

50 ARRI L7-T Fresnels — 50 Tungsten 1000 W Fresnels

ARRI QUALITY

All three L7 fixtures embody ARRI's 75 years of experience in manufacturing Fresnel lights for film and broadcast professionals. Like other ARRI products they are rugged, reliable and built specifically for the most demanding environments, with an IP54 rating earned for resistance to sand, dust, rain and spray. While the L-Series is designed for low maintenance, the fixtures are fully serviceable, with easy access to all components and the support of the global ARRI network.

CASTER SERIES ADVANCEMENTS

Following the success of the ARRI LoCaster and BroadCaster LED-based products introduced last year, ARRI presents the next advancements in the Caster series, the LoCaster A2 (Advancement 2) and BroadCaster A2.

The LoCaster A2 integrates the fully tuneable white control of the BroadCaster into an on-board configuration. With an additional tuneable green knob, users can now adjust the green-magenta shift to match their camera or meter, and are no longer limited to a factory-preset neutral point. Additionally, the color temperature is continually adjustable, enabling fine tuning in-between the calibrated presets.

Light output is increased by 35%, yet both A2 fixtures maintain the same 35W power consumption, form factor, and compatibility with existing Caster accessories.

New LoCaster A2 controls

To learn more, visit the L-Series microsite:
www.arri.com/l-series

ALEXA PRODUCT UPDATES

The latest developments to the ALEXA camera system

Truly cinematic image quality in combination with efficient workflows has resulted in a blindingly fast adoption of ALEXA in the industry. The camera's unique features and great flexibility have seen it shine not only on major 2D and 3D feature films, but everything from international television series, commercials and soap operas to music videos, documentaries and video art. Crews everywhere appreciate the fact that ALEXA is a true ARRI camera – robust, reliable, and tailored to the demanding requirements of a professional set.

With hundreds of cameras in the field, ARRI is receiving an enormous amount of positive feedback from customers worldwide, including many suggestions on how to further improve ALEXA. These suggestions, combined with ARRI's internal list of new features, have led to a number of product updates that will make the ALEXA system an even more versatile toolset.

120 FPS

IN DEVELOPMENT: ALEXA HIGH SPEED

An exciting feature currently in development is the new ALEXA High Speed mode. When switched to High Speed mode, ALEXA and ALEXA Plus cameras can run from 60 to 120 fps; in order to make this possible, ARRI has created a method of pushing full sensor images through the ALEXA hardware at higher frame rates. This does not involve windowing, but instead uses the full size of ALEXA's 35 mm format sensor. Depth of field and angle of view are therefore exactly the same for Regular and High Speed modes.

ALEXA & ALEXA Plus Regular Speed mode
· ProRes 422 (HQ) and lesser codecs: 0.75 to 60 fps
· ProRes 4444: 0.75 to 40 fps

ALEXA & ALEXA Plus High Speed mode
· ProRes 422 (HQ) and lesser codecs: 60 to 120 fps

Enabling the High Speed mode involved reworking the camera's image processing; as a result, there are some differences between the two speed modes. In High Speed mode, the traditional REC OUT output is not available, and the signal from the MON OUT output will be routed to REC OUT.

Additionally, an Auto White Balance can only be set in Regular Speed mode, although it can then also be used in High Speed mode. ALEXA High Speed mode is expected to be available by IBC 2011.

ALEXA ANAMORPHIC DE-SQUEEZE

In order to properly view the image when shooting with 2x or 1.3x anamorphic lenses, a de-squeeze function for the ALEXA viewfinder and the MON OUT output can be activated with the purchase of a license, starting in June. It is now possible for the operator to independently switch between four different modes for the viewfinder and MON OUT when shooting with anamorphic lenses:

- **Anamorphic de-squeeze off (in record and playback modes)**
- **Anamorphic de-squeeze 2x (in record and playback modes)**
- **Anamorphic de-squeeze 2x and magnify (in record mode only)**
- **Anamorphic de-squeeze 1.3x (in record and playback modes)**

All four modes are available with or without surround view.

ALEXA ANAMORPHIC DE-SQUEEZE OPTIONS

Object	Anamorphic Lens	Sensor	De-Squeeze	EVF-1 and/or MON OUT
●	2x	●	2x →	
			2x & magnify →	
●	1.3x	●	1.3x →	
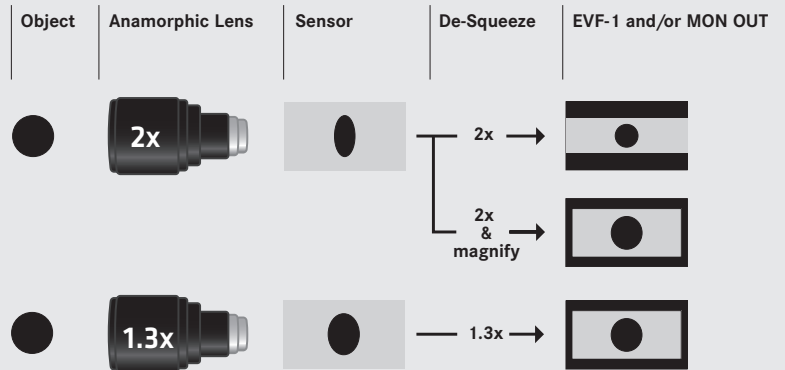
SUP 4.0

ALEXA SOFTWARE UPDATE PACKAGE 4.0

Some major updates and significant improvements comprise Software Update Package 4.0, which is scheduled to be available in June, after a period of Beta testing. Like every other Software Update Package, version 4.0 is free of charge. Here are the most important features:

Audio Playback

Playback of audio (in addition to images) from SxS PRO cards through the headphones jack and embedded in the HD-SDI stream for HD-SDI and ARRIRAW T-link output.

Peaking

A focus check for the viewfinder and MON OUT output.

Auto White Balance

In addition to the wide range of white balance options already available, the new Auto White Balance can automatically determine the red/blue white balance and green/magenta CC values when the camera is pointed at a white surface.

RETURN IN

The RETURN IN connector can accept a video signal that will be shown at the push of a button on the viewfinder and on the MON OUT output.

Fan Low Mode

When this mode is on, the fan will run slower during recording, to reduce the noise in hot environments.

Test Signals

SMPTE color bars and a number of other test signals will be available, including 1 KHz audio tone, directly from ALEXA outputs.

ALEXA EXT DISTRIBUTION BOX EDB-1

Those who want to use two regular ALEXAs (non-Plus) with a UMC-3 in a 3D rig may have noticed that they have one too few EXT connectors; the EXT Distribution Box EDB-1 solves this issue. It is equipped with a short, permanently attached cable that plugs into the camera's EXT connector. On the box are three additional EXT connectors that allow three devices to be connected at the same time. This will be useful for the situation described and also for future accessories that use the EXT connector.

ALEXA BP-13

This bridge plate for the ALEXA is very similar to the BP-12, except that the BP-12 accepts 19 mm studio rods and the BP-13 accepts the older-style 15 mm studio rods.

cmotion partnership

cvolution

ARRI is pleased to announce a strategic partnership with cmotion, a major manufacturer of high-end lens control systems for cinematographic applications. As a result of the partnership, the current cmotion hand controllers will become compatible with the ARRI ALEXA Plus camera. Customers will have the choice of using either ARRI hand controllers such as the Wireless Compact Unit (WCU-3) or cmotion's modular cvolution system.

cmotion has been targeted for partnership because it is a highly innovative company with particular expertise in remotely controlling 3D technology. ARRI and cmotion will work together to market and sell their combined product range globally.

WCU-3

ALEXA SOFTWARE LICENSING

Software Update Package 4.0 will include a licensing mechanism that allows advanced camera features to be enabled via a software license purchase. Each license is coded to a particular camera and can be activated by copying the license to an SD card and placing the SD card in the camera. Licenses can also be de-activated, allowing rental houses full power over which camera is sent out with which feature. The first such pay-per-feature function is the anamorphic de-squeeze.

ARRI CUSTOMER SUPPORT –
ANY TIME, ANYWHERE

ZONE 2 | ZONE 1 | ZONE 3
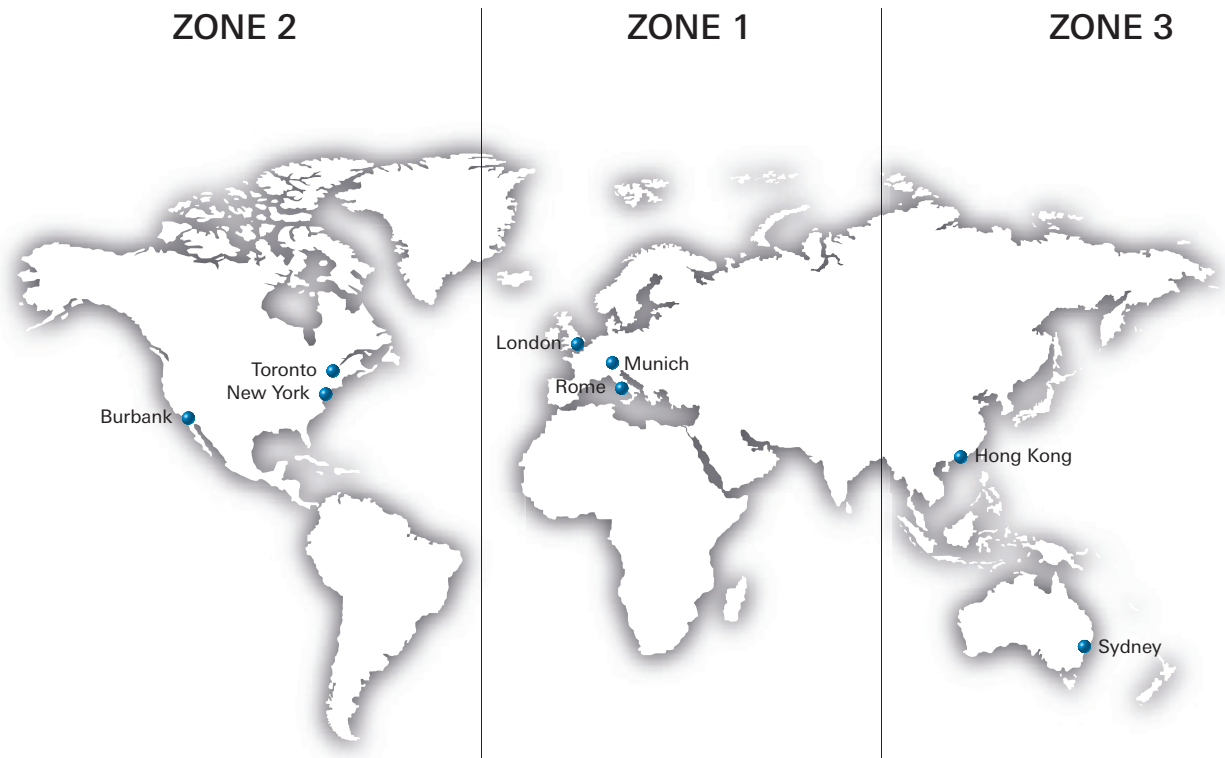
ARRI has centralized its global service structure in order to offer customers a new level of worldwide support. Providing the best possible backup for ARRI digital and analogue camera systems, as well as DI products, the ARRI service centers also distribute upgrades as they become available.

24 / 5 telephone and email support

ARRI service technicians are now available 24-hours-a-day for the full working week, anywhere in the world. This increased accessibility has been made possible by connecting individual service centers to a single, central service platform. Each center is open for the regular business hours in its area, dealing not only with local enquiries but also with redirected emails and telephone calls from around the world. Since ARRI has service centers spread across the globe, there will always be at least one center open to immediately respond to customer enquiries.

One email address for all customers

All emails to service@arri.com are forwarded to the service platform. A skilled service engineer will always respond to an enquiry within 90 minutes and all communication between ARRI and the customer will be saved under a unique service case number. Information typically provided by customers in relation to an enquiry - such as product serial numbers, photos, written descriptions, frame grabs and log files - will also be tracked within the same platform.

Unique service case number

Tracking of service cases across different service centers and time zones is facilitated by the connection of individual centers to the shared platform. The status of every single service call, along with a record of all previous communication and related documentation, is available to each service technician worldwide in real time.

Service website

Although still a work in progress, ARRI has set up a new service website that is continuously updated to show all active service centers at any given time, along with contact numbers for available service personnel.

A single email address for all enquiries:
service@arri.com

Contact details for every service center:
www.arri.com/service

ALEXA CHRONICLES THE ADVENTURES OF D'ARTAGNAN IN 3D

Reflecting the clear advantages offered to 3D productions by the ARRI ALEXA digital camera system, filmmakers behind a major 3D adaptation of Alexandre Dumas' classic novel *The Three Musketeers* selected ALEXA cameras for their high-end feature film. 3D rigs and ALEXA cameras were supplied by PACE, while lighting equipment was provided by ARRI Rental and postproduction services by ARRI Film & TV. A Constantin Film and Impact Pictures production in association with NEF Productions and New Legacy, *The Three Musketeers* was directed by Paul W.S. Anderson and shot by cinematographer Glen MacPherson, CSC, ASC, who recently spoke with ARRI News about his work on the project.

ARRI News: Although you have shot 3D before, this was your first experience with ALEXA; how did it come to be used on the production?

Glen MacPherson: This was my third 3D film and all three productions have used the PACE 3D rigs. It was actually Vince Pace who recommended the ALEXA; he described it in an email to me as a game-changer. Really it was the sensitivity and the latitude of the camera; when you're shooting with a mirror rig you're losing a full stop of exposure right off the top, and I don't think there's any other camera

"There was clearly a big difference in terms of latitude..."

that can keep up with ALEXA in terms of sensitivity.

The testing definitely put my mind at ease. It was fantastic; there was clearly a big difference in terms of latitude and you just don't have to worry any more about exteriors or windows blowing out, or flames - we had a lot of flames, torches and candles. The camera was easily handling those kinds of extreme highlights.

AN: Did your crew adapt to ALEXA quickly and easily?

GM: Oh yes, I think that took a matter of seconds. It's a pretty easy and intuitive menu system - even I was completely comfortable with it! There are some other digital cameras with menu systems so complicated that I just don't bother going into them.

AN: Did Paul's dynamic visual style transition comfortably into 3D?

GM: Paul adapted his style right away because he's a smart guy; he totally gets 3D and we have a lot of fun with it. We did a fair bit of shooting at 50 fps with the ALEXA and in terms of moving the camera, we'll do almost anything! We had a Cablecam; we dropped cameras from descender rigs; we had them in helicopters; we put them

underwater; we mounted them on cars. The 3D rig is pretty compact, so there are lots of options for keeping the camerawork fluid. We also had a Steadicam rig that PACE built for two ALEXAs and we used that quite a bit.

AN: What lenses were you using?

GM: We were using Master Primes, which are a great combination with the ALEXA. A lot of people like to use zooms because they think lens changes will take a long time, but we had it down to three or four minutes and you have fewer problems lining up the lenses if you use primes. I just like the look of the Master Primes; everyone has their favorites.

AN: Were you using the speed of the Master Primes, or is shallow depth of field generally incompatible with 3D cinematography?

GM: There are all sorts of 'rules' about 3D and I don't really know where they came from. I think it's only recently that we've been able to experiment and play around with 3D because you can instantly see what you're getting on set now. If you use a long lens or shallow depth of field for the right reason,

then the shot won't look out of place, even if the 3D effect is slightly diminished. And of course if you keep everything on the wide end then it just becomes a movie about 3D, whereas if you approach it as a movie and 3D as one of the tools at your disposal, then you can do anything.

AN: Did you stick to the base sensitivity of 800 EI, or did you try other settings as well?

GM: I tried to stick to the 800 EI as much as possible, although we got up to 1280 or 1600 EI at some points I think, in extreme low light situations. We had some night exteriors at Bamberg in Bavaria with huge expanses we had to light and I just don't think I could have shot it on film, with the equipment we had. I'd walk out of my tent and think there wasn't nearly enough light, but we'd be shooting at T2.8; it was amazing.

AN: Can you imagine ALEXA having an impact on the kind of lighting kit you need for a feature film?

GM: You can definitely have much smaller units; the ALEXA responds so well to low light

situations. We had some very big sets on the film and at the start I was pre-rigging a lot of big lights up there, but we just wouldn't use them; it was too much. It meant that things like flame-based sources could provide a lot of the illumination and I could light to a really low level to make the candles look more realistic.

We shot in a lot of castles in Bavaria, places that no-one had ever shot in before and there were all sorts of restrictions placed on us regarding the amount of light allowed in a room, or stating that we couldn't light through windows. Those were the situations where ALEXA really helped, because of its sensitivity. The idea that we could be in these castles and shoot with the available light coming through the windows - and yet still see detail out of those windows - was unbelievable, and the director loved it.

Read the full length interview online:
www.arri.com/goto/1104/T3M

Cinematographer Glen MacPherson, CSC, ASC, preferred working with Master Primes rather than zoom lenses, combining their speed with ALEXA's sensitivity in low light situations

ARRI
PROFESSIONAL
CAMERA ACCESSORIES

Film-style functionality for cameras of any size or format

The ubiquitous knowledge of how to use ARRI camera packages that exists within the industry worldwide has as much to do with ARRI accessories as with the cameras themselves. Generations of film professionals have learned how to operate follow focus units, matte boxes, baseplates and support bars by working with ARRI products, which are internationally renowned for their precision engineering and durable build quality.

In recognition of this, ARRI developed the Professional Camera Accessories (PCA) range, making the benefits of ARRI-designed accessories available to cameras from other manufacturers. The range comprises versatile tools that endow almost any digital camera with film-style functionality, from small, handheld HDV units and HD-capable DSLRs to broadcast HD and high-end digital models. This aligns them with universal industry working practices and allows them to be used efficiently and effectively on professional sets everywhere.

PCA Main Features:

· Widespread compatibility
· Rugged and reliable
· Film-style functionality
· Modular and flexible
· Rock-solid build quality
· Ergonomic design

There are two strands to the PCA range: mechanical accessories such as matte box, follow focus and support systems, and electronic accessories such as the ARRI Wireless Remote System (WRS). While the WRS directly controls camera and lens functions on the ALEXA Plus, it can be combined with the Universal Motor Controller (UMC-3) to interface with all types of camera.

Due to the PCA bywords of modularity and flexibility, ARRI is positioned to equip state-of-the-art digital cameras as soon as they emerge into the market, including the Sony NEX-FS100E, Sony PMW F-3, Sony SRW-9000, Panasonic AG-AF101 and Panasonic AG-3DA1, as well as Canon and Nikon DSLR models.

WHAT'S NEW?

FF-5 STUDIO FOLLOW FOCUS SYSTEM

Incorporating features of the popular FF-3 and FF-4 units, the ARRI FF-5 is the ultimate studio follow focus system. The FF-5 comes in two body types; while the FF-5 HD has a 1:1 gear ratio that makes it perfect for ENG broadcast lenses, the FF-5 Cine shares the 1:2 gear ratio of the FF-4 and is designed to work with cine-style lenses. Focus knobs for the FF-5 include the hard-stop knob of the MFF-1, which permits focus pullers to keep their eyes on the action. A modified standard focus knob allows the possibility of using fingers as soft stops, while the 2-speed focus knob of the FF-3 provides a third focus option for the modular FF-5 system.

NEW KITS ON THE BLOCK

In response to customers wishing to purchase a whole set of accessories in order to fully equip a camera, ARRI is now offering kits that group together related accessories in a cost-effective way. These 'New Kits on the Block' include dedicated packages for DSLR applications, as well as specific cameras such as the Sony PMW F-3 and Panasonic AG-AF101. As well as saving customers money, the new kits greatly simplify the ordering process.

MMB-2 MINI MATTE BOX

Compact, lightweight and affordable, the ARRI MMB-2 is a modular matte box system that can be configured to facilitate anything from basic to full professional setups. Designed for the DSLR and smaller video camera market, it is the first such matte box with integrated handgrips, giving operators maximum control and stability. The rear section fits directly onto Compact Primes and Master Primes, while a variety of adapter rings accommodate stills photo lenses and a newly designed filter frame accepts both 4" x 4" and round 4.5" filters. The MMB-2 is ideally combined with ARRI's MBP-1 Mini Baseplate and MFF-1 Mini Follow Focus.

ARRILITE PLUS

A Californian field report on the ARRILITE 2000 Plus

Due to the enduring popularity of its ARRILITE range, ARRI recently released two new incarnations of these traditional, open-faced lights. The compact, lightweight ARRILITE 750 Plus and ARRILITE 2000 Plus have been completely redesigned, offering improved functionality, simplified maintenance and rugged durability. Lighting expert Craig "Burnie" Burns, founder and CEO of Burnie's Grip and Lighting - the largest grip and lighting company south of Los Angeles - was an early adopter of the 750 Plus and here gives an account of his first shoot with the 2000 Plus.

I recently had the opportunity of working with the new ARRILITE 2000 Plus and it was a great lighting experience. To say I'm impressed is an understatement!

I got a call from director of photography Chris Phenix. He was working with director Robert Jolley on a project for a non-profit health organization called Live Fit Revolution. The piece was to deliver one-line statements on the debilitating effects of obesity; it was a very strong message. Robert wanted to shoot in a blacked-out studio with one light source and do three different shots for each statement: a wide shot seeing the whole stage with the talent sitting in a director's chair; a medium shot; and an extreme close-up. He wanted the light to be hard, with no diffusion. I consulted with Chris and we selected the ARRILITE 2000 Plus because we needed the punch from across the studio and the ability to light evenly at a distance.

We made the right decision; the ARRILITE 2000 Plus performed flawlessly.

When I received the 2000 Plus it came straight out of the box and was put to work. I needed to globe the lamp so I grabbed my screwdriver to remove the safety screen; as I looked for the removal screws I found that the ARRILITE 2000 Plus has a hinged safety screen with a pressure latch. The safety screen released and closed very easily, and the spring-loaded light socket made applying the globe to the lamp a quick and easy process. Small things make a big difference on set; the ability to change a globe within minutes takes a lot of pressure off the gaffer and the entire production.

ARRILITE Plus: a modern take on an established lighting concept

Another thing that immediately struck me was the weight of the instrument. It has been designed to be compact and ARRI has reduced the weight of the aluminum body. I was also impressed by the heavy duty switch it came with. Every equipment owner knows that the switch is something that always gets used and is vulnerable to impact. It's clear that the ARRILITE 2000 Plus switch can stand up to real-world conditions.

When I mounted the 2000 Plus on its baby stand and locked it into position, it felt good and solid. It comes with the ARRI True Blue disc break technology that locks the light in place securely, and any lighting technician will tell you that having a light stay where you put it is one of the best things that can happen to you on set!

Along with the lighter weight, ARRI has designed an aluminum housing that allows for better heat distribution. Not only does the head stay cooler, making it safer to work with, but ARRI has added a heatproof handle on the back to make adjusting the light a breeze. Also, with a light as bright as the 2000 Plus, being able to easily adjust the top latch to put in or remove scrims, or to put on or take off the barndoors quickly, is a big bonus. ARRI's top latch does just that - being spring-loaded, it just pulls up, turns and opens.

Of course the big game-changer is the ARRIMAX reflector, which makes the light dramatically efficient. It has a very bright wide flood that can fill a room, and a very intense spot setting for when you have to light at some distance. ARRI has really been listening to the end users on set; everything in the design of the ARRILITE 2000 Plus makes life easier for the set lighting technician.

Read Burnie's report on the ARRILITE 750 Plus:
www.arri.com/goto/1104/burnie

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ALEXA LUT GENERATOR

Lookup tables, or LUTs, transform input data into a more desirable output format. When shooting with ALEXA, this typically involves applying conversion values to material captured in Log C in order to make corrected images available both on set and in postproduction. Without the LUT, Log C images recorded by ALEXA would bear little relation to the world as we see it.

LUTs can also be created in order to give a production a unique look, or multiple unique looks. The ALEXA LUT Generator webpage allows productions to select or generate standard conversion LUTs out of the many available combinations and download those that are suitable to their needs.

These LUTs are provided as supporting tools for ALEXA productions. As specific needs vary on a project-by-project basis and third party LUT formats are subject to change, ARRI recommends that LUTs are tested before being used on a production.

The LUT files can be created in more than 20 different formats for a wide range of software and hardware systems. For Log C images, they are divided into four categories:

- **Preview of Log C images on set**
- **Conversion of Log C images for dailies**
- **Color correction of Log C images with a conversion LUT in the display path**
- **Round trip conversion of Log C to linear data in a VFX workflow**

The Log C to video conversion LUTs mimic the color processing in the ALEXA camera. Hence, Log C images converted or previewed with these LUTs will look like the Rec 709 (video) output of the camera.

Visitors to the webpage will need to register before accessing the LUTs. This allows ARRI to inform users of any updates or improvements to image processing tools.

www.arridigital.com/technical/luts

ALEXA WEB TOOLS

The Digital Workflow Solutions group within ARRI has developed a number of online web tools to improve the knowledge and resources available to cinematographers, camera operators, DITs, editors, colorists and VFX supervisors involved in ALEXA workflows.

ALEXA CAMERA SIMULATOR

The ALEXA Camera Simulator is an interactive training tool for operators who want to familiarize themselves with the menu navigation of the ARRI ALEXA digital camera. The simulator's main user interface shows an identical simulation of the ALEXA side panel, with current software version.

Using a mouse to move the cursor over ALEXA's buttons and jog wheel allows every menu option to be accessed, while for those with a touchscreen display the simulation is even closer to the real thing. In this way anyone with internet access can quickly learn the straightforward and logical ALEXA menu system, before they even get their hands on the camera itself.

www.arridigital.com/technical/simulator ▬▬▬

ALEXA FRAME LINE COMPOSER

A standard set of frame lines is provided in each camera by default. As of ALEXA software version 3.0, there are extended possibilities inside the camera for the user to create individualized frame lines in accordance with their personal preferences.

The ALEXA Frame Line Composer allows customized frame lines to be created online. These frame lines can be downloaded and saved not only in the necessary file format, but also as a full-size image that can be used later as a frame leader in editorial and postproduction.

www.arridigital.com/technical/aflc ▬▬▬

For questions or help using the ALEXA web tools, e-mail **digitalworkflow@arri.de**

EXPO
CALENDAR
2011

These are the key trade shows and exhibitions where you can find out about ARRI products and services*

2011

April	11 – 14	**NAB**	Las Vegas
May	03 – 06	**FMX 2011**	Stuttgart
May	11 – 22	**Cannes Film Festival**	Cannes
May	17 – 19	**Testing Expo**	Stuttgart
June	02 – 05	**Cine Gear**	Los Angeles
June	07 – 09	**ShowTech**	Berlin
June	14 – 17	**Koba**	Seoul
June	21 – 24	**Broadcast Asia**	Singapore
June/July	24 – 02	**Filmfestival Munich**	Munich
July	19 – 22	**SMPTE**	Sydney
August	24 – 27	**BIRTV**	Beijing
September	08 – 13	**IBC**	Amsterdam

*Dates correct at time of press; please reconfirm before making travel plans.