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Canon Cover Story

EXT. 20,000 ISO - NIGHT

Canon's Cinema EOS System
and C300 35mm Cameras

FDTimes First Look

New ZEISS Anamorphic Lenses,
Compact Zoom, CP.2 Primes

Exclusive Interviews

Angenieux, Leica, Canon

IBC and Year-End Gear Wrap Up

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Cover: Two Canon C300 cameras on the production of "Sword" co-directed by Felix Alcalá and Larry Carroll, with actors Jessica Matsumoto and Lane Townsend in a Passport Films production. Cover image and images on pages 4-10 © Canon U.S.A., Inc. Used with permission. Sensor and base on page 7 © FDTimes.

Painting with Light: EXTERIOR - NIGHT



Starry Night Over the Rhone
Vincent van Gogh. 1888
Oil on canvas. 72.5 × 92 cm (28.5 × 36.2 in)
Musée d'Orsay, Paris

Starry Night (Nuit Étoilée)
Jean-François Millet. ca. 1851
Oil on canvas, 65.4 x 81.3 cm (25 3/4 x 32 in)
Yale University Art Gallery, New Haven



Dear Theo,

I have discovered a wonderful new digital 35mm cine camera. It lets me work up to 20,000 ISO, seeing color and shapes I can barely discern with my naked eye. It is unlike anything we've seen before. As you know, my producers continually worry about how much the budget increases when I write, paint or shoot "EXTERIOR-NIGHT." Not any more. Of course, available light still must be beautiful, and we still must augment it with our own artistry. But, we can now work at much lower light levels, creating new looks...

Actually, here's what Vincent Van Gogh really said:

"The starry sky painted by night, actually under a gas jet. The sky is aquamarine, the water is royal blue, the ground is mauve. The town is blue and purple. The gas is yellow and the reflections are russet gold descending down to green-bronze. On the aquamarine field of the sky the Great Bear is a sparkling green and pink, whose discreet paleness contrasts with the brutal gold of the gas. Two colorful figurines of lovers in the foreground."

And: "It often seems to me that the night is much more alive and richly colored than the day... The problem of painting night scenes... on the spot and actually by night interests me enormously."

Almost forty years earlier, Millet painted *Nuit Étoilée*, lit only by shooting stars and the glow of a village over the horizon. Millet described his painting in 1856, "If I could only make others feel as I do all the terrors and splendors of the night; if I could but make them hear the songs, the silences and murmurings of the air—one must feel the presence of the infinite."

Bring on the night. New tools are here to help us see its splendors.



Canon C300



What's so great about the new Canon Cinema EOS C300 and C300 PL? In two words: Exposure Index. This tiny 3 pound camera shoots beautiful 35mm motion pictures in very dark places.

Focus on the night. No longer will studio chieftains exhort their writers to eschew the dreaded slugline: EXTERIOR - NIGHT. This camera almost noiselessly revels at 16,000 ISO. It goes up to 20,000 ISO. Dare I say it, but the C300 could make available night light as easy to shoot as available daylight.

Few things send more shivers down the spines of producers than rooftops, streets of San Francisco, and other dark, expensive places at night. Yet Sam Nicholson (*opposite, below*) shot from 6,400 to 16,000 ISO available light at night, augmenting scenes occasionally with iPhones, iPads, and small portable battery-powered lights.

This camera is lighter, smaller, faster and different. At about 3 pounds, the size of a medium format camera, the really big deal is the incredible beauty of scenes shot at Exposure Indexes from 320 to 20,000 ISO. While some blogerati are focusing on bits and Ks, the simple question is, "Do you want to shoot noiselessly and grain-free at 6,400 ISO and higher?" Studio production heads are taking notice of the C300 because, as one mogul told me, "EXTERIOR - NIGHT may no longer mean more expense than EXTERIOR - DAY?"

Picture this (*below*): a scene starring Chris Hurd and a wild bunch of characters on the Paramount Studio lot in flat, mid-day muddle. The daylight is dreadful. Backgrounds are washed out, the talent needs tenting and modeling. Giant overhead solids and



silks must be flown like a square-rigger sailing ship, making Pat Caputo and companions at places like The Rag Place very happy indeed. Needless to say, the production accountants are not amused by the costs of containing daylight. "How much simpler to shoot this at night," may be the new mantra.

At Canon's stellar Cinema EOS Paramount premiere on November 3, 2011, I said that motion picture cameras have been described, modestly, as boxes onto which lenses are attached. I could see Denny Clairmont wincing in the audience. "Those were the old cameras," Denny said to me over cocktails in the EXTERIOR - NIGHT New York Streets reception. "The new digital cameras are much more than boxes. The sensor is the film—the result of lots of color science. The electronics and the software are the lab. This is no longer a box. This is much more."

A long legacy of magic "boxes" consistently changed the way we shot motion pictures, especially when they were lighter, smaller, faster, and unique. Here's a great example of how technology can influence technique. The two new cameras introduced by Canon at Paramount on November 3, 4 and 5 were not so much a product launch as the harbingers of a new paradigm.

The story began over 3 years ago. Canon introduced the EOS 5D Mk II DSLR in September 2008. It was designed for photojournalists to shoot stills and put short 30 second clips onto the web. The rest is history. The 5D was embraced by Hollywood, Bollywood and by everyone else who liked the look of 24x36 mm format video images.

Canon subsequently introduced their APS-C (22.2 x 14.8 mm) EOS 7D and APS-H (28.7 x 19 mm) EOS 1D Mk IV. You could hear the machine shops worldwide chopping off the fronts and installing PL mounts—mostly in Munich at FGV Schmidle and Denz, and at Hot Rod Cameras in Hollywood.

Canon did not attack their DSLR still cameras with a Dremel or bandsaw to create the C300. This is a totally new style of 35mm digital motion picture camera. Actually there are two cameras: PL mount and Canon EF mount.

Why 2 mounts and not a neutral mount with adaptors? Canon explained that it saves on cost, complexity and ensures consistent flange focal depth. Also, remember that the EF mount has all the Canon electronics and contacts in it. The bodies are dustproof and splashproof.

Outside the Canon C300



Canon C300 with EF Mount, left. C300 with PL Mount, right. Although PL lenses are one of the worldwide standards, they pale in comparison with the 70 million EF lenses delivered so far by Canon. Guesses on quantities of PL lenses in use range from 50,000 to 100,000 worldwide.



Handgrip attaches to camera right side, with buttons for start/stop, focus magnifier, and a dial to control iris of EF mount lenses. There are 2 CF Card slots at the rear. I recommend recording simultaneously to both: that provides a "camera negative" and a "backup dailies."



ND filters inside:
 -2 stops (ND 0.6)
 -4 stops (ND 1.2)
 -6 stops (ND 1.8)

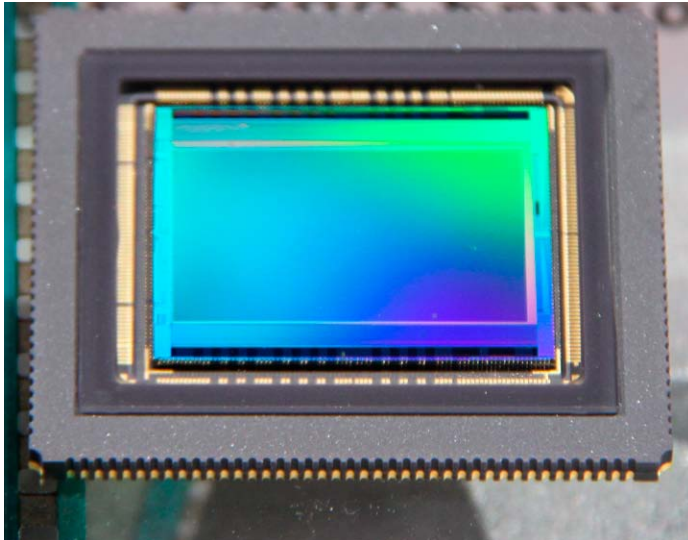


A "thumb-rest" reminiscent of a venerable Arriflex 2C protects the contacts when you're not using a handgrip.



Detachable top handle and monitor/audio unit provide multiple mounting and viewing positions. The viewfinder is incredibly sharp and you can easily focus by eye with it.

Inside the Canon C300



The C300 camera should evoke two questions. The first: “What does the image look like?” Answer: “Amazing—day or night.”

The second question is, “What does it feel like?”

The C300 feels like a medium format camera: light, small, versatile, modular. The handgrip is smart and comfortable. The center-mounted high-resolution viewfinder pulls out from the rear and tilts 60 degrees. It is superbly sharp: you can actually eye-focus clearly on its .52 inch color 1.555 million dot electronic screen.

This camera reminds me of the first Canon Scoopic 16mm camera that Bob Riger introduced to us at ABC Sports for skiing POV shots leading up to the Winter Games in Lake Placid. It had semi-automatic 100' daylight loading, and a built-in lightmeter with exposure control for speeds from 25 to 640 ASA. It weighed around 8 pounds, and the breakthrough advantage was being able to quickly load film in really cold places with bulky gloves.

We often obsess over bits, bytes and Ks in these hallowed pages, sometimes forgetting that a simple thing like working with gloves or without big rigs may be the most important consideration.

When Canon designed the C300, they wanted to keep the small form factor of the DSLRs, but to make it a true cine camera. They didn't want to lose the things that people liked about the EOS 5D, 7D, and 1D. However, DSLR filmmakers yearned for fewer video artifacts, less noise, and better controls. Canon came from an analog still camera and film background, which may explain how their scientists miraculously were able to make the camera's (very low) video noise look like film grain. It has a pleasing, cinematic look. They also managed to eliminate rolling shutter, jello effects and most moiré patterns.

There are built-in ND filters between the cover glass and the sensor to reduce up to 6 stops of exposure. These are controlled electronically, but you can move them manually in a pinch. A flat base protrudes forward under the lens to prevent tipping when the camera rests on a flat surface.

The C300 is reasonably weatherproof. Buttons have rubber boots, dials have “O” rings, and access covers have sealing flaps. Cooling is achieved with a special sheet that conducts heat from the sensor, sealed in its own dust-proof chamber, toward the heat sink. Two small, silent cooling fans move the air to vents in the body.



Above: All the right moves. C300 base with 3/8-16 and 1/4-20 tripod mounting thread, as well as standard locating holes.

Above, left: C300 CMOS sensor.

On the bottom—hurray—Canon provides a 3/8-16 and 1/4-20 tripod mounting thread along with locating holes. There are 4 start/stop switches. There are 1/4-20 sockets on top and 2 tape measure hooks. A dial controls EF lens apertures. This dial can be re-programmed and used for a different function when PL lenses are used. Menus are navigated with a Select-Set dial similar to an EOS still camera.

Assignable buttons can be used for viewfinder magnification, peaking, zebras, headphones, and taking stills. These assignable functions can be stored to an SD card.

The 4” diagonal multi-angle control panel/monitor swivels 270° forward/back, 270° left/right and is removable. It has 1.23 million dots and includes waveform, vectorscope, and edge monitor functions.

Any web browser can access the camera's HTTP server via WiFi (WFT)—so an iPad can be used to check and control camera settings. A small Liveview (476 x 268) window shows limited motion at 1 fps. On an iPhone, the Liveview is 288 x 162. With EF lenses, you can remotely focus and adjust iris with an iPad. This is helpful on cranes and remote shots.



Lenses and Specs



Canon zooms come in EF or PL mounts: CN-E14.5-60 (14.5-60 mm T2.6) and CN-E30-300 (30-300 mm T2.9-3.7).



Canon will initially introduce 3 EF mount cine-style prime lenses: 24 mm T1.5, 50 mm T1.3, 85 mm T1.3. All have 114 mm front diameters.



Canon has delivered more than 50 million Canon EOS cameras and 70 million EF lenses.

The C300 camera comes with a choice of EF or PL mount. All 70 million EF still camera lenses will fit—including Canon's tilt-shifts, macros, fisheyes, zooms, and super-telephotos.

Image Stabilization will work on any optical stabilization-equipped Canon EF or EF-S IS lens when mounted onto an EOS C300 camera with Canon EF mount. That's a huge benefit in all kinds of situations: handheld, on cranes, cars, rigs, boats, and wherever it's a bumpy ride. Image stabilization is powered through the C300's Canon mount lens contacts. Autofocus is not supported.

The C300 with Canon mount takes red dot (EF full frame 24x36mm) and white dot (EF-S APS-C). Electronics can automatically correct shading (darkening around the edges) and chromatic aberration.

At NAB 2011, Canon showed 2 new PL zooms. Now they are available in either PL (L SP) mount or EF (L S) mount: CN-E14.5-60 (14.5-60 mm T2.6) and CN-E30-300 (T2.9 from 30-240 mm; ramps to T3.7 from 240-300 mm). The zooms have a front diameter of 136 mm. Image circle is 27.5 mm coverage, which translates to 24 x 13.5 mm image area in 16:9 format.

The PL primes, 24 mm T1.5, 50 mm T1.3, and 85 mm T1.3 will be in L F (EF) mount only. They have a 114 mm front diameter. Peripheral illumination and shading can be corrected via the EF mount contacts.

Canon C300 Specs

- Exposure index from 320 – 20,000 ISO.
- Speeds down to 1 fps.
- Shoots true 24.00p (not just 23.976).
- S35 3-perf 16:9 8.3 Megapixel sensor (around 4K) – 3840 active photosites horizontal x 2160 photosites vertical. 24.6 x 13.8 mm compared with APS-C of 22.3 x 14.9 mm.
- The new C300 camera uses the same MPEG-2 codec with an MXF File Wrapper that Canon developed for their compact 3-sensor camcorder – the XF300, and XF305. This codec offers a choice of 50 Mbps 4:2:2 component, 35 Mbps 4:2:0 component, and the standard HDV format of 25 Mbps 4:2:0. Using this codec gave Canon economies of scale that allowed them to bring a very high-performance large-format single sensor camera system to market at a highly cost-effective level.
- C300 body weight: 3.15 lbs.
- Dimensions: 5.24" wide x 6.73" deep.
- Flange focal depth: 44 mm from the EF mount to the image plane.
- Powered by a 7.4v 4000 mA BP-955 XF battery, similar to the XF305, lasts about 4 hours. You don't need big external batteries.
- Dust and splash resistant like the 5D, maybe not as weatherproof as the 1D.
- Wireless remote control with iPad interface. Detachable control panel.

Practical Productions

I spoke with colleagues who shot the films shown at the Paramount screening—Richard Crudo, ASC; Sam Nicholson, ASC, President of Stargate Studios; Felix Alcalá and Larry Carroll.

The C300 presents a new paradigm: a lighter, faster, smaller motion picture camera that's evolved from Canon's experience in stills and video. All agreed that the C300 is a major step in the democratization of visual expression. It's a tool that de-mystifies the notion of creativity and offers everyone a means to express it.

I've known Richard Crudo, ASC almost forever, and always thought he was a die-hard film guy. Richard was impressed by the C300's size, weight, sensitivity, and high exposure index. It let his crew move very fast, doing 50-60 setups a day. His biggest lamp was a 2K.

Richard shot his dramatic crime drama "Dirty People" in 15 days. It was a low budget production. From the C300 camera's 1920x1080 output to CF cards, they went to DI at Technicolor and film-out onto 35mm release print. Jill Bogdanowicz did the grading.

They used the 2 new Canon zooms: 14.5-60 mm T2.6 and 30-300 mm T2.9-T3.7. Canon EF prime still lenses were fitted with gears. Red Rock Micro support and follow focus. 2 CF cards recorded simultaneously to provide an "original" and a clone. Richard shot in 16:9 format. Film-out was cropped to 1.85:1.

Richard said, "I went back to my roots of shooting fast. I could shoot at any time of day, anywhere. I thought of it as a film camera, treated it as such, used a light meter. One of the most important things was how good the DI and film-out looked. We had planned a lot of time with Jill Bogdanowicz at Technicolor, but we graded it in maybe an hour."

I asked Sam Nicholson how something so little and 4:2:2 could work so well for effects. Sam's favorite thing was the C300's sensitivity. He shot scenes at 6,400 and 16,000 ISO. He also liked the size and weight.

Sam said, "This camera changed the way we shot—with no lights or few lights. We lit the cable car scene with iPads and flashlights. We budgeted green screen with less light. This opens up a new style of shooting with more camera bodies and more creative horsepower."

Sam's sci-fi project "XXIT," screened at Paramount, had lots of night shots, with a production schedule of 5 shooting days and 10 days for post. It was a normal TV schedule. "If you can use 6 cameras, you can shoot faster, more angles, more set-ups. For example, in the cable car, I could just grab the CUs and inserts very quickly," Sam said.

Felix Alcalá (*Ghost Whisperer: The Other Side*) was the co-director/DP of "Sword."

He said, "The battery size was a great help. It's like a small consumer camcorder 7.4 volt battery, but was amazing because it lasted 4 hours. It meant we didn't need big external batteries. That saved weight, so we were smaller, lighter, better, tighter. We could take the camera anywhere, not worry about the weight. This camera is going to open up the world of filmmaking for everyone. This was the first camera I could use with little light. People liked the small size of the 5D, its dimensions, usability, and ability to go stripped down where other cameras can't go. This is even better."



Richard Crudo, ASC with C300 on "Dirty people."

Larry Carroll was also co-director/DP on "Sword." It was shot in 5 days. Larry said they pushed the envelope with this camera. They needed less light, fewer trucks, people, equipment. They rated the camera mostly at the camera's "sweet spot" of 850 EI. One shot in the Pasadena City hall garden was at 20,000—as an experiment, but it was included because it looked great. Most of the light was existing light. They used one 5K. Larry said, "The big deal is the quality of the image. It is so good. We shot 24 fps, 6 fps, 12 fps. The camera is small, lightweight. Two cameras were set up with zooms in studio mode. Two were ready to go in handheld mode."

Larry, who knows cameras (having been director/cameraman/producer at the respected Sundog Productions) said, "So many small cameras are built up with huge rigs and become too big—bigger than the big cameras they were intended to replace. Somehow the freedom of shooting gets lost. In the early days, big cameras impressed the producers, directors and stars. When you showed up with a small camera, they said, 'This can't be a real production.' That's changed."

What is the difference between the C300 and Canon's 5D, 7D, and 1D X? The DSLR cameras were designed primarily for digital still imaging—and added HD motion video. In terms of video performance, system interfaces, recording codec, and controls—they are not as sophisticated as the C300, and are comparatively less expensive.

I understand that this is just the first of many 35mm digital motion picture cameras from Canon. They were the among the first to lead the way with full 35mm still format DSLRs that also had HD video capture. Now they have introduced their first digital camera system specifically intended for 35mm cinema.

Canon is breaking new ground with this camera—bridging the styles between typical 35mm format production (features, TV drama, commercials) and sports, news, documentaries. Remember, TV and news was once shot in 35mm in the newsreel days. Autofocus and image stabilization may bring it to new levels.

Canon appears ready with a great product and willing to see where the market will take it. I think it will go far. Canon's Paramount debut was followed two weeks later by a New York event at the Museum of Natural History. The evolution of cameras continues.

C300 CMOS Image Sensor Details

by Larry Thorpe

New CMOS Image Sensor and How it Works

Central to the EOS C300 camera is a totally new Super 35mm CMOS image sensor (24.6 x 13.8 mm) with full 4K sampling. It has 4206 (H) x 2340 (V) total photosites and uses a classic Bayer color filter array for color encoding. The EOS C300 camera is specifically designed to originate high definition video according to the universal standards of 1920 (H) x 1080 (V) and 1280 (H) x 720 (V). To do this, the active photosites are confined to 3840 (H) x 2160 (V).

The image sensor design was specifically optimized to emulate, to the degree possible, the superb imaging attributes of 35mm motion picture film—that include high sharpness, excellent tonal and color reproduction, a wide exposure latitude, and high exposure index.

This image sensor completely avoids traditional debayering (demosaicing) algorithms. Rather, an innovative readout mechanism directly structures a digital four-component video set of 4 : 4 : 4 : 4 Red, Green a, Green b, Blue—each having a full 1920 (H) x 1080 (V) digital sampling lattice.

The summation of the two green video signals Ga and Gb create a kind of “super” green having the following advantages:

1. Increase effective dynamic range of the green video to 74dB.
2. Increase the effective bit depth of the green video.

3. The half-pixel offset between the two green sampling lattices (both horizontally and vertically, and in combination with the camera’s optical low pass filter), virtually eliminates green aliasing artifacts.
4. Improves the green MTF and helps eliminate moiré. Because the green video constitutes more than 70% of the matrixed Luma signal, the result is excellent image sharpness and minimized aliasing artifacts. Debayering reconstruction artifacts are avoided.

High Readout Speed and High Exposure Index

To counter the “rolling shutter” artifact inherent in many CMOS readouts, the new image sensor uses high-speed readout of the separate video components and then re-clocks each in an external frame memory to restore the desired picture capture rate. In the case of 24p, for example, the optoelectronic transformation takes place at the desired 23.98 or 24.00 frames per second, but the four separate video components are each read out at 1/60 sec—thus reducing the vertical skew by a factor of 2.5. The frame memory is then re-clocked to restore the RGB component outputs to the selected or 23.98p or 24p picture capture rate.

For interlaced 1080-line 60i, the interlace format is structured within the image sensor readout system. These 540-line fields are read out at 1/120 Sec, and then re-clocked in the subsequent frame memory to restore the 60Hz fields. Two of these fields then make up the traditional 30-frame interlaced frames.

Picture capture rate can be selected as 1080-line progressive 23.98p, 24.00p, 25p, or 30p 1080-line interlaced 60i or 50i. The alternative all-progressive 1280 (H) x 720 (V) HD production format can be selected at 23.98p, 24.00p, 25p, 30p, 50p, and 60p. The image sensor has an innovative new photosite design with very low noise and a high saturation level. The virtual elimination of troublesome fixed pattern noise produces a truly random appearance to the noise visible at high gain settings. This looks very much like film grain.

The factory-recommended exposure index rating of the camera is 640 ISO at 23.98p with a 180° shutter and 0 dB master gain. At 850 ISO the camera has a 12 stop exposure latitude using a specially designed Canon-Log transfer characteristic. The camera operates from 320 ISO up to 20,000 ISO.

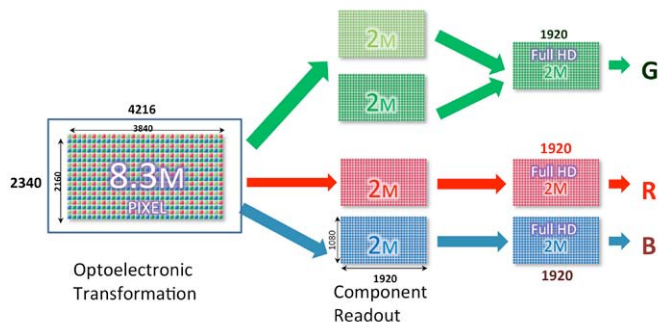
Exposure Control

Three built-in ND filters help tame exposure under the wide range of illumination this camera will encounter. A semaphore-like blade system is employed rather than a rotary wheel and this facilitates switching in a Clear filter, or a choice of 2 T-stop, 4 T-stop, or a 6 T-stop ND filter.

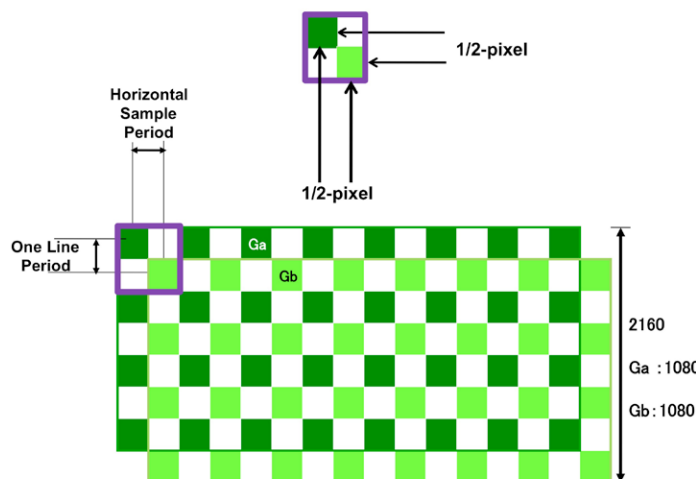
The electronic shutter provides many choices. For example, in 24p, the following shutter angles can be set: 11.25, 15, 22.5, 30, 45, 60, 72, 86.4, 90, 120, 144, 172.8, 180, 240, 288, 345.6, and 360 degrees. Slow Shutter and Clear Scan are also available.

Selectable shutter speeds for 24p range from 1/24 to 1/2000 in ¼ or ½ stop increments, as well as slow shutter of 1/3, 1/6, 1/12 for motion blur effects, and Clear Scan from 23.97 – 250.70 Hz for syncing with monitors and flickering sources.

Laurence J. Thorpe is Senior Director of Canon’s Imaging Technologies & Communications Group



Above and below: Showing the separate readouts of the RGB photosite lattices within the Bayer color filter array and the fact that the green actually constitutes two separate 1920 (H) x 1080 (V) structures



Cinema EOS Premieres in Hollywood



1. Nov 3, 2011. Canon introduced Cinema EOS at the Paramount Theatre. Teri Schwartz, Dean of UCLA School of Film and Television introduced Canon Chairman and CEO Fujio Mitarai, who discussed Canon's position in photography, film, and imaging.



2. Martin Scorsese (above) presented a history of cinema and art in 8 minutes. Jon Fauer, ASC introduced Canon Managing Director Masaya Maeda, who presented the C300, followed by a panel discussion moderated by Fauer.



3. "Leave no story untold" was the theme. Paramount's Stage 4 was fitted with wall to wall carpeting, a studio embellishment few had ever seen before. Canon paid attention to every detail showcasing the new Cinema EOS product line. As we entered, a large display highlighted Canon's history of products and provided a roadmap of where things may go.



4. After presentations in the Paramount Theatre and product demos in the stage, we headed to the New York Street backlot for champagne, cocktails and hors d'oeuvres. This is the same place where an entire industry of many companies usually convenes in June for Cine Gear. However, this evening, the New York Streets were given over to Canon.



5. Denny Clairmont at the New York Street cocktail reception, in the glow of *Clockwork Orange* style lighting.



6. Dinner followed—catered by Wolfgang Puck under a transparent tent set in Paramount Studio's tank. Multimedia displays projected Paramount film history and Canon cameras on monitors and giant walls.

Canon Collection and Future



7. Products from Canon's collection of historic products were on display at the entrance to the exhibit at Paramount.



8. Canon's RC-701 — one of the first still video cameras, mentioned in Mr. Maeda's interview, page 14.



9. The future: Canon is working on a new EOS-series digital SLR 4K camera. It will have a 35mm full-frame (24x36 mm) CMOS sensor and will record 4K 24p using Motion-JPEG compression).



10. Also on display were mockups of potential future 35mm cine zoom lenses. They were shown with EF mounts, but PL might also be an option for these small, lightweight companions to the C300 and its successors.



Cinema EOS Premieres in NY



Canon Continues Cinema Campaign in City

Less than two weeks after the dazzling debut of Cinema EOS C300 cameras at Paramount Studios in Hollywood, Canon rolled out the red carpet in front of New York's Museum of Natural History. It was the premiere of the short film "When You Find Me," produced by Ron Howard and directed by his daughter Bryce Dallas Howard.

The film was shot less than a month earlier with C300 cameras. In the reception after the screening, I reminisced with Ron Howard about my fledgling debut as a camera operator and 2nd unit DP with him on *Splash*, filmed long ago beneath the very same Blue Whale in the Hall of Ocean Life.

Ron summed up the enormity of the filmmaking paradigm shake-up in the intervening years. He said that Canon's new camera is a technology tool that demystifies and democratizes creativity. With Canon's 70 million EF lenses and 50 million EOS still cameras out there, a new journey in motion imaging is about to begin. One pundit was overheard speculating that Canon had wisely spent more on the Hollywood and New York events than most companies dream of for their entire R&D budgets.

History is on the side of Canon's choice of the American Museum of Natural History. Explorer, inventor, sculptor, and naturalist Carl Louis Gregory Akeley was curator at the museum, and invented the famous Akeley "Pancake" 35mm motion picture camera between 1914-1917.

Brian Coe wrote (*History of Movie Photography*, 1981), "The Akeley camera had its film chamber carried inside the camera, which



had a very distinctive drum shaped body. The film was carried in a single combined magazine; a cylindrical shutter ran around the inside of the cylindrical body. The telescopic finder had a most ingenious optical system which kept its eyepiece in the usual level position regardless of the tilt of the camera." The Akeley Camera had gyroscopic stabilization, and excelled at filming with long lenses in documentary situations.

Almost a century later, Canon is onto something that may again change the way films are made. Canon's events in Hollywood and New York were not typical product launches. They were image launches, welcoming a company founded with a rangefinder still camera in 1937 to a new world of digital 35mm format cinematography, and providing aspirational tools for a new generation.

Canon's Managing Director Masaya Maeda

The day after the Cinema EOS launch at Paramount Studios, Jon Fauer interviewed Mr. Masaya Maeda, Canon's Managing Director and Chief Executive of Image Communication Products Operations.

Jon Fauer: Mr. Maeda, I think I heard you say yesterday that you started as an engineer. Can you tell us how you began in your career?

Masaya Maeda: I first came to Los Angeles in '84. The Olympics were held in Los Angeles that year. And I brought the first Canon still video camcorder. At the time, we were working with a newspaper called Yomiuri. And we came together, tested the system, and ended up delivering 50 color electronic files back to Japan. I believe that was the first step for Canon into electronic cameras. It was 380,000 pixels at that time. I think it still used floppy disks. It feels like destiny to have, 27 years later, an 8.3 million pixel camera and to be doing this in Los Angeles.

Can you tell us a little more about how the first seeds of this idea were planted at Canon for this camera, when you said, "Okay, this is a good idea—let's start on this project?" The green light.

The 5D Mark II was the initial spark. At that stage, though, we were not adding movie capabilities to the Mark II for motion picture production purposes, but rather for broadcast or journalism applications. And we had figured that, from here on, it would become a very good tool for newsgathering purposes.

When I visited Canon headquarters in Tokyo, it was November, 2008. At that time, was this an idea?

We only learned about the use of the 5D Mark II for movie-making in the first half of 2009. It was after that when we decided to develop the Super 35 CMOS Sensor.

Can you take us through the design process? Let's imagine we're in the middle of 2009. The 5D Mark II is a huge success. What happens next?

We first put together a development project team. The first idea that came out of that team was to have a core mobile design. So you have the core. And that should be as small as possible. And, from there, you add or take off different accessories to match the application and the flexibility or mobility that you require.

I know that you and your team interviewed a lot of cinematographers, asking questions. I was one of them. You must have had hundreds of different opinions. Because, if you ask 100 cinematographers you will probably get 100 different ideas. How did you consolidate it into this unified design?

We took that core mobile design model. And, after working that out, we started going out, asking about the operability, the location of certain buttons, switches. And that was around the end of 2009.

What influenced your decision to go with both PL and the EF mounts? I saw that Canon has delivered 70 million EF lenses. When your team first spoke to me in 2009, I thought perhaps you were not happy with my articles in *Film and Digital Times* about machine shops (mostly in Munich) cutting off perfectly good Canon cameras' EF mounts and putting PL mounts on instead.

We, of course, understood that there was an established market for PL lenses. Many customers already have those lenses.



We wanted to be able to have them use the C300 also. So we decided to come out with a PL mount version.

Canon makes everything that goes into this camera—the sensor, electronics, software, lenses. With those resources, what's next?

We are working at today's level of technology. Each of these devices or elements has areas that need improvement. So, from here on, we will gradually, step by step, one by one, continue to improve those individual things.

We saw four clips of films shot with C300 cameras yesterday. What made them look so good coming from a camera that's smaller and lighter than anything we've seen before? Most people couldn't believe it.

I believe it's in the skill of the cinematographers and the film creators.

That's true. They did a great job. But, modesty aside, the footage could have intercut with footage from any number of high-end film or digital cameras. The thing that everybody was wondering was how can this be? What is the secret sauce that makes it possible?

In all of the films, we noticed, and the DPs noticed, the performance in the dark areas. They were aware that the camera could shoot in very minimal lighting. That was represented very well in those films. It shows off the capabilities of the camera.

Filming a Black Crow on a Moonless Night



When you were designing this camera, did you say, “Okay, we need a camera that shoots in really low light?” Was that an early important feature?

Yes, from the very beginning. But I do believe that we can still improve on our sensitivity. What we would like to truly achieve is filming a crow in the middle of the night. And maybe, some day, the black spots on the sun.

Wow. Mr. Maeda, you also said that you had to light a fire under your team in Japan. Tell us more about that.

At the time when we were developing the 5D Mark II, I realized that the world for journalism was changing. It was going through a very rapid transition, where news was on the web in both still and in video movies. So I lit a fire in order to rush them to develop these products.

Is this a similar or the same design team that got us the 5D Mark II and the XF305?

The main portion of the team comes from video, the XF305 designers. But we also had several members from the EOS camera group join this team. And, of course, from the lens group also.

That’s a good transition to talk about the lenses. Can we expect more cinema lenses?

Yes, we plan on developing more tools, more lenses that will be useful for the cinematographers and the users.

Can I ask a few difficult questions?

No difficult questions, please. Oh well, let’s try. [laughter]

There’s a lot of talk in Hollywood, now, about 4K cameras. Red has always advocated 4K. Sony is ready to deliver their 4K F65 camera. Is there a Canon roadmap for 4K?

We honestly don’t really know at this stage. But, coming out with this product, we’d like to start the feedback process with the community here in Hollywood and understand more of where to go or what the expectations of the industry are. Outside of the cinema industry, there are many Canon EOS 5D Mark II users. Particularly there are many users in the commercial production area requiring or requesting even higher resolutions. As we have

shown yesterday, the development of a new-concept DSLR with 4K is in the works.

A Canon DSLR with 4K video? How did I miss that?

It was in the showcase as you entered our exhibit on the Paramount stage. It’s still a prototype. It will record video in motion JPEG 4K.

The other tough question: if this is the first of many more cinema cameras, would Canon consider entering the “rarified” high-end, occupied by ARRI, Panavision, Sony and Red? This is the area where cameras are counted in the hundreds (or sometimes a few thousands), not in the millions that you are accustomed to manufacture. Is that something Canon is possibly interested in? Limited numbers, more expensive, very high-end?

At this point, we can’t give a definite no or yes. But we’ll continue to look at developments in the industry and determine what to do, where to go.

I saw many third-party accessories for the camera: OConnor, Steadicam, Transvideo, Manfrotto, Redrock, Zacuto, 3ality Technica, AJA, Cinedeck, ARRI...

We’ve actually been working fairly closely with other companies, including ARRI, to accommodate their accessories and systems. Of course, ARRI has accessories for the lenses. And we’d like to supply lenses for their cameras. We sort of view them, in some ways, as a partner.

You mentioned lenses. Currently, the Canon zooms come in PL and EF mounts, but the single focal-length cine prime lenses come in EF mount only. Are we going to see your cine primes coming in PL mount?

At this point, we’re not. However, the core of Canon’s technology is, of course, our optical technology. We would very much like to support the Hollywood community, and to offer new directions with our technologies.

A lot of my colleagues were saying that the color science that’s going into this camera seems to really reflect Canon’s long heritage in analog still cameras. What we saw yesterday didn’t look like video, it looked like film. Noise looked like film grain. It was very film-like. Can you comment on that?

As a newcomer to the cinema industry, we did a lot of interviews with cinematographers. And, through those interviews, we tried to understand what kind of outputs, pictures, results the filmmakers wanted. Through those discussions, this is where we’ve come. We learned, through all of the communication, that unlike our still photography, what people were looking for in the film and movie industry was not necessarily high contrast imaging, but a more natural look.

And that’s what we’ve built into the C300 here. But also, with the belief that there will be areas where high contrast is also required, we have left that as a mode within the camera, the original EOS type of contrast. We will continue to study.

Is this the “beginning of a new relationship” for Canon in Hollywood?

It was a very big success yesterday. So, thank you very much. I have done many unveilings of new products. But this has been the most exciting one that I’ve ever experienced. □

New ZEISS Cine Lenses Disclosed

Christmas came early in a conference call from Carl Zeiss on November 14th. Christian Bannert and Michael Schiehlen had my head spinning trying to guess what three new products they were going to reveal. It's very big news—a roadmap with a profusion of exciting new lenses—Anamorphics, Zooms and Primes. Carl Zeiss has an ambitious new roadmap. Here's the road sign of where they're going:



Compact tele zoom lens
length: approx. 250 mm
diameter: approx. 95 mm

Lens	Expected Focal Lengths
Compact Prime CP.2	< 18 mm >100 mm
Compact tele zoom lens	70-200 mm, ?, ?
Anamorphic prime lenses	A complete set

More Compact Prime lenses in 2012

In 2012, Carl Zeiss will add **wider** and **longer** focal lengths to their existing line of Compact Prime CP.2 lenses. The current ZEISS Compact Prime Lens set consists of 9 lenses.

Last year they had some delays fulfilling orders on time. Production has been ramped up even more and ZEISS can ship from stock. With better availability of the product, they decided it was time to expand the line with more choices for cinematographers.

Michael Schiehlen said, “Many customers asked us for wider and longer lenses. Making movies with small, versatile cameras with good image quality is established—we see it in the numbers.”

The philosophy remains the same: the new lenses will maintain full still camera format coverage of 24x36 mm (43 mm image diagonal). This follows the strategy of providing the most flexibility for use with almost any present or future camera.

Compact Prime lenses are now a well-accepted product, and Carl Zeiss wants to continue the success story. It began a mere one and a half years ago, with the idea of cine lenses having interchangeable mounts and full frame coverage. The lenses were an excellent match for the Canon 5D, 7D, 1D, Panasonic AF100, Sony FS100, F3, and other cameras.

The key to the success of the CP.2 lenses was how they bridged the gap from entry-level DSLRs to high-end PL mount productions. A filmmaker or startup rental house could invest in CP.2 lenses with Canon mounts. After a few jobs, some could afford an Alexa or Red, and changing to PL mounts was simple and cost effective. It was the lens for customers who wanted to use the new generation of cameras, and were empowered because of affordable, good glass. Everyone was amazed by the success of the CP.2 lenses and by how many were sold. Estimates range in the thousands. www.zeiss.com/cine/cp2

Zooms Join Compact Cine Lens Line

With the success of the Compact Prime CP.2 lenses, many people were asking for compact zooms that fit the small HD/SLR and HD cine cameras. Christian Bannert said, “We listened very carefully to the voices of our customers, and we will introduce a line of very compact and lightweight zoom lenses to complement the CP family.”

If we look at the existing range of Compact Prime lenses from 18 mm to 100 mm, what's missing? Of course, a lightweight, compact long tele zoom, just like the ones still photographers have been enjoying for years. My guess is that the first zoom lens will be somewhere around 70-200 mm. We'll probably find out at NAB 2012. The tele zoom should be the first in a family of compact and lightweight zooms from Carl Zeiss.

The new compact zoom lens will cover full still format 24x36 mm, just like the CP.2 family—providing much more coverage than Super 35. It will be different from any existing zoom, with its interchangeable mount, compact size and light weight.

Meet the compact family: a compact zoom joins the compact primes. The new zoom will feature industry-standard geared focus, iris and zoom rings. Nobody else has a lens like this; it should be very popular. The price is promised to be attractive and competitive.

New focal lengths will be added to the current family of 9 CP.2 lenses. Shown with PL and EF mounts, below.



"We're Back in the Anamorphic Lens Business"



ZEISS anamorphic lenses will be lightweight and compact—smaller than the working prototype shown here. They will have a 2x squeeze. Do I spy a T1.5 aperture in this preliminary view?

Anamorphic Lenses from Carl Zeiss

Christian Bannert took great pleasure in asking me to guess the third surprise coming from Carl Zeiss.

An 1800 mm T1.3 lens perhaps...I had no clue.

"We're back in the Anamorphic Lens business," he said.

"Blistering Barnacles," I blurted (a screening of Steven Spielberg's wonderful widescreen *Tintin* fresh in my mind). What perfect timing: anamorphic lenses from Carl Zeiss coming to a theater near us. Every wave of 3D has historically been followed by wide screen anamorphic epics. ARRI Alexa Studio cameras are about to be delivered, with their 4:3 4-perf size sensors and anamorphic optical viewfinders. It's a match made in an extraordinary alignment of heaven and earth, cameras and optics.

It's no secret that Hollywood has had a long love affair with anamorphic. Almost every high-end director and cinematographer dreams of oval bokeh's. The anamorphic format's intangible, almost 3D-like quality comes from different horizontal and vertical focal lengths packed into one lens.

People were predicting that anamorphic would be big again because it's different, or because the high-end wants to differentiate from the others. Despite all that, there lingered uncertainty whether the market would be big enough or could afford this kind of project for a totally new set of anamorphic lenses.

I think Alexa Studio changed all that, and may be driving the market. I could imagine that Sony and Canon might follow with their own 4:3 sensors. An 8K Sony "F66" with 4:3 sensor and anamorphic lenses would be an interesting idea.

Carl Zeiss designers and engineers made working prototypes, conducted tests, and collected a lot of feedback over the course

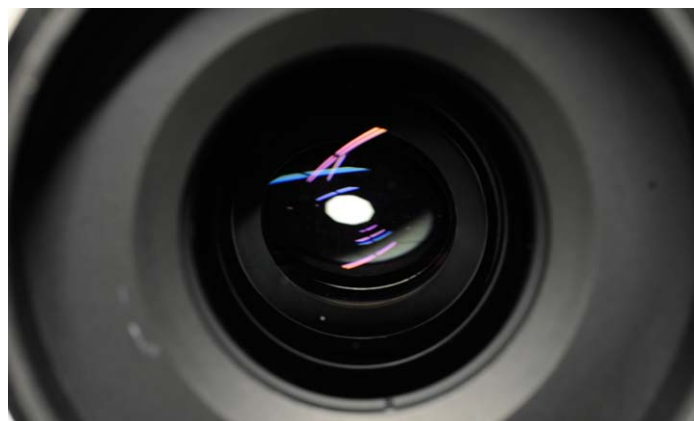
of several years to obtain a clear plan of how the new anamorphic lenses should be designed and built.

Christian said, "We have the technological benefit that we believe can produce anamorphic lenses the likes of which no one has been able to do before. Our new anamorphic lenses will be on the market very soon. We would like to announce 2:1 anamorphic lenses next year, at NAB 2012, and show real products at IBC 2012."

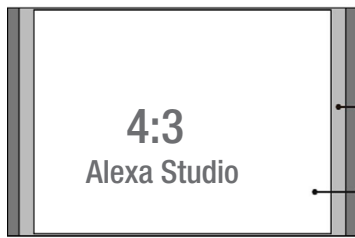
The lenses will not be 1.3x squeeze—representatives at Carl Zeiss feel the real anamorphic look comes with 2x squeeze.

Christian Bannert concluded, "This will be a complete family of anamorphic lenses, with all the focal lengths needed to shoot a movie. As experts in photographic lenses for more than 120 years, we know the specs and hurdles. We can offer something unique to the market. It will be really revolutionary."

By this time next year, holiday audiences may be watching a wave of widescreen major motion pictures shot with Carl Zeiss anamorphic lenses.



The Math of 4:3 and 16:9 Anamorphic Cinematography

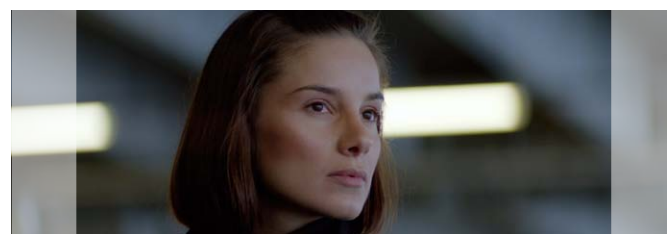
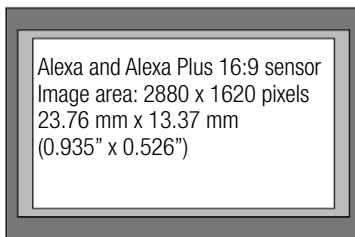
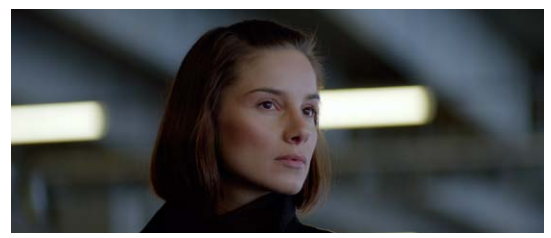
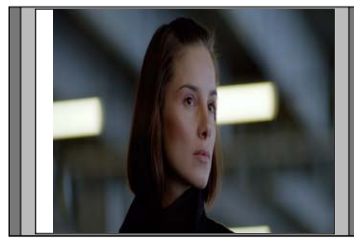
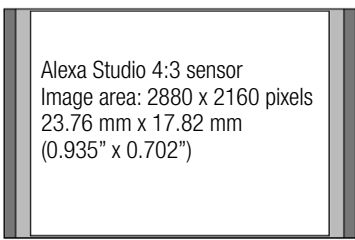


Sensor size: 3392 x 2200 pixels
27.98 mm x 18.15 mm
(1.102" x 0.715")

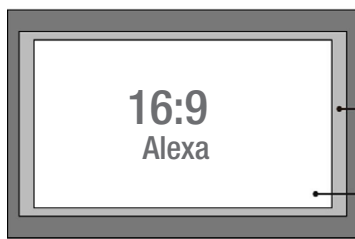
Surround view: 3168 x 2200 pixels
26.14 mm x 18.15 mm
(1.029" x 0.715")

Image area: 2880 x 2160 pixels
23.76 mm x 17.82 mm
(0.935" x 0.702")

The official SMPTE anamorphic gate is 20.96 mm x 17.53 mm (0.825" x 0.690"). This is a 1.195:1 width to height ratio. (Multiply 1.195 by 2x and you get the projected width of 2.39.) To take advantage of Alexa's 17.82 mm sensor height, you could mark your groundglass with a 21.29 mm width (17.82 mm x 1.195).



Above: Hawk V-Plus 180mm T3 2x anamorphic squeeze. Images courtesy Vantage Film.



Sensor size: 3392 x 2200 pixels
27.98 mm x 18.15 mm
(1.102" x 0.715")

Surround view: 3168 x 2200 pixels
26.14 mm x 14.70 mm
(1.029" x 0.579")

Image area: 2880 x 1620 pixels
23.76 mm x 13.37 mm
(0.935" x 0.526")

16:9 2x

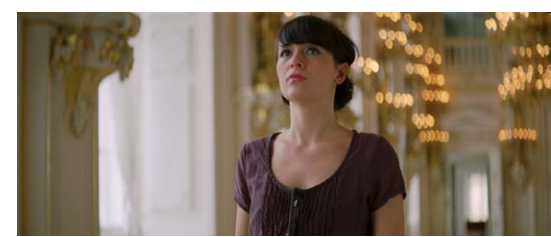
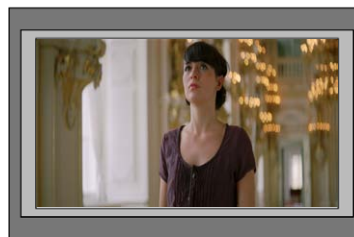
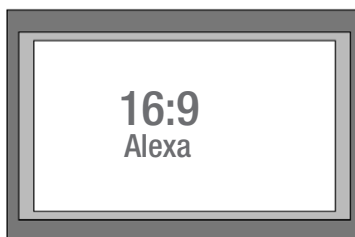
How will 16:9 sensor cameras like Sony F65, F3, FS100, Canon C300, Red Epic, Scarlet deal with 2.39:1 widescreen? Compose a 4:3 squeezed image onto the 16:9 format sensor. Your groundglass would have vertical pillars on left and right: you are using a smaller part of the sensor's image area. The picture is cropped (appears tighter) than the same image with the same lens on a 4:3 sensor camera. This has to be "blown up" more in DI or projection to fill the same size print or screen. It works—but you sacrifice resolution and familiar lens focal lengths.

16:9 Spherical...Or you can shoot with regular lenses, but some say that isn't the hallowed "anamorphic look": an almost stereoscopic sense of depth from the combination of different horizontal and vertical focal lengths in one lens, with oval bokeh and shallow depth of field.

16:9 1.3x

Hawk 1.3x anamorphic lenses from Vantage Film offer another choice by "gently" squeezing the widescreen 2.39:1 image onto a 16:9 sensor. Bokeh and look are not exactly the same as 2x squeeze, but still very pleasing. The adventure continues.

Below: Hawk V-Lite 55mm 1.3x squeeze T2.2. Image courtesy of Vantage Film.



ARRI Alexa Studio and her 4:3 Sensor



This is a big deal: as we've belabored before, ARRI Alexa Studio is the only digital motion picture camera (besides the Arriflex D-21) with the equivalent of a full-frame 4-perf gate and optical finder.

ARRI Alexa Studio was shown at IBC in Amsterdam, and made her USA debut in Hollywood on October 8. Two working Alexa Studio cameras were set up in the ASC clubhouse for hands-on scrutiny. Richard Crudo, ASC opened the festivities with an introduction, followed by words from ARRI VP Bill Russell and ARRI Managing Director Franz Kraus.

Alexa Studio is the third sister in ARRI's latest family of 35mm digital motion picture cameras. This is the one with a spinning mirror shutter, optical finder and full frame 4:3 35mm sensor. Alexa Studio can accommodate 2x anamorphic widescreen as seamlessly as Arricams or Panaflexes. (16:9 sensors require either 1.3x squeeze or cropped sides.) And sure enough, one Alexa Studio had a Panavision Anamorphic G series 75mm lens with Panavision mount. The other Studio camera had a PL mount with a Hawk Anamorphic from Clairmont Camera.

Alexa Studio's spinning mirror shutter and optical viewfinder "feels" similar to an Arricam, but it's a new design. However, many existing groundglasses and eyepiece extenders will fit.

Famous anamorphic films include *Apocalypse Now*, *Blade Runner*, *Chinatown*, the *Indiana Jones* films, *Alien*, *The Last Samurai*, and the latest *Star Trek* film.

Historically, anamorphic widescreen has followed every big wave of 3D. I think Alexa Studio will help history to be repeated again.



Above: Alexa Studio with Codex Onboard recorder at IBC.
Below: Bill Russell and Larry Parker with 75mm Panavision G Series Anamorphic.



New Primes

ARRI/ZEISS Master Prime 135 mm



Cinematographers visiting IBC 2011 saw the new 135 mm Master Prime lens. This will be the 16th lens in the ARRI/ZEISS Master Prime set.

Aperture is T1.3 to T22. Close focus is 37" (0.95 m). The front diameter is 114 mm, allowing the use of the same matte box, donuts and front accessories for all Master Primes except the 12 and 150 mm. Iris and focus rings are located at similar positions for quick lens changes.

ARRI describes this as an excellent portrait lens. An ARRI representative said, "The 135 mm focal length is sufficiently telephoto to separate the subject from its surroundings, but not so telephoto that the perspective becomes flat, allowing faces to maintain a pleasing three dimensionality. Like all other Master Primes, the 135 mm shows a high resolution, high contrast image with very low flares and veiling glare."

Cooke 135 mm Panchro/i and 135 mm 5/i



Cooke Optics showed their new 5/i 135 mm and prototype Panchro/i 135 mm prime lenses. Cooke's 5/i 135 mm T1.4 prime has the 5/i series' signature dimmable illuminated focus ring.

The Panchro 135 mm T2.8 is the smaller, lighter, lower-cost Cooke Look sibling that has become very popular on multiple-camera setups, 2nd units, and exterior productions. As digital cameras have become more sensitive, we're seeing more Panchros on all kinds of productions including 3D shoots, dim interiors and even night exteriors.

Both 135 mm Cooke lenses are color-matched to the entire line of current Cooke lenses and have built-in /i Technology which provides cinematographers, camera operators and post houses with metadata that includes lens type, focus distance, aperture, depth of field, hyperfocal distance, and focal length.

The Panchro/i has an 87 mm front diameter, and covers an image diagonal of 33.54 mm (Epic proportions: S35 and Super 35mm 4-perf.) The 5/i has a front diameter of 136 mm and covers an image diagonal of 30 mm (Super 35mm format).

Cooke Uncoated Panchro/i Primes



Cooke Panchro/i lenses are now available with uncoated front elements. They can be obtained on special order, and can be swapped with the standard coated elements by a qualified lens technician.

Uncoated front elements may help create a different, "historic" look—interesting flares, softer edges, etc.

A set of 6 Panchro lenses includes: 18, 25, 32, 50, 75, 100 mm. The 135 mm Panchro shown at IBC will be available later this year.

Cooke lenses are distributed by ZGC in North and South America.

Two New ARRI/FUJINON Alura Zooms



At IBC, ARRI showed two new lenses: the ARRI/FUJINON Alura 15.5-45 / T2.8 and Alura 30-80 / T2.8 lightweight zooms.

These 15.5-45 mm and 30-80 mm T2.8 zooms continue the line of two previous ARRI/FUJINON Alura Zooms: 18-80 mm T2.6 and 45-250 mm T2.6. These were released when the ARRI Alexa camera was introduced in 2009.

The new Alura LWZ lightweight zooms are intended for handheld and Steadicam work, while the original larger and heavier Alura Zooms were planned for tripod and dolly setups. The four zooms are color-matched.

FUJINON Premier Zoom BLT Net Holders



Fujinon Premier Series are the high-end, high-speed zooms from Fujifilm Optical Devices. An often-overlooked feature is the net and filter holder that is included with each zoom. The aluminum ring slides onto the rear element cover of the lens. This makes mounting and changing nets much faster and cleaner.

No need for “snot tape.” (Abrevs: ATG for BLT—Scotch ATG 752 dispenser of Adhesive Transfer Tape 924 for Behind Lens Net.)

If you use rear nets often (various grades of Fogal Noir are excellent), get extra net holders from your rental house or Fujifilm Optical Devices distributor.

By the way, rear nets do not change flange focal depth. Rear gels do change depth. I'm not a fan of rear gels for that reason. Furthermore, gels can warp.

Angénieux ADS/i on Optimo Zooms



Angénieux showed working models of their ADS/i lens data system at IBC. ADS/i is a small box that attaches directly to Optimo zoom lenses to provide metadata about lens parameters: focus, iris, and zoom settings. Using Cooke's open architecture /i Technology protocol, film and digital cameras can record frame-accurate metadata of essential lens information.

/i technology streamlines both production and post-production, saving time and eliminating guesswork. The /i Technology module monitors and transfers information on focus distance, depth of field, zoom position, and iris setting to monitors, memory cards, and media. It's like an automated camera report.

Here's an example of how /i helps. You're shooting a special effects scene handheld with an Optimo zoom. Not only are you handheld, but you're also zooming in and out. The effects house has to marry your live shots to background plates. With metadata (zoom, focus and iris positions), they can save hours of time compositing the background to your live action, and they won't have to guess your focal length when you zoomed.

/i Technology is available on all lightweight Optimos including the 15-40 mm, 28-76 mm and the new 45-120 mm (shown here) lenses as well as 16-42 mm and 30-80 mm Optimo DP lenses.



Interview with Angénieux's Dominique Rouchon

New York. November 11, 2011. Jon Fauer met with Dominique Rouchon, Angénieux International Sales Manager, to conduct an interview and learn some late-breaking news.

Dominique was hired 25 years ago upon graduation from university by Bernard Angénieux, son of the company's founder. He studied in France and at Georgetown University in the United States, and received degrees in business administration and journalism. He started his career in international sales with the European market, followed by Asia, the U.S., South America, and the Middle East. He knows all the territories, and all of Angénieux's partners and customers know him. As the global customer base expands in the new digital world, I'm sure his frequent flyer mileage is off the charts.

Jon Fauer: Dominique, you never did an interview. Why now?

Dominique Rouchon: I think it's an interesting time for Angénieux to speak to the professional press, because we are a traditional manufacturer coming from the (analog) film industry. Angénieux has been able to position itself nicely in the new digital cinematography world. For me, it's a way to explain where we are, where we come from, where we stand, and where we will be going in the future, in terms of products. And I want to share some news about the company.

Angénieux is in a very good situation at the moment. We went through the 2009 economic crisis pretty well because we already had a big backlog of orders. We were able to manufacture many lenses and deliver them to our customers. Since then, the company has been growing very fast. To be specific, in 2011 we doubled our production from 2010. And we expect that in 2012 we will triple our production over 2010.

Why is that?

Angénieux lenses have always been a reference for the film industry. You are a director and cinematographer, so I am sure you appreciate what Angénieux provides: quality and value. The large number of new digital cameras from different brands completely boosted our sales. I must admit that we didn't expect such a success. The lenses that we launched about two years ago, the Optimo DPs, opened the door to the new digital world and new customers, and somehow put products by Angénieux within their reach, with our skilled manufacturing, at a reasonable price.

How are you able to keep up with the production demand?

I was talking to a customer yesterday and explaining that we are lucky to be part of Thales, a big industrial group. We are not isolated. Internally, that helps us very much. We get great support from the group, who help us grow and be faster in deliveries.

Angénieux seems able to hire enough skilled workers.

I must say, again, being part of a big group helps. We keep hiring new people on a very regular basis. We have hired more than 100 new people over the past two years. And we still have a big employment program in order to cope with the demand. This ensures that we have a consistently skilled workforce with the training and savoir faire that's expected of our products. Most of the training is done internally. Our older generation passes along the know-how and the knowledge to the younger generation.

And you're working 3 shifts now?

Yes, we are working three shifts most of the time in our



workshops. We have invested massively in machine tools to be more productive, to be able to reduce our costs, and to expand our production capability. We went from being a family-owned company to a 100 percent subsidiary of Thales. I think our factory, today, is one of the most advanced optical factories in the world.

What is Thales?

Thales is a large multinational corporate group, with around 60,000 to 70,000 people worldwide in many different industries: defense, avionics, and many applications.

You were going to tell me some breaking news?

There are sometimes consequences when you are part of a group. One of the consequences is that our top management tends to change, or rotate, on a regular basis. And each new manager comes with a new mission in order to develop the company.

So, I don't know if you know, but since we were bought by Thompson CSF in 1993, we have had four Presidents. Each President had its own mission. Philippe Parain has been our President for almost six years now. And the thing that we have to say is that Philippe will be leaving Angénieux in December.

[audible gasp]

A new gentleman will be joining us. His name is Pierre Andurand. Pierre is a polytechnician coming from another Thales company. Most of his career was in the defense business. But I'm sure he will enjoy what is unique to the film industry and provide another step in the development of the company. I trust Pierre loves or will fall in love with movies and be the best supporter; I'm confident because Thales is always looking out for our best interests. So I am not worried that we will flourish with Pierre's help.

Philippe Parain loved movies. I think that was very important.

Absolutely. With Philippe we went from a time where the company had a little bit of difficulty specifying what would be the best product for the market. I must say that with Philippe we have re-centered our choices to the essentials. Philippe had a great sense of customer satisfaction. With Philippe, customer satisfaction was the number one priority, which is one of the values of the Thales Group, of course. Philippe emphasized that very much in the company, at all levels.

We had major achievements like the Academy Technical Award for the two Optimo lightweight lenses. That was a major event. We went from being a company with a good reputation to being a company with a very high reputation. And we went to the Academy Awards. We went to the film festivals in Cannes. We



Dominique Rouchon and Philippe Parain at the Institut Lumière, on the very spot where "Workers Leaving the Lumière Factory" was filmed in 1895.

are now everywhere, in many festivals and events. And always, with one single mission, which is customer satisfaction. It is the essential part of our behavior.

You're like the DP on a television series, where the crew remains while the directors are rotated from episode to episode?

That's right. I've been here for almost 25 years. It's very rare, in our world today, to stay so long in a company. However, it does happen in the film industry. We have a couple of examples, with camera manufacturers...

I'm reminded of Franz Kraus, whom I recently interviewed at ARRI. I think he has 3 more years on you.

I appreciate the comparison, and I'm very honored. Since our Presidents almost always come from the defense business, they have to learn what is different about the film business. I try to provide stability and make sure that they have enough information and appreciation of the market to make the right decisions for the company. I'm very optimistic because Philippe had a pure defense background, and he became a very big supporter of the cine lens division. Philippe really had a perfect knowledge of what is needed for the company, and what should be the strategy.

You and Philippe got involved with the AFC, the Association of French Cinematographers and the ASC, the American Society of Cinematographers. You have a new logo, a new ad campaign.

A new logo, a new image. Philippe gave us the means for production to expand. He invested a lot of money in research and development, a lot of money in sales and communication. I must say that working with him was fantastic, because he was everywhere. And he wanted us to be everywhere. We are closer to our customers. It was Philippe's decision to have a cameraman/camera assistant come into the company. Jean-Yves le Poulain

worked on more than 60 high-profile feature films and lots of commercials. He has practical experience. He's a great asset in the day-to-day discussions for future products.

Recently the company was reorganized into business units. Jacques Durand returned after a six year absence from Angénieux and is now running the business unit for film and television products. Jacques has a lot of experience with our industry. The two of us worked together for 17 years. We know each other very well.

Can we talk about the next products?

We will be presenting new products for sure at NAB 2012. We presented the 45-120 mm zoom at NAB 2011. Based on the prototype of this lens, which was shown in Las Vegas, we got an amazing amount of orders. Actually, our whole 2012 production is sold out.

We are always trying to make sure that our lenses will be able to be used on the next generation cameras. We are extremely attentive to that. And we pay great attention, because we know that for our customers an Angénieux is a real, safe investment.

We will show at NAB 2012 a version of the 17-80 mm lens, which was already announced at Cine Gear this year, to be used in the new digital cameras and cover all the formats. The focal length will be 19.5-94 mm. Our customers who have 17-80 zoom lenses will be able to have them modified. They just have to contact our international customer service department.

The heritage we have, established by Pierre Angénieux when he founded the company in 1935, is that we are at the service of the industry and a supplier making high precision tools for its artists, making sure that their life is as easy as possible in making images.

I think it's important to say that the motion picture business, more than probably any other, is based on relationships.

Absolutely. It's always amazing to realize that we do business with a handshake. The hands of the sales person or the manager of a company is the value of the contract. I know very well that, in this world, if your handshake has value, it's a contract. If your hand has no value, then you don't do business. It's a very specific behavior, I think, in our world, in the cinema business.

Your journalism background shows. Is this an exclusive?

It is an exclusive. I think *Film and Digital Times* has been a superb magazine for the market. For a few years now, I have very much appreciated the quality of what you write. It's always very neutral and very informative. I believe that it's, for me, the best place to express what Angénieux is and where we're going.

To sum it up, the Angénieux company is doing very well. We have a nice range of products. We are increasing our production in order to be able to address the high demand we have. It's time for me to apologize to all our customers, because I know that they have to wait sometimes to get their fabulous Angénieux lenses.

But this is going to change because our production is expanding very rapidly. There will be some good surprises coming in 2012 from Angénieux. We are investing to improve our relationships with our users, to get more feedback on their needs. We will conduct workshops to meet them everywhere in the world. And we will be even more on the ground than we have been. □

It's the Wand that Makes the Wizard

"Lumos!" Fire up your wands. Pour yourself a butterbeer. Curl up by the fireplace with your pet dragon and set aside an evening for delectable reading. If the 7.4 pounds of 540 coffee-table sized pages begin to feel heavy in your lap, remember to invoke the levitation incantation: "Wingardium Leviosa."

This is a fabulous book for any cinematographer's holiday reading—with everything you always wanted to know about the making of Harry Potter films. *Harry Potter: Page to Screen* is a fabulous "making-of" look into the art, technique and technology behind the films, with illustrations, explanations, interviews, notes, hundreds of photographs and on-closed-set views of cameras, equipment and crews.

About wands, "Once the look of each wand was decided, a master copy was made—which often occasioned a search for special materials. We looked for interesting pieces of precious woods, with burrs of interesting shapes," supervising modeler Pierre Bohanna explains in the wand chapter of the book.



It's the Wood that Makes the Handgrip

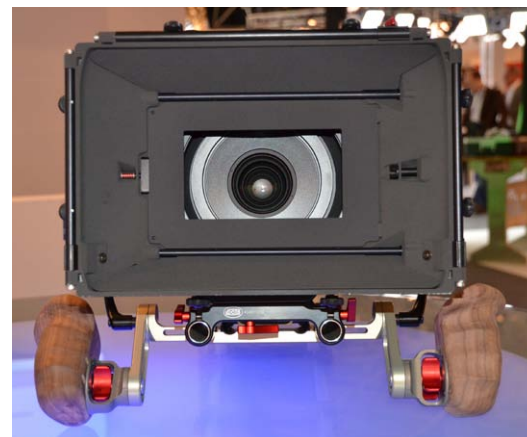


In the beginning, there was the wooden Aaton handgrip and wooden Transvideo monitor handle. Left: Aaton XTR. Right: current Penelope.

Who can forget the brothers Churchill sanding their Aaton handgrips between shots on location—customizing the wood to perfection?



The new Cam-a-lot Handgrips by Vocas are made of walnut wood from Tuscany, personally selected, crafted and hand-rubbed. Alexa handgrips attach directly to camera-right rosettes.



Without rosettes on the Sony F3, Vocas comes the rescue with wooden handgrips and brackets for rods. This picture is a good example of how much bigger and heavier the camera becomes when it lacks rosettes.



Caleb Crosby, SOC makes beautiful black walnut top carrying handles for the Sony FS100, and soon for the Canon C300 and Red cameras as well. Based on 15mm rods, they're especially versatile for mounting accessories. Check out Caleb's Shooting Machine smart camera tools. They're based in Wiscasset, Maine—not far from L.L. Bean. shootingmachine.net



PS-CAM X35 and the Hirth Tooth Rosettes



Hirth Tooth Rosettes are tongue-twisters named after engineer Hellmuth Hirth, and are the de facto industry standards for attaching handgrips and accessories directly to camera bodies.

Alfred Piffel and his colleagues at P+S Technik understand this. As we can see in the accompanying pictures from IBC, their new PS-CAM X35 is festooned with Hirth Tooth Rosettes. This is natural, of course, since Alfred and P+S Technik prospered nicely retrofitting all the things other camera manufacturers neglected to include in their original designs. Camera manufacturers continue to forget about rosettes.

All cameras should have the thoughtful design of the PS-CAM X35. It fits as comfortably on one's shoulder as it does on a tripod, remote head, or car mount. The control panel attaches easily to the camera left or right side. The X35 does not assume you are right-handed, right-eyed or right-shouldered. And it does not require a battalion of after-market rig-mongers for shooting.

The X35 is a workhorse camera that shoots both "sync sound" and motion effects at speeds of 1-450 fps: one camera for dialog, slow and fast motion, timelapse, and speed ramps.

At IBC, Yousef Linjawi presented his beautiful short film about Arabian horses, *Daughters of the Wind*, shot with the first X35.

The camera has a CMOS Super35 1920 x 1080 HD Sensor, recording HD 4:2:2 10-bit uncompressed and 4:4:4 RGB (option planned). 18 GB of internal memory stores, for example, 41 seconds at 150 fps and 12 seconds at 450 fps. There are two 3G/1.5G HD-SDI outputs. The camera weighs about 7.5 kg.

AbelCine Additions: More Space & New F3 Viewfinder



AbelCine's new New York headquarters, above and right.



AbelCine recently finished renovating their New York headquarters, complete with a cool staircase connecting two floors. AbelCine occupies more than half an acre of space at 609 Greenwich Street: 15,300 sq. ft. on the 5th floor, and 7,000 sq. ft. on the 4th floor. There are 58 employees in New York.

AbelCine's 33 employees in LA are now getting their own major expansion at 801 South Main Street in Burbank—to be ready later in 2012.

All these renovations and expansions have not slowed them down. AbelCine has developed and manufactured a professional HD electronic viewfinder system for the Sony PMW-F3 that let's you comfortably shoulder-rest a Sony F3.

The ProVFM Viewfinder Mount Kit includes all the hardware necessary to use a Sony or Panasonic 1920x1080 HD viewfinder. It attaches to a Berkey Top Mount Accessory Plate and receives its signal from the F3's VIDEO OUT port, keeping the HD-SDI and HDMI ports free for other use. When using a color viewfinder, the HD-SDI port is fed to a Blackmagic Design converter box, which outputs Component HD for the viewfinder and HD-SDI for other monitoring devices.

The viewfinder system uses a common P-Tap connection to power off any 12v source. The mount retains the viewfinder's side-to-side adjustment and adds a front-back adjustment for extra comfort. When used with a shoulder mount, the ProVFM positions the viewfinder comfortably for handheld work.

Two components make up the ProVFM Viewfinder Mount Kit. On the operator's side there is a mechanical mount, which physically attaches the EVF and allows for approximately 1" of front-to-back adjustment. Traditional left-to-right adjustment of the viewfinder is retained.

The second component is the electronics junction, which mounts to the camera-right side of the Berkey plate. The EVF plugs into the viewfinder port and there is a Lemo-7 jack on the back, which connects to the supplied cable for both video signal and power.

The ProVFM Viewfinder Mount Kit is available for:

Sony HDVF-200, HDVF-20A, HDVFC-30W (color), HDVF-C30WR (color), HDVF-C35W (color) viewfinders.

Panasonic AJ-HVF21G, AJ-HVF21KG, AJ-HVF20B, AJ-CVF100G (color) viewfinders.

Accuscene Color Viewfinder (Sony or Panasonic cables).

For more information: abelcine.com



Sony F3 decked out with KiPro recorder, accessory battery mount, ET F3 Riser and Shoulder Pad Kit, ProVFM with Sony color viewfinder and Blackmagic signal converter.

ET Riser and Shoulder Pad Kit. Pad attaches and adjusts magnetically.



AbelCine ProVFM mechanical mount for Sony F3



ARRI Alexa M



James Cameron shouldered the Alexa M / Cameron-Pace 3D rig at IBC.

ARRI Alexa M is the 4th sister in the Alexa family, with a separate camera head and body. It is intended for action and aerial sequences, remote heads, tight spots and 3D rigs. The head and body of the M are connected by a fiber optic cable, which in a hybrid form can also be used for power. The body provides various recording options like a standard Alexa: images, sound and metadata can be recorded onto SxS PRO cards or external devices. Alexa M has a PL mount.

Early prototypes of the Alexa M are being delivered to James Cameron and Vince Pace, whose 3D company Cameron-Pace Group (CPG) is currently integrating Alexa M cameras into its new compact 3D rig.

Feedback from Cameron-Pace will influence production models of Alexa M, due to go on general sale in early 2012.

Red Scarlet



Scarlet-X is a 5K still and 4K motion camera. Red's 5120 x 2700 5K still mode is close to Canon's 18 Megapixel 5,184 x 3,456 APS-C 7D and Nikon's 16.2 Megapixel 4928 x 3264 APS-C D7000. (The higher overall Megapixel specs for the Canon and Nikon take into account the taller APS-C image: APS-C aspect ratio is 3:2.)

"Scarlet is Epic's little sister," said Jim Jannard. Scarlet will share all the accessories of the Epic, including interchangeable lens mounts. It records Redcode Raw to the same SSD drives. Files work seamlessly with Redcine-X Professional, Red's processing and grading software. The sensor is the same Super 35-sized Mysterium-X sensor used in Red's other cameras.

What's the difference between Scarlet and Epic? Data rate. Scarlet has a significantly slower data rate than Epic. While still an impressive 50 MB/s (440Mb/s), available frame rates at various resolutions are limited to 12 fps at 5K (think "motor-drive" stills); 1-25 fps at 4K (4096 x 2160); 1-48 fps at 3K; 1-60 fps at 2K; 1-120 fps at 1K. The Scarlet-X will be released in two basic packages, with a choice of PL or Canon mounts. (reported by Seth Emmons)

Schneider iPhone Lens

Although I have long scoffed at cameras with ring tones, Schneider has changed my mind. When you're off scouting locations, bring along an iPro Lens System from Schneider Optics. It attaches to your iPhone 4, providing interchangeable Wide Angle and Fish-eye adapters of excellent optical quality.

The iPro Lens System is incredibly well designed. The small handgrip doubles as a lens case, neatly opening at both ends like a nesting Russian doll to reveal the Wide Angle and Fisheye lenses. The lenses have bayonet mounts to fasten onto the custom iPhone case. The handle has a 1/4-20 tripod mount, and attaches to the case on the left or right side of the iPhone.

The iPro Lens System includes two precision-polished optical glass Century lenses with multi-layer anti-reflection coatings.

The Wide Angle lens increases the iPhone's field-of-view by 35% with low distortion and high edge-to-edge sharpness. The Fisheye lens increases the field of view to 165°.

The iPro lens housings are precision machined from aluminum alloy and anodized for durability. The iPro Lens System costs less than most gifts you've checked off for the holidays, and is a lot more useful. www.iprolens.com



Data Wrangling and Codex



At IBC 2011, Codex Digital announced 60 fps Arriraw support with their Codex Onboard Recorder.

With the release of ARRI Alexa Software Upgrade Package 5.0, ARRI Alexa cameras are now able to output Arriraw at up to 60 frames per second. The Codex Arriraw Plus recorder is now able to record Arriraw at up to 60 FPS, as well as two channels (e.g. 3D) of Arriraw at up to 30 fps.

IBC was also the European debut of Codex's new Vault. It's like an on-set lab-in-a-box for dailies review, editorial copies, protection clones, and archiving for the leading digital cinema cameras.



Codex Vault

Codex Vault is a self-contained unit requiring no external drives. It uses Codex's new Transfer Drives. About the size of an iPhone, these 1TB solid state drives move files from production to post.

The Codex Vault also incorporates the Codex Virtual File System, allowing for the creation of dailies files in Avid DNxHD MXF, Apple ProRes, DPX, and OpenEXR using a unified ACES workflow. This provides an entire back-end dailies and deliverables workflow for almost any production.

In addition to ARRI and Red, IBC also saw Codex collaboration with Aaton and P+S Technik.

The Aaton Delta Penelope camera has a Super 35mm (3-perf size) Dalsa CCD sensor and will record uncompressed Raw files compliant with the CinemaDNG format onto its internal DeltaPack. These Aaton DeltaPacks can then be inserted into a Codex Vault and the files will be automatically archived to LTO-5 backup and Codex Transfer Drives for delivery to the post house.



P+S Technik showed their new PS-CAM X35 with Codex Onboard Recorder at IBC, with a Codex Transfer Station for Mac OS X. Of course, PS-Cam X35/Codex Datapacks can also be used with the Vault. Codex supports PS-RAW and uncompressed recording.



Avid Media Composer version 6 (just released on November 3) now offers Avid DNxHD 444 codec, which preserves excellent color information in Alexa footage while still having a low bit-rate codec suitable for editorial.

ARRI Alexa cameras will soon record native Avid DNxHD as MXF files in-camera on SxS cards.

The downloadable Alexa Software Update Packet 6.0 (due January 2012) will enable Avid DNxHD codec data rates of up to 145Mbit/s (8-bit) and 220Mbit/s (10-bit) to be supported in the initial release. Avid's highest quality version of the codec, Avid DNxHD 444, will record at 440Mbit/s at 10-bit depth and will be provided as a free upgrade during the first quarter of 2012.

Here's an example of how Codex and Alexa SxS cards might be used in tandem on a major feature production.

Record simultaneously: Arriraw to Codex Onboard Recorder Datapacks, and DNxHD to Alexa's internal SxS cards. The Codex "magazine" (Solid State Datapack) is cloned on set. The "magazine" with its "digital negative" is sent to the "lab" (post house) for "processing" (downloading) and "dailies."

The Alexa's onboard SxS card is kept on set as a backup. Because it is now in DNxHD, an Avid editor on set can quickly do rough assemblies—no need to wait for transcoding or re-wrapping. The SxS card also becomes a backup until word comes from the post house that all is well with the ARRIRAW footage. Worst case scenario (and those scenarios lurk in our nightmares—the messenger quit and dropped the Codex Transfer Drives in a dumpster), the SxS card footage can be used instead of a re-shoot.

Aaton Delta Penelope



Experimental handgrip with zoom control for new Angenieux Optimo 45-120 mm T2.8 lightweight zoom.



Martine Bianco had news for us at IBC. She said, “After NAB we realized that everything was moving to digital much faster than we expected. I think that a lot of dreamers had interest in our hybrid 35mm film/digital camera, because it would make them feel comfortable still being able to shoot both 35mm and also digital. This is what most people were asking for, especially producers and cinematographers. However, we came to the conclusion that they could own or rent existing 35mm cameras like Penelope 35mm. We had to face a new reality and make the move to pure digital for a number of reasons.

“If we stayed with a hybrid camera, the market would be much too small. We couldn’t really sell something that would be more expensive. Technically, it was a good idea to be able to switch from analog to digital with the same camera. But there were some risks. Maintenance would have been difficult. With the sensor being right in front of the aperture plate, a little dust or scratch could ruin an entire scene.

“We decided to redesign completely, drop the hybrid idea, and make a separate digital Penelope. Of course, we kept the same sensor, because we think it’s a good one. It’s a redesign in terms of not being hybrid.

“The new camera is even more ergonomic now, because we could make it shorter. With a purely digital camera, we don’t have to stick to the film body. We now have a larger display. And it still looks like an Aaton. The cat on the shoulder.

“But we do not want it to be another digital camera, another video camera. We still want to keep the film look. We think we have achieved this. Digital Penelope records full rez 4K uncompressed images with wide dynamic range to on-board DeltaPacks. These can be used with the Codex Transfer Station and Vault. Most people are equipped with the Codex. It’s very popular. You do not need the Codex to record on the camera, which makes it light. We have on-board recording to our DeltaPacks.

“To make backups on the set, you can use the Codex or you can use our product: we call it the ergon station. The ergon is a computer with three DeltaDock bays that gives you the possibility of debayering and backing up, in real-time, your DeltaPacks.

“We think cinematographers will continue to use our 35mm analog Penelopes for a long time. 2-perf and 3-perf is very popular in India and Europe. Shooting in 35mm will last. But investing in a new 35mm camera is another story. They can use the existing cameras. There are plenty.

“Since we redesigned everything, we are six months later than we expected. We thought we would be ready end of this year. We think we’ll be ready in the middle of next year. We plan to do testing with DPs in January. And have it ready for NAB 2012.”

Specs

The only optical viewfinder digital camera with internal full rez recorder • simultaneous recording of uncompressed RAW and edit-ready proxies • noiseless air cooling in both record and pause (<19dB) • lightweight: 7.5 kilos with internal recorder and batteries • cat on the shoulder profile, plus wide flat base for tripod • extra-wide dynamic range Super35 Dalsa CCD sensor, 100 and 800 ISO • RAW files under CinemaDNG, the Adobe archival format.

Sony F3



Shown above and opposite page: Chrosziel's F3 tripod and handheld mounting system for Sony F3 camera and SR-R1 Recorder.

Sony's F3 camera got lots of attention at IBC. As a small, practical camera system for 3D production, Sony F3 3D Link options are now available. Setup of the main camera can be copied to the other and lens controls are synchronized on the new Sony 18-252 mm zoom, shown here.

We tested the new 18-252 mm T3.8 FZ mount (F3 proprietary mount) zoom a few weeks ago. Electronic contacts in the F3 camera mount "talk" to the lens, power the optical image stabilization, handle metadata and provide built-in zoom control via the F3's handgrip rocker switch. The shallow (approx 18 mm) flange focal depth of the F3 makes smaller, lighter lenses like this possible—opening new possibilities for image stabilization and auto functions previously enjoyed only in prosumer systems.



Chrosziel Support for Sony F3



Chrosziel developed the Sony F3 and R1 Mount in close cooperation with Sony. It's an elegant way to attach Sony's camera and SR-R1 Memory Recorder onboard. The R1 Mount attaches to the support rods sticking out behind the camera.

There are two versions of the Chrosziel R1 Mount.

Model 401-R115 accepts 15mm support rods.

Model 401-R119 is made for 19mm rods on bridge plates or quick-lock plates.

Chrosziel's R1 Mount lets you configure the Memory Recorder onto the camera in numerous permutations. It connects to a double-sided Hirth Toothed Rosette (standard handgrip rosette size) mounted onto a sliding rod bracket. It mounts in "low mode" (picture above) when you want a low center of gravity for

handheld shooting. "High mode" is used when you need clear space below the support rods, for example, when mounting on a geared head. No additional tools are necessary to remove the base plate and the recorder from the camera.



Chrosziel handgrips



Chrosziel SR-R1 low mode bracket

SRMemory



When you're using Sony's SR-R1 Memory Recorder with the F3 camera, you will be recording to SRMemory cards. These are the same ones used in the SR-R4 of the big brother, F65. However, because of the lower write-speed of the F3, you can save money by using S15 or S25 cards. (F65 uses S55 cards.)

The Sony SRMemory cards line-up now consists of six cards:

- SR-256 S15 with a capacity of 256GB and a guaranteed write speed of 1.5Gbps

- SR-512 S25 and SR-1T S25 with capacities of 512GB & 1TB and a guaranteed write speed of 2.5Gbps
- SR-256 S55, SR-512 S55 and SR-1T S55 with capacities of 256GB, 512GB and 1TB and a guaranteed write speed of 5.5Gbps

All cards have a data read speed of 5.5Gbps.

Sony F65



It was the best lit booth in the history of IBC (top left). Sony wisely hired British Cinematographer Steve Lawes to show off the Sony F65's capabilities with an interior living room set illuminated by a single source 18K coming through the camera-right window. There was lots of contrast, the way it was meant to be—instead of the customary flat ring of fire that can be measured with a thermometer, not a light meter. Light levels were varied by a dimming system to skillfully demonstrate the F65's abilities from full, bright daylight to darkest moody interior.

On September 6, a mere 3 days before the opening of IBC in Amsterdam, Sony announced F65 prices and details in LA at the American Society of Cinematographers and Directors Guild of America. The pricing was so aggressive that Hollywood players figured they could buy an F65 and still have money left over for a Maserati Quattroporte. News traveled quickly to Amsterdam, where there were wistful dreams of package deals consisting of a F65 fully loaded in the trunk of a new Porsche Panamera.

The F65 shoots and records HD, 2K and 4K resolution (4096 x 2160). Its 8K CMOS image sensor (approximately 20 total megapixels) has an active image area of 24.7 x 13.1 mm (image diagonal 28 mm) and 16-bit linear Raw file output capability.

Sony first announced the F65 at the NAB 2011 show in April. It is expected to ship in January 2012. F65 now has:

- 14 stops High Dynamic Range with much wider color gamut.
- ISO 800 “factory” default — but tests looked good at 1600.

- Rotary shutter model (F65RS) to reduce motion artifacts; 4 ND filters built-in with rotary shutter.
- Wi-Fi operation for remote control from tablet devices, including the Android-based Sony Tablet S and Apple iPad (top right).
- HD-SDI output with viewing LUT for on-set monitoring.
- 60 Minutes of 16-bit Linear Raw file recording onto a 1TB SRMemory card at 24 fps.

The dockable SR-R4 SRMemory recorder attaches directly to the camera and records onto SRMemory cards of 256 GB, 512 GB or 1TB capacity with data security and sustained throughput of 5.5 Gbps. An SRMemory card is about the size of an iPhone.

Sony has already installed more than 9,000 4K projectors in cinemas worldwide. Alec Shapiro, Senior Vice President of Sony's Professional Solutions of America group pointed out that Sony 4K projectors are driving digital cinema in movie theaters and creating demand for 4K content, and the F65 will be part of the “4K sensor to screen experience.”

At IBC, we were treated to practical 4K workflow demonstrations. Sony announced that partners implementing their Raw workflow will include: Adobe Premiere Pro, AJA, Apple Final Cut Pro, ASSIMILATE, Avid's Media Composer, Blackmagic Design, Da Vinci Resolve, Colorfront, Deluxe, Digital Film Tree, EFILM, FilmLight, Fotokem nextLAB, The Foundry, Image Systems' Nucoda, Light Iron, Sony Vegas Pro, The Pixel Farm, Quantel, and YoYotta.

Iain Neil at Leica Historical Society



JF, Iain Neil, Rolf Fricke (President Emeritus LHSA), Andreas Kaufmann (Managing Director ACM Projektentwicklung). www.lhsa.org

Prof. Iain Neil is chief optical designer of the new Leica Summilux-C cine lenses. He is also well known for consulting globally with optical technology companies. Iain was formerly Executive Vice President of Research & Development and Chief Technical Officer at Panavision. He has numerous worldwide optically related patents, has published and edited more than 30 papers and books, and received 11 Technical Academy Awards. Iain is a member of SPIE, SMPTE, Optical Society of America, the ASC, and AMPAS.

At the annual meeting of the Leica Historical Society on October 15, Iain gave a presentation on Summilux-C lenses. Here are excerpts:

We recognized early on that digital cameras with single chip sensors were going to become quite important in terms of the optics because you have to satisfy certain technical requirements. They are not the same as film. With a film camera, you have a piece of film. And in front of it you have a lens. The lens produces an image on the film. With an electronic sensor, you usually have a low pass or some kind of filter, like a glass plate or crystal plate sitting between the sensor and the lens.

There's also a micro lens array on the sensor. It's like a tiny lens over each pixel. These optical and other sensor characteristics have mainly to do with specific optical aberration correction, which don't exist with film. They actually have a pretty serious impact on the optical design and what you need to do to make the lenses work best with those kinds of sensors.

So we placed a lot of emphasis on optimization of lens design to work not only with film but also with these new requirements for digital sensors. We had to make some projections and estimates of what would happen with future electronic sensors. Film tended to be a slow moving capture medium in terms of technology, whereas electronic sensors tend to change quite rapidly. Unlike cameras, cine lenses usually have a life of 10, even maybe 20 years.

Some years ago, Andreas Kaufmann, Christian Skrein, Otto Nemenz, a few others, and I met in Salzburg and decided what would be the base parameters. In other words, before writing a detailed target specification of what the lenses should do, it was more about the key parameters. We came up with several wishes—including light weight, small size, and a fast aperture.

We also went for slightly greater than full 35mm cine frame. Full cine frame is about 28, 29 mm diagonal, depending which standard you read. We went for at least 32 mm. This is about two-thirds of a still frame. We went a little bit larger because the sensor technology is changing. Some cameras have larger sensors. One

of the problems with that is suddenly many lenses don't cover the format. So we just went a little bit on the large size for safety. We made a prediction that this might be useful to have.

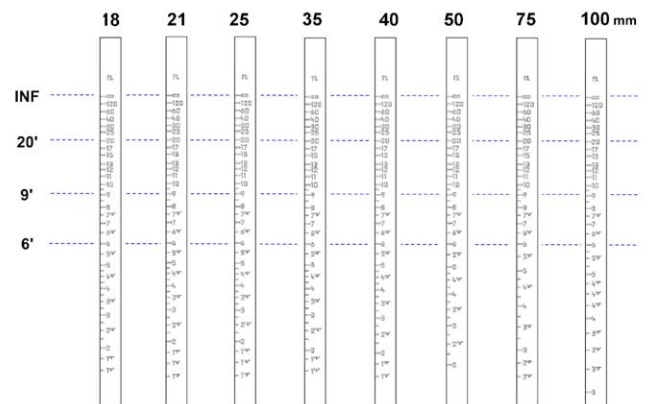
Leica Summilux-C lenses are motion picture lenses with specifications never seen before. They use multiple aspheric elements. Some tolerances are down in single digit microns. We're approaching the realm of the wavelength of light.

We wanted high contrast and we wanted high resolution—ready for the next generation of 4K, 6K cameras and beyond.

We wanted the lenses to be easy for the camera assistants to handle. The idea is that many cine lenses tend to be quite large, heavy, and you need two hands just to lift the lens. And if you are trying to put it on a camera, you may need two hands to put the lens on the camera. But you need like a third hand or maybe you can lift your foot up just to lock the lens lock. So if you can lift up a lens with one hand, put it on a camera, and then use the other hand to basically lock the lens lock—it seems almost obvious.

Leica Summilux-C lenses have high resolution, extremely high contrast, and almost no chromatic aberration over the full image. We have high relative illumination. That's important for digital sensors because if you have light falling off towards the corner of the picture, that will show up as shading. Film is much more forgiving. You can maybe lose about two or three stops of light. You could be T2 on axis and you could be maybe T8 at the corner of the picture with film and you may not see shading in the image. But with an electronic sensor, and it doesn't matter which kind, you could have T2 on axis but you preferably don't want to go past about T2.4 at the corner of the picture. Also, you want a gradual fall-off in illumination from center to corner of the picture, not a cliff-like fall-off as in many previously designed lenses. The terminology I use for that is high relative illumination.

We have a patent issued for a small diameter focus scale. Every mark in every lens is individually calibrated and engraved. But the challenge with a small diameter lens is that you can end up with all the marks being very crowded together, which means it can be difficult to focus. We actually went for a novel feature—which is to have almost an identical, consistent focus mark spacing from six feet to infinity. That's usually the main region of use in motion pictures, six feet to infinity (roughly just under two meters to infinity). We decided to make all the lenses have the same scale, the same length of scale and the same circumference of the lens with the same marks in the main region of use. This was the first time that this had actually been done in a whole series of lenses.



Interview with Leica's Andreas Kaufmann



I first met Dr. Andreas Kaufmann at the Pacific Palisades home of Otto Nemenz two years ago. “We have an interesting story to tell you,” Otto said, as Santa Monica Bay glistened in glorious magic hour light. “It’s about Leica cine lenses.”

The saga involved several degrees of separation that began more than 30 years ago, with Otto and his good friend Christian Skrein dreaming of Leica lenses for high-end 35mm motion picture production. The degrees of separation get even closer: Otto was my predecessor as camera assistant for cinematographer Herbert Raditschnig, and Christian Skrein was director/producer on some of those productions.

Jump cut to December 2005. Christian Skrein met with Andreas Kaufmann, and said, “I have a concept and a friend in Hollywood, Otto Nemenz. He and I have had a dream for many years”

Later that evening, Otto received a phone call from Christian. “Otto, we have our dream.”

Otto said, “Leica Cine lenses? How is that possible?”

Christian replied, “We know the new owner of Leica.”

I stayed in touch with that owner, Andreas Kaufmann, as the Leica Summilux-C lenses were developed and introduced. At the annual International Leica Society meeting, I did an informal interview.

Jon Fauer: What is the background to your investing in Leica?

Andreas Kaufmann: Formerly, our family owned the biggest paper, pulp and packaging company in Austria. We owned this for 101 years. Otto Nemenz’s father was a sales representative for one of the pulp companies we owned. Our family started selling part of the companies in the 1990s because we realized it was much too CAPEX (Capital Expenditure) intensive.

But, I had a strong belief, and our family history shows it, that you can’t influence stock markets, but you can create value in companies. Stock markets are like a casino. I presented an idea to my brothers. If you have the right strategy, a little bit of luck and a good management team, you can turn companies into a value creation engine. That was the theory.

So we set up ACM. The name comes from my two brothers and me. Nowadays we call it Austrian Capital Management because my brothers are not involved anymore. We set this up in 2002 as a new entity to buy into new industries to try to create some wealth out of what we had.

ACM bought its first company in the Wetzlar region in 2002: Weller Feinwerktechnik, which we still own today.

I heard you started out as a teacher? How did that happen?

I studied German Literature, Political Science, History and Linguistics at the University of Stuttgart. I graduated, wrote my thesis, and became a history teacher at a Waldorf-Rudolf Steiner school from 1983-1998.

Why did you do that?

Quite simple. My school life took place during the late 1960s and through the 70s. I was heavily influenced by the ’68 movement. When I finished school, my goal was to revolutionize the world. I had to abide by the decision of my family that none of us could go into the management of the family company. So, I was totally free and studying was...well you had to study something.

In the late 1970s I belonged to the group of founders of the German Green Party—the first ever. I was still studying. In 1983, after I thought I had finished my thesis (although that took longer), I started teaching because for me, school was a kind of reforming element. It was a Rudolf Steiner school and you could change things. The school was responsible for its own finances, because in Europe most other schools are usually run by the state. But this was private.

Is that how you learned about business?

Partly. On the other hand, since 1987, I was introduced into the wealth management of my family. From 1991 on, I was on some of the boards of our capital management companies, on the board of our Cayman financing company and the board of our North America real estate company—so I had a dual life. On-the-job training. I didn’t know much about management then and I’m still learning.

How did you acquire Leica?

I moved to Salzburg, Austria in 2002. In that year, I came up with the concept of ACM Projektentwicklung (Project Development) GmbH, Salzburg. We looked at several investment scenarios.

One thought was what would happen if we re-entered the pulp-paper-packing industry via Sweden—which my brother later did. He manages that now on his own.

We invested in a precision machining company, Weller-Feinwerktechnik because it had always been profitable, and they wanted to sell in 2002. That was the first time we were in Wetzlar. My co-managing director was Wolfgang Kisselbach. His father, Theo Kisselbach, was the key guy in the Leitz factory for development and marketing. This gave us a sort of connection with the Leitz environment. In 2003 we bought Via Optik and decided we’d do something in the optical industry. In 2007 we set up CW Sonderoptik to develop Summilux-C Cine Lenses.

The key step was when we met with Leica in August 2004 and decided that ACM would acquire 27.4% of Leica. We figured we would study the company for one year. But then, how do the Americans say... “Oh boy, were we wrong.” Suddenly everything collapsed at Leica. Management, financing, etc.

By 2005 it was a mess. My two other brothers, C and M, said, “What did you do with our money?”

I said, "I still believe we have the right strategy. We entered rather inexpensively and were able to get through the refinancing of additional shares at reasonable rates. With the right strategy and the right management, in the end we will create more value than what it is today."

My brothers said, "You lost our money—in what kind of mess did you get us..." And so on.

I guess they were not happy.

It can happen in any family. So I said, "I'm responsible for it, I'll take it." And that was the start of dividing our shares of ACM.

Were you interested in photography or Leica cameras before?

I learned how to take pictures like a good German boy when I received my first camera. When I was young, I got a camera from a photo store along with specific instructions on exactly how to take the pictures: for example, cloudy bright is f/8 at 1/125th second exposure. It was a very weird camera. I still have it today. It was a Penti from Pentacon Optische Werke in Dresden. It was produced in the German Democratic Republic (East Germany) with an awful lens. But I learned to shoot.

In my last year at university, I had a girlfriend who was enrolled in a 3-year program as a photographer's apprentice. She was into photography, definitely. And this is a fascinating story. In the second year of her apprenticeship, she came home and showed me a camera. She held it carefully and said in a reverential tone, "Look what I've got."

I said, "Well...it looks like a camera."

And she said, "No, no...look carefully at what I have here."

I said, "It's still a camera."

"Not exactly. It's a Leica."

I said, "So what?"

She looked at me, probably thinking, what kind of nincompoop is this?

She had bought her Leica camera with the money she had saved and I reacted like a fool. Half a year later, our relationship was over. I never forgot the name "Leica."

I came back to cameras via the digital world. In 1999 I bought my first digital Canon. I bought it at a Staples in Massachusetts. That told a story in itself, because formerly you went to a specialized photo dealer. Now you could go to a big box office supply store. At this time I was doing a website for one of the companies I had invested in. Now it was suddenly so easy to shoot a picture, edit it and whoosh—upload it. That's how I came back to photography.

In 2004 we bought into Leica. In 2005 we had this family crisis and we cut our inheritance in thirds...

This must have been stressful.

I've never been scared in my life. Being scared doesn't help. I don't think I was stressed. I was under pressure, but when I'm under pressure I take half a day off and think about strategy. This usually works.

In 2005 you could definitely have said that I was under stress but I was focused on what had to be done. It was a tricky situation because I think our chairman of the Leica supervisory board

didn't understand much about digital and didn't consider it. He had been running Leica since 1996. He was a great guy, but he loved analog photography. Maybe he also really liked Leica's campaign at Photokina 'I am a film dinosaur.' So I thought it was time to replace him and reorganize management.

Our team worked continuously on various projects. After presenting the digital Leica M8 in 2006, we were able to show a complete new product roadmap in 2009—and this was the key element of our success nowadays. In the last year we financed everything from our cash flow and paid back our loans.

Sounds like you're enjoying this.

I'm already thinking of the strategy for the next 3-4 years. We cannot do it alone. We now have a partner, but we are still the majority. We are committed. I call this Stage 2, the roll-out of Leica as a worldwide brand, because we're not available in a lot of markets. We're not available in parts of Russia, Emirates, India, we only have 1 store in Latin America, and so on.

We are planning a concept called Super Store. The slogan is, "Where the picture comes alive." And we'll show more than cameras. The idea is to have 10 to 12 Super Stores worldwide. It will have exhibition space, a studio, it will be the next step.

We will break ground in 2012 for a new building to move Leica back to Wetzlar from Solms. It will be in Leitz Park, next to our other companies. □

Leica and Blackstone

On October 19, 2011 Leica's largest shareholder, ACM Projektentwicklung, Salzburg, and The Blackstone Group announced that Blackstone will become a strategic investor in Leica Camera AG with a minority stake of 44 per cent. ACM, with Dr. Andreas Kaufmann as its owner, will continue to hold the majority of Leica shares.

What does this mean for photographers, cinematographers and practitioners of digital dark arts? Capital and commitment in high-end imaging. Here are excerpts of the official announcement:

The strategic partnership involves investment funds advised by Blackstone to acquire, indirectly through a holding company, a 44% minority stake in Leica Camera AG to support Leica's international growth plans.

Headquartered in Solms, Germany, with 1,150 employees, Leica is one of the few remaining German camera companies. Leica combines hand-crafted quality with a dedication to precision mechanics and outstanding optics. Leica now plans to expand the business into new markets. Blackstone is seen as the right partner.

Leica Camera AG finished its 2010/2011 financial year with record sales of € 248.8 million. This was an increase of 57.2 % over the previous year (€ 158.2 m). EBIT (Earning Before Interest and Taxes) increased by almost six times: from € 7.4 m in 2009/2010 to € 41.6m. The sales increase is attributed mainly to the strong demand for the two camera systems, Leica M and Leica S.

Leica Camera AG is located in Solms, with a second production site in Vila Nova de Famalicão, Portugal. The company is active in 54 markets internationally and operates branches in England, France, Japan, Singapore, Switzerland, South Korea and the USA. www.leica-camera.com

OConnor Baseplate, O-Focus, Legs

OConnor
Universal
Camera
Baseplate



Universal Camera Baseplate

OConnor introduced the OConnor Universal Camera Baseplate at IBC. It mates small and medium size digital cine cameras to standard professional accessories. The Universal Baseplate centers the optical axis of the lens to the correct rod height and width. It works with standard studio 15 or 19mm bridgeplates and lightweight 15mm supports.

The Universal Baseplate uses 3-way camera screws. They can be tightened by hand, with a tool through the drill holes, or by inserting a slotted screwdriver through a unique flip-up bottom plate access panel.



O-Focus Dual Mini (DM)

The OConnor O-Focus Dual Mini is a low profile, double-sided follow focus with a direct drive gear mechanism optimized for use with still photo lenses. It works equally well with cine lenses (CP.2 above). Engaging the gear to the lens is done with a sliding dovetail. The gear ratio is 1:1.75; meaning that for every 360° of handwheel rotation, the driver gear rotates 270°. This gives the camera assistant a longer range on short throw photography lenses. A new hard-stop handwheel lets you set minimum and maximum focus distances for lenses with infinite rotation.

30L Carbon Fiber Tripod

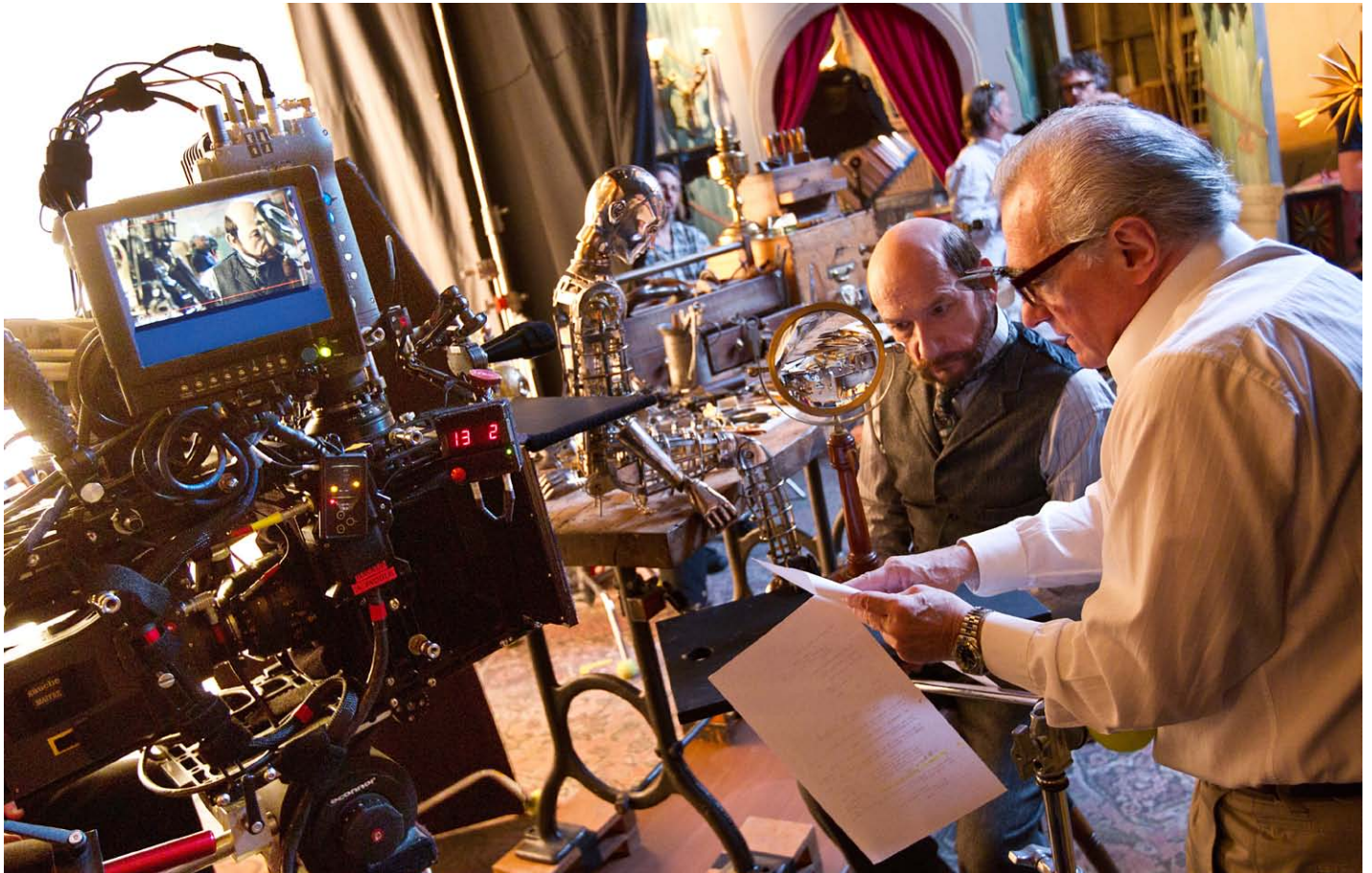
OConnor's 30L Carbon Fiber Tripod replaces the 25L & 35L lines of tripods for the new generation of new Ultimate 1030D & 1030Ds Fluid Heads.

It weighs a mere 8.8 lbs (4 kg). The 30L's double extension design can safely carry payloads up to 209 lbs (95 kg) even at its maximum height of 63.4" (161 cm). It folds down to a meager 29.5" (75 cm) — small enough to fit in the back of your Smartcar.

The quick clamping system is equally smart—it's easy to see whether the levers are locked. The legs have an integral spreader system and removable rubber feet for the spikes.



Hugo's Hardware Store



"Hugo" was directed by Martin Scorsese, with cinematography by Robert Richardson, ASC.

Making "Hugo" involved a hardware store of camera equipment and accessories. It was the first 3D feature film to use ARRI Alexas, with Cameron-Pace 3D mirror rigs, and the first to use all three sets of Cooke lenses: 5/i, S4/i, and Panchro/i.

Gregor Tavenner, 1st Camera Assistant on the production said, "The Cooke 5/i illuminated focus scales were low on my list when I first saw them. But guess what. This was a perfect application for it. Two lenses inside a dark and crowded 3D rig, no way a Maglite—or two Maglites—would get in." The little box with 3 LED lights on it, above the red label "BACKUP A PADDLE," is a Cooke /i illuminated focus scale dimmer.

Other gear in picture above: two Transvideo CineMonitorHD8 Monitors, Cinematography Electronics Cine Tape Measure, Preston Cinema Systems MDR, OConnor 120EX head.

Why two monitors? Gregor explained, "I purchased an 8" HD Transvideo monitor which appears in numerous photos. Pace then bought another, and they were both mounted to the 3D rig. These monitors were chosen for their superior image quality, still my favorite. We used two monitors for two reasons: QC check for focus puller—so I can see both cameras to check focus and image quality. Also, so many creative conversations and decisions happen right at camera—so why not a monitor on each side? I have done this on 2D as well and it just helps everybody."

Martin Scorsese said, "The first time images started to move, people immediately wanted color, sound, a big screen, and depth. And that's just what we're doing now."

Above: Ben Kingsley (center as Georges Méliès) confers with director/producer Martin Scorsese (far right) on the set of "Hugo," from Paramount Pictures and GK Films.

Below: Director/Producer Martin Scorsese in front of 3D camera rig. Photo credits: Jaap Buitendijk. Report by Seth Emmons and Jon Fauer.



Tiffen Dfx 3.0.5



Original image: Mont Saint-Michel



Glimmerglass 5



Dfx Rays



Halo 4

Tiffen has updated Dfx Digital Filter Suite with Dfx v3.0.5 update —free to existing Dfx v3.0 users and downloadable from the Tiffen website. www.tiffensoftware.com

Tiffen Dfx v3.0.5 update includes the following new features:

- Support for Avid 64-bit editing systems: Media Composer v6, Symphony v6, and NewsCutter v10.
- Support for Sony Cameras: Sony DSLR-A550, Sony DSLR-A580, Sony DSLR-A700, Sony DSLR-A850, Sony DSLR-A900, Sony NEX-3, Sony NEX-5, Sony NEX-5N, Sony NEX-C3, Sony SLT-A33, Sony SLT-A35, Sony SLT-A55V, Sony SLT-A65V, SonySLT-A77V, Sony XCD-SX910CR, STV680 VGA.
- Dfx Paint Mask tool with new blur controls gives more control over blending and transitioning in effects and filters.
- New adjustable brush slider covers large areas; brush coverage can scale up to 50% of the screen.

I tried out some of the new effects with images taken on a trip to Mont Saint-Michel with Jacques Delacoux. **Dfx Rays** provide a realistic pre-viz view of the scene if we'd been allowed to add smoke to the interior and could somehow have managed to place a giant Condor cherry-picker outside with an Arrimax 18K.

Never mind the mud below and the precipitous several hundred feet of slippery stone walls. In the examples above, we used **Halo** to retain the highlights while darkening the scene. **Glimmerglass** adds a romantic glow.

The Tiffen Dfx digital filter suite is like a truckload of filters in your computer. It helps cinematographers, photographers, art directors, and VFX artists to pre-viz, play with, and post using digital filters that can simulate more than 2,000 Tiffen glass filters, specialized lenses, optical lab processes, film grain, color correction, and effects.



Tiffen Variable ND



There are two kinds of filters: those you need and those you choose.

You need ND (Neutral Density) filters to control the light. They are essential. Many digital cameras have them built in. Some don't.

Tiffen's 77mm Variable Neutral Density Filter provides 2-8 stops of light control. This is a must-have for cameras without built-in ND filters. It's an essential tool to control depth of field and exposure. It also saves time. You don't have to fumble around changing individual filters.

There's an index mark on the filter for consistent repeatability.

The filter material is laminated between two pieces of optical glass that are ground flat to tolerances of a ten-thousandth of an inch (2.54 microns).

Dial-In Filtration lets you choose from 2-8 stops of neutral density.

The more ND you add, the more you can decrease depth of field (meaning backgrounds will be more out of focus) by letting you shoot at wider apertures. In other words, wider apertures help separate subjects from their background.

Above all, ND filters let you decrease the effective ISO of your camera's sensor. For example, ARRI Alexa, Sony F65, Sony F3, have sweet spots of 800 ISO. That's a lot of sensitivity when you're shooting in bright sunlight. In film days, you'd likely be shooting at 50 ISO with an ND0.6 filter.

Tiffen's Variable ND filter comes in a 9mm thin black aluminum filter ring with a 77mm screw-in thread. It attaches directly to various lenses with Tiffen adapter rings (does not require mattebox).

Sony's NEX-FS100 does not have built-in ND filters. Sony's E18-200mm F3.5-6.3 OSS zoom lens (SEL18200 kit lens for NEX-FS100) has a filter diameter of 67mm. To mount the Tiffen Variable ND, get a Tiffen 67mm-77mm Step Up Filter Ring.



Micro Scorpio Head



The Micro Scorpio Head is Servicevision's smallest remote head. It weighs 6 kg (13 lbs) and can handle a payload up to 12 kg (27 lbs) in its smallest configuration. Adding an additional cage brings the payload capacity up to 25 kg (56 lbs).

The Micro Scorpio has a modular design, enabling the camera to be top-mounted, under-slung, or configured in many positions.

The camera operator's control has a joystick and accessories for pan bar and hand wheels. One unit is configurable three ways. The Micro Head is compatible with the rest of the Scorpio's product line, and can be controlled wirelessly.

New interchangeable crane mounts facilitate attaching the Micro Scorpio Head, camera and lens to various cranes, including the Jimmy Jib, the ABC, Felix, and others.

Compared to the Scorpio Classic and Mini Scorpio Head, Servicevision simplified the Micro's mechanics by using cables instead of HD slip rings. The motors are the same as the ones in the Mini Scorpio Head, allowing faster and smoother moves. Micro Scorpio can be controlled up to 500 meters by cables or by wireless half-duplex microwave 2.4GHz. All variables (Pan, Tilt, Focus, Iris, and Zoom using the Scorpio Focus) are programmable and repeatable. www.servicevision.es

Movcam Tech



16x9 Inc. has signed an agreement with Movcam Tech to be the exclusive distributor of Movcam camera accessories in the United States. China-based Movcam has recently expanded into standard camera accessories, some designed specifically for the Sony PMW-F3.

“What first caught our eye with Movcam,” said 16x9 Vice President, Jeff Giordano, “was their high quality...and their interest in creating new and innovative products, which is what 16x9 Inc. is always looking for.”

Movcam’s current accessories include follow focus devices and matteboxes. For the Sony F3, Movcam developed baseplates with 15mm rod support and an integrated shoulder pad, a top mount and handle to provide stability and more mounting points, all connected with side handles and an accessible cage around the camera. 16x9 Inc. will be working closely with Movcam in the next few years to design and develop even more products. www.16x9inc.com

16x9 Inc. Cine Base



Here’s the 16x9 Inc. Cine Base M15 for Sony NXCAM FS100 with 16x19 Inc. PL to Sony E-mount adapter and support holding a Leica Summilux-C 100 mm prime lens.

The Cine Base M15 solves the business of balance with a 9-inch long dovetail slide plate and a simple support plate that can be repositioned with the flick of a quick release lever. 16x9 Inc.’s system incorporates 15 mm lightweight support rods front and back for mounting matteboxes and other cine accessories, and not just as ballast to keep the camera upright.

It’s designed for compact cameras to quickly keep balance when adding and subtracting accessories. (e.g. change lenses, swap batteries, reposition monitors).

The same system can be used with various cameras (Sony PMW-F3, NEX-FS100, Panasonic AF100 and HDSRs) by simply changing the spacer plate. Includes two 12” and two 8” 15mm lightweight support rods, which can be connected as two full 20” rods. The slide plate can mount directly to ARRI-style bridge plates like the BP-3/BP-8 systems when using heavier lenses.

3 New Leica Summilux-C Primes



Three additional focal length Leicas were “leaked” at IBC as prototype models.

The new Summilux-C 16, 29, and 65 mm primes are planned to be introduced at NAB 2012.

This brings the set to eleven: 16, 18, 21, 25, 29, 35, 40, 50, 65, 75, and 100 mm.

They all have a maximum aperture of T1.4. All are 142 mm long from front to flange, have 95 mm front diameters, weigh 1.6 – 1.8 kg, have uniform expanded focus scales and rear net holders.

PL lens mounts are titanium.

www.bandpro.com/leica



Kodak Vision3 50D

Kodak Vision3 50D joins Vision3 500T, 250D, 200T.

Just as we were about to go to press, Kodak announced 50D/5203 at Camerimage on December 1st. Promising to be the finest grain 35mm camera negative, this raises the bar yet again. 50D will be useful on films with day exteriors. There's also a lot of talk about shooting day exteriors on film with 5203 and night exteriors on a digital camera—the marriage to be consummated in the DI Suite.

With grain almost gone, the superb color and fine detail of new Kodak Vision3 50D/5203 shows that film is still very much alive.

www.kodak.com/go/50d

iDC SYSTEM ONE for C300 & 1D X

Fearless Gearless Follow Focus. While we were feverishly writing this issue, Dorn, Dutra and the folks at iDC Photo Video have been busy designing and machining new enhancements for their famous SYSTEM ONE. For fluid heads with quick release platforms that are based on the popular Manfrotto 501-style QR plates, iDC SYSTEM ONE will be compatible with Canon's new EOS-1D X and C300—available in early 2012. Well balanced, gearless follow focus, affordable, made in USA, SYSTEM ONE is easily updated as new cameras come out.



Right: 1D X shown with SYSTEM ONE, 6 inch UniRail and the SYSTEM ONE Accessory Mounting Bracket-Kit B

Left: Canon C300 with SYSTEM ONE, 16 inch UniRail with Two Wheels, on a 70-200mm lens.



Cartoni Maxima

Cartoni's Maxima head was everywhere at IBC. Maxima works with any camera weight—from 0 to 85 lbs (39 kg). It's just as smooth with a lightweight DSLR as with an Arricam, Sony F65, 3D rig, or Alexa fully loaded with the heaviest zoom. Maxima has outstanding counterbalance at any angle, from +90° to -90°.

The continuous fluid drag is smooth—from almost freewheeling to very tight. The pan and tilt locks on the left side can be operated with one hand. The fluid knobs are placed left and right of the pan base. They are soft and quick to turn, even with gloves.

The top plate accepts all standard sliding bases and baseplates—ARRI, OConnor, Red—and the standard camera plate has a lateral quick release system. An optional plate incorporates the European Touch 'n Go system. Maxima fits all existing flat Mitchell standard mounts (lockable with a central knob or a classic 8" castle nut). A 150mm ball adapter is also available.

Sachtler Ace Fluid Head



Light, flexible, synchronized, compact. Of course, we're talking about the new Sachtler Ace tripod system premiered at IBC. I'm sure the throngs of video and DSLR filmmakers were attracted by the new tripod—or could it have been the thematically synchronized display of synchronized moves by the Ace twin gymnasts?

With a payload of up to 4 kilograms (8.8 pounds), Sachtler Ace is a compact, durable and extremely lightweight tripod system. A completely new patented drag system, SA Drag (Synchronised Actuated Drag), was developed. It provides familiar Sachtler accuracy and repeatability at an astonishing price/performance ratio. There are 3 vertical and 3 horizontal grades of drag (as well as "0" freewheeling). Counterbalance adjusts from 0 to 4 kilograms (0 to 8.8 lbs) in 5 steps and a "0" no-resistance setting. Tilt is +90° to -75°. www.sachtler-ace.com



Manfrotto



I always wanted to see a camera backpack that doesn't ask me to strap an expensive carbon fiber tripod on the outside like an ice-axe. It's too easy to ding, and takes forever to un-strap when you need it in a hurry.

I was delighted to see Manfrotto's new Veloce VII backpack at Photo Plus Expo in New York this November. The Veloce VII comfortably carries your tripod inside, along with camera gear, 17" laptop, lenses, fluid head, and accessories. There's a bottom compartment for more equipment, lunch or extra clothing.

Veloce is part of Manfrotto's Stile Collection—a line of bags, pouches and backpacks that are designed for easy camera access with good protection. Very stylish, the Stile line is available in black, bungee cord brown, and star white.



Veloce VII backpack

Style doesn't end with bags. Manfrotto introduced the new Lino line, named after company founder Lino Manfrotto. Lino bags and apparel are practical, look cool, and add a continental sartorial flair to a category previously dominated by original Abercrombie & Fitch or Hunting World bush jackets and Teddy Roosevelt era fashions. Black is a nice alternative to khaki, and the reinforced shoulder fabric makes carrying heavy tripods almost a pleasure.

The Lino line includes Pro Backpacks, Pro Messenger bags, Pro Roller, Lens pouches, Camera pouches, Pro Field Jackets (with two front pockets and reinforced shoulders), Pro Wind Jacket (lightweight, water-repellent nylon), Pro Photo Vest (with two front pockets and reinforced shoulders), and Pro Soft Shell Jackets in Polartec (for all conditions).



dedolight

A new dedolight 4.0 was hanging in Dedo's booth at IBC. It has a 40 watt LED, daylight or tungsten—there's also a bicolor version.

The front diameter of the fixture is the same as classic and 200 series dedolights, so most accessories still fit. (New projection attachments provide more precision.) The dedolight 4.0 uses a new power supply. The CRI of the dedolight 4.0 tungsten LED is 90; the daylight LED is close to 90.

There is one large aspherical front lens in front and one small lens on the LED chip. Dimming does not change color temperature much. The radiator fins on the back of the fixture get hot but keep the focusing ring absolutely cool to the touch all the time. In future production models, the metal housing will be black and the focusing ring will be yellow.



Ronford

Jeff Lawrence, Managing Director of Ronford-Baker, demonstrated this clever hand-held simulator at IBC.

It's a ball and socket sandwiched between top and bottom quick release plates. Add it to the top of your geared or fluid head, and it takes the weight off your arms while allowing you to move the camera in documentary-style abandon.

www.ronfordbaker.co.uk

Images of IBC 2011





Andrew Laszlo, ASC 1926-2011



Andrew Laszlo, ASC passed away in Bozeman, Montana on October 7th after a brief illness. He was at home with his family. He was 85.

His career as a cinematographer began in the golden age of television on *The Ed Sullivan Show*, *The Naked City*, and *The Phil Silvers Show*. With more than 80 credits over a 40 year career, Andy worked with Francis Ford Coppola, Walter Hill, William Friedkin, Arthur Hiller, and top directors on productions around the world. These include: *The Night They Raided Minsky's*, *The Out of Towners*, *Lovers and Other Strangers*, *The Owl and the Pussycat*, *The Warriors*, *Southern Comfort*, *First Blood*, *Streets of Fire*, *Innerspace*, *Newsies*, and *Shogun*. He was a member of The International Photographers Guild, The Directors Guild of America, The American Society of Cinematographers, The Motion Picture Academy, and served two terms as a Governor of The National Academy of Television Arts and Sciences.

Andy was a mentor and great friend. He taught an entire generation of cinematographers, traveling the world, conducting seminars, and training aspiring cinematographers as part of Eastman Kodak's Student Filmmaker Program. Andy visited Dartmouth College when I was a student there. His scheduled one-hour lecture lasted two days. Andy had the gift of storytelling. He was always loquacious, and always an inspiration. Several anecdotes show how a mentor can change one's life.

After graduating, I called Andy and asked if I could show him my senior thesis film project. Years later, Andy admitted to me that he rarely expected much from student projects. But something clicked, and he encouraged me to pursue a career in film. I got work. We stayed in touch. Several years later, he hired me on *Top of the Hill*. That assignment led to a long run of jobs together and a lifetime of friendship.

Andy got his start in the film business with a broom. In *Cinematographer Style*, he explains, "When I started in the business, the only equipment I was trusted with was a broom, because I went through an apprentice system in Hungary at a time when there were no film schools. I was fortunate to get a job at one of the motion picture studios, and was given a broom."

This was immediately after WWII. Hungary, and its film industry, was in shambles. Andy left Hungary (illegally and at great peril) and made his way to pursue a new life in the United States.

Andy continues, "The greatest break of my life came when I was the first person from New York City to be drafted by the army for the Korean War. I wound up in the U.S. Army motion picture

school, which was wonderful. We not only had all the equipment, the school insisted we shoot 35mm motion picture film, day-in and day-out, thousands of feet and, of course, doing is the greatest way of learning. When I came out of the army it was a little bit rough. I was a young fellow, trying to enter the industry. I tried absolutely everything to get work. I couldn't even get past secretaries. At one point, I sent out résumés on shirt cardboard so they couldn't crumple it up and toss it in the wastebasket. The breaks finally came."

Andy was a champion of the crew. He did not tolerate inconsideration or iniquities. Crews loved him for this and his light-hearted demeanor. On a particularly difficult production, Andy learned that his crew had not fully received its promised per diem. We were almost ready to roll cameras when he told the crew to put away cameras that had taken hours to set up and get into position.

"My crew has not received their agreed-upon meal-money," Andy told the production staff. Needless to say, the situation was rectified immediately and the day's work completed as scheduled.

Andy loved the happy accidents and imperfections provided by location filming. It was my job as camera operator to point out a prop that might be out of place or a painting hanging out of level. But Andy loved these little touches of reality. "If it's too perfect, it looks like we're shooting in a studio," he would say.

Andy had style. He said, "You read the script and images begin to form in your imagination and in your vision. Techniques and tools come into play — lenses, film stocks, filters, focal lengths, all kinds of things that an individual artist may come up with and say, 'This is what I feel; this is what I'll do to enhance the image so it will serve the story best, as depicted in the script.'"

"Ideas sometimes come from experience, sometimes come from inspiration, and sometimes just happen. The things that just happen may be just as important."

Andy delighted in challenging locations and was well-known for using his creativity to work around the most difficult obstacles. He was also famous for the unconventional. He lit entire scenes with a flaming gas-soaked torch on *First Blood*. Andy tented in the entire back lot of Universal Studios to shoot night during daylight on *Streets of Fire* and then proceeded to use an assistant's lens light to add a glimmer to an actor's eyes. Andy loved his craft and would often say, "If it looks good, shoot it."

After retiring in 1994, Andy pursued his hobbies of fly fishing, inventing, woodworking, and machining. He also wrote prolifically, publishing 4 novels, 3 books about his career in film, and an autobiography. *Banjin* is set in 19th century Japan. *The Seven Graces of God* is the 20th century story of a boy who arrives penniless in America. *Every Frame a Rembrandt* gets its title from the Cinematographer's goal of making every "set up" a work of art.

It's a Wrap (ASC Press) chronicles Andy's adventures in the film world, describing a secret trip to Havana with Ed Sullivan to film Fidel Castro as he took power during the Cuban Revolution, the Beatles' landmark Shea Stadium concert, and the cultural challenges of a 9-month shoot in Japan filming *Shogun*.

For a beloved cinematographer, humanitarian, writer, inventor, craftsman, and caring friend, it is with the deepest sorrow that we must say, "It's a wrap."

BSC Show & Micro Salon

BSC Show

We'll be in London for the **BSC Show 2012** in the George Lucas Stage at Elstree Film and Television Studios, UK on February 3 and 4, 2012.

Held over two days, the BSC Show is the premier event in the UK for anyone interested or involved in the art of cinematography and the equipment, services, and facilities used high-end film and television production.

Featuring Cameras, Lighting, Motion Control, Rigging, Broadcast Equipment, Grip, Cranes, and a vast array of exhibits, attendees will see some of the latest product launches from the world's leading manufacturers and suppliers as well as networking functions and educational opportunities.

Rob Saunders of SCS Exhibitions Ltd. (co-organiser of the event) said, "It has been two years now since the last BSC event and we are anticipating a sold-out show and our highest attendance yet. The BSC Show is a unique event, as it is the only UK show that is completely targeted to this sector and combined with a studio location."

Information for exhibitor or visitors: www.bsceexpo.com

AFC Micro Salon

A week later, we'll be in Paris for the annual **AFC Micro Salon** on Feb. 10 (10 am - 8 pm) and Feb. 11 (10 am - 5 pm), 2012. This is one of the best shows of the year; the entire French film industry is usually in attendance, the drinks are great, the food is superb.

AFC Micro Salon will be at the usual location: La Femis Film School, in the former Pathé Film Studios of Montmartre.

The address is 6 rue Francœur, Paris 18e, France.

For more information: www.afcinema.com

The Imago Annual General Assembly of European Cinematographers will also take place during Micro Salon. If you're a producer, don't try to schedule production on Feb 10 or 11—everyone will be at Micro Salon.



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FILM AND DIGITAL TIMES

Art, Technique and Technology

Film and Digital Times is the journal and guide to technique and technology, tools and how-tos for Cinematographers, Photographers, Directors, Producers, Studio Chieftains, Camera Assistants, Camera Operators, Grips, Gaffers, Crews, Rental Houses, and Manufacturers.

It's written, edited, and published by Jon Fauer, ASC, an award-winning Cinematographer, Director, and author of 14 bestselling books (over 120,000 in print—famous for their user-friendly way of explaining things as if you were right there on location with him). With inside-the-industry "secrets-of-the-pros" information, *Film and Digital Times* is delivered to you by subscription or invitation, online or on paper. We don't take ads and are supported by readers and sponsors.

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