

Jon Fauer, ASC


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Apr-Jun 2017

Double Issue 81-82

FILM DIGITAL TIMES

Art, Technique, and Technology in Motion Picture Production Worldwide



Woman with a Basket of Flowers
Pierre-August Renoir, 1895
Woodone Museum of Art, Japan
(reformatted to fit this cover from
original 127.3 x 40 cm oil on canvas)

FILM AND DIGITAL TIMES

Art, Technique and Technology

Film and Digital Times is the guide to technique and technology, tools and how-tos for Cinematographers, Photographers, Directors, Producers, Studio Executives, 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 and Director. He is the author of 14 bestselling books—over 120,000 in print—famous for their user-friendly way of explaining things. 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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Contents: Apr-Jun 2017 Double Issue 81-82 for NAB & Cine Gear

Cover - Renoir at the Birth of Cinema	4-5	Sony News for NAB 2017, FS5 Firmware 4.0, HDR.....	83
ARRI ALEXA SXT W	6	Panasonic VariCam AU-XP3, Firmware, ROP	84
ARRI Wireless Video System beyond SXT W.....	7	Randy Wedick on VariCam LT	85
ARRI WVS Accessories	8	RED Digital Cinema Factory Visit	86-89
Starlite ARRI-WVS for Alexa SXT W	8	Cooke S7/i Full Frame Plus.....	90
ALEXA Mini SUP5 and Studio Accessories	9	Cooke Panchro/i Classic	91
ARRI Mini Studio Accessories	10	Cooke Factory Tour 2017	92-94
ARRI SkyPanel Effects	10	Cooke 45-450 T4.5 Anamorphic Zoom	95
ARRI Look Library	11	Angénieux Optimo Style 48-130 T3.0	96
Canon Compact Servo Zooms	12	Angénieux Optimo Style Lenses	97
New Canon 70-200 Zoom: EF, AF, AE, IS.....	13-17	Kees Van Oostrum, ASC on Zooms	98-99
Canon C700 with Compact Servo Zooms.....	18	Angénieux Type EZ NAB Debut	100
Canon Compact Servo Zoom Specs	19	Servicevision Scorpio Anamorphics, Head, 0.8 WA.....	101
Canon Compact Servo Zoom Dimensions	20	Scorpio and Angenieux Ana, Alexa Mini, Easyrig	104
Leica Thalia: Playing with Light	21-22	Gecko-Cam Large Format Projector	104
Leica Thalia: Playing in the Sand.....	23	Hawk 65 Anamorphic Lenses	104
Thalia Divas.....	24-25	Panavision Primo 70 Lenses.....	105
The Making of...Thalia Divas.....	26	Ultra Panavision 70 Anamorphic Lenses	105
Leica Thalia on Alexa 65 by Darius Khondji, ASC, AFC	27	Camera Lens Mount Chart by I/BE Optics	106
Leica Thalia in Jardin d'hiver	28	Sensor Size Comparisons	107
Leica Thalia Decisive Moments	29	Macro VV T2.9 Raptor lenses for Large Format	108
Christian Skrein on Leica Format and Large Format	30	Kino Flo.....	109
Thalia Specifications	31	Mole Variable-Color LED Fresnels	110
FUJINON MK 18-55 T2.9 Cine Zoom Lens	32-33	Preston DM5 Digital Motor.....	110
Fujinon MK 18-55 T2.9 and 50-135 T2.9 Zooms	34-36	VER Camera	111
Fujifilm Omiya Headquarters	37	Teradek Bolt for RED, Link, Serv, VUer	112-113
Fujifilm MK Zooms and GFX Medium Format	38	Anton/Bauer Li-ion Battery Discharger.....	114
Sendai.....	39	Litepanels.....	115
Fujifilm Taiwa Factory.....	40	Matthews Double Ears and Elevator	116
Building Fujinon MK 18-55 Zooms	41	SmallHD	116
Prepping Fujinon MK 18-55 Assembly	42	Wooden Camera	117
MK 18-55 Barrel and Sub Assemblies.....	43	Paralinx Tomahawk2	117
Final Assembly MK 18-55	44	Chrosziel	118
MK 18-55 Final QC, Packing and Shipping	45	LEE Filters	118
Fujifilm X-T2 Manufacturing at Taiwa Factory	46	Rosco Silks.....	119
Fujifilm GFX Camera and FX Lens Mfg at Taiwa	47	Easyrig Updates	119
GFX final assembly.....	48	DMG Lumière Maxi	120
FUJIFILM GFX 50S Camera System.....	49	Orca Bags	120
FUJIFILM X-T2 Mirrorless APS-C Camera System	50	SHAPE REVOLT VCT Baseplate	121
Matsushima.....	51	Manfrotto Nitrotech N8.....	121
The Next Shot is in the Glass	52	Cinetech Italiana	122
Blackmagic Design URSA Mini Pro	53-55	Schneider Full Frame Cine-Tilt.....	123
Blackmagic URSA Mini 4.6K Quick Start.....	56-63	RHodium FSND Filters.....	123
Blackmagic Video Assist 4K.....	64	DENZ FDC-Multi Mounts.....	124
Blackmagic Video Assist 4K Touchscreen	65	Bright Tangerine Revolvr Follow Focus	124
Blackmagic URSA Mini 4.6K Controls	66	Tiffen NATURAL ND Filters	125
Data Wrangling with DaVinci Resolve	67	Lowel Lights	125
Blackmagic Resolve Mini and Micro Panels	68	Lenser.....	125
Cartoni	69	Cinescope Leica R Lenses	125
ZEISS CP.3 Full Frame Primes	70-75		
Ambient Recording Lens Data.....	76		
Pomfort LiveGrade Pro	76		
ARRI PCA Accessories.....	77		
ARRI WCU-4	77		
SIGMA FF High Speed Prime Line	78-79		
SIGMA Headquarters.....	80		
Sigma Cine Lens Specs.....	81		
Sony DVF-EL200 EVF, AXS-AR1 Readers	82		



Cover - Renoir at the Birth of Cinema



Pierre-Auguste Renoir completed *Woman with a Basket of Flowers* in 1895. In the same year, 1895, cinema was “born.”

On December 28, 1895, ten short films by Auguste and Louis Lumière were projected on a screen in the Salon Indien at the Hotel Scribe in Paris. These were the first motion pictures viewed by a paying audience in France. The show cost 1 Franc per person. It was not an immediate success. Only 33 people arrived. However, word spread quickly and the rest is history.

The following year, cameramen working for the Lumières travelled around the world to shoot short documentaries. In 1896, Katsutaro Inabata, a former classmate of Auguste Lumière, purchased a Cinematographe camera, 50 rolls of unexposed film, and secured exclusive rights for Japan. He returned to Kyoto in 1897 with Constant Girel, a Lumière cameraman/projectionist.

Renoir cinema connections abound. Pierre-Auguste Renoir’s son Jean became a film director, screenwriter, actor, producer and author. He directed more than 40 films. His masterpieces include *Grand Illusion*, *Rule of the Game*, *A Day in the Country*, and *Boudu saved from Drowning*. The British Film Institute ranked Jean Renoir as the fourth greatest director of all time.

Pierre-Auguste Renoir’s grandson Claude Renoir was a prominent French cinematographer, with credits that include *The River*, *The Horsemen*, and the James Bond film *The Spy who Love Me*.

Why is a Renoir on the cover of this FDTimes edition? It began this February, driving to the Fujifilm factory in Taiwa, Japan. Along the way, a poster outside Sendai’s Miyagi Museum of Art tempted: “Image of Color: Pierre August Renoir.” A spectacularly comprehensive Renoir retrospective paraded within. Really? Renoir in Japan?

There are numerous museums in Japan with major Impressionist collections. When Japan opened to international trade in the 1860s Meiji era, a fascination with “Japonism” and Ukiyoe woodcut paintings influenced European artists—including Monet, Manet, Van Gogh, and Renoir. Remember, Monet designed his Giverny garden, lily pond and arched bridge in a Japanese style and collected hundreds of Ukiyoe prints.

In a similar way, Japan’s love for Impressionism is connected to the exchange of ideas and culture that followed Meiji era economic growth and trade. Western art, and particularly Impressionism, was introduced to Japan by art dealer Tadamas Hayashi and artist Seiki Kuroda.

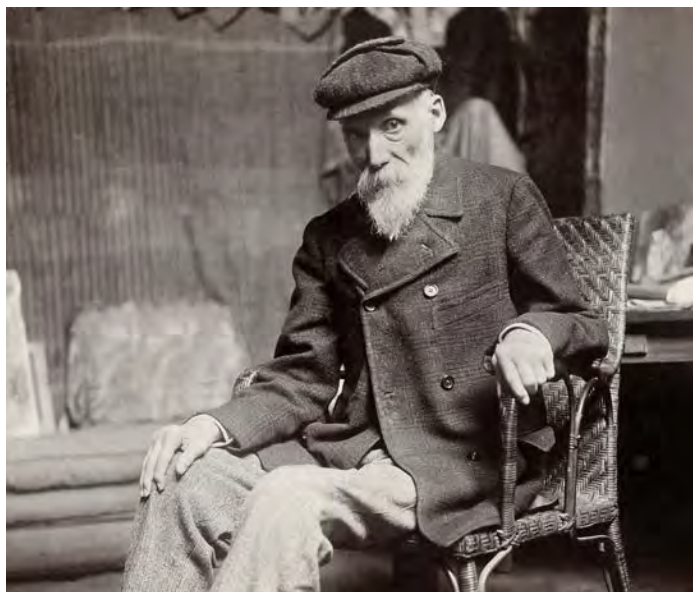
Kōjirō Matsukata and Magosaburō Ōhara were Japanese businessmen and art lovers who amassed some of the largest Impressionist collections in the world. There’s a story that when Matsukata visited Monet in Giverny, the artist offered to sell him any painting he desired. Matsukata purchased 18 of them. The French art collection of Kojiro Matsukata is now open to the public in The National Museum of Western Art (NMWA in Tokyo).

The influence of Impressionism on filmmakers and audiences is not lost on optical engineers and manufacturers. The cast of characters in this FDTimes edition explore the character of images: a lens designer who paints in his spare time, an executive who plays with light, and companies who create their products not only by mathematical equations but also by look, art, style, feeling, and poetry.

Further reading: *Japan’s Love for Impressionism, from Monet to Renoir*, Prestel 2016.

Pierre-Auguste Renoir’s 1895 *Woman with a Basket of Flowers* was purchased in 2005 by the Woodone Museum of Art, Yoshiwa, Japan. It was previously owned by the Metropolitan Museum in New York. The Woodone Museum of Art was opened by building materials company Wood One Co. Ltd. in September 1996. More than 800 art works are on display. Our thanks for their permission.

Cover - Renoir at the Birth of Cinema



Pierre-Auguste Renoir (1841–1919)
Photo circa 1910 by Dornac. Bibliothèque nationale de France



Above: The Miyagi
Museum of Art in
Sendai, Japan



Gabrielle et Jean
Pierre-Auguste Renoir. 1895-1896
Painting of Gabrielle Renard and his son, Jean
65 × 54 cm (25.6 × 21.3 in)
Musée de l'Orangerie, Paris

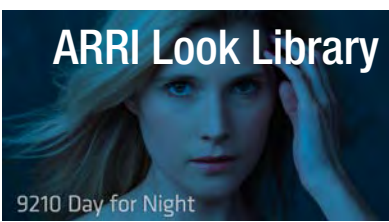


Right: Poster of
Renoir Exhibition
at the Miyagi
Museum of Art



On the set of *La Marseillaise*"
Jean Renoir and cinematographer Jean
Bourgoïn (behind the camera), 1937

ARRI Look Library



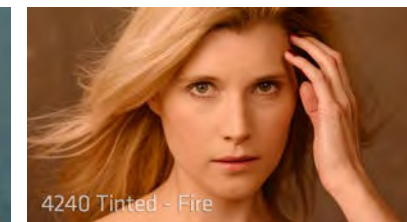
9210 Day for Night



6120 Cold



3250 Cross



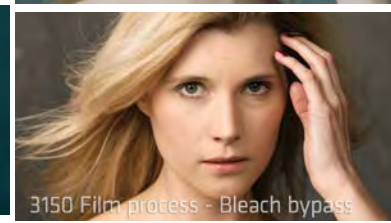
4240 Tinted - Fire



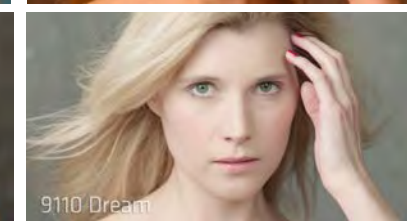
4170 Tinted - Blue sky



3112 Film C



3150 Film process - Bleach bypass



9110 Dream



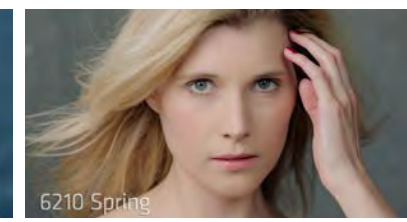
7121 High Contrast



2120 Fashion



6240 Winter



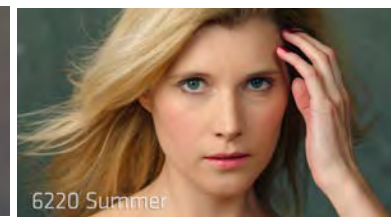
6210 Spring



5230 Saturated



3211 Vintage



6220 Summer



6230 Autumn



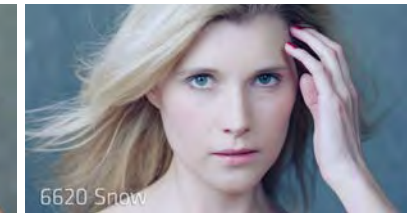
2130 Beauty



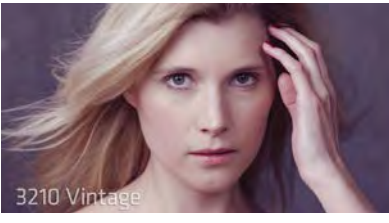
2111 Commercial



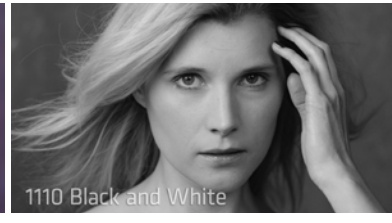
7130 High Key



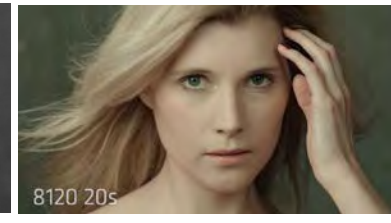
6620 Snow



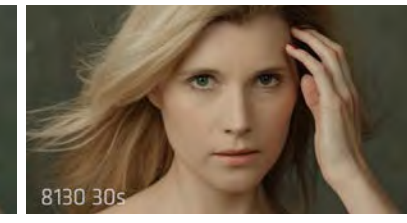
3210 Vintage



1110 Black and White



8120 20s



8130 30s



6410 Sunset



4110 Tinted - Desert



8140 40s



8150 50s



5121 City



3241 Faded



8160 60s



8170 70s



5130 Suburban



9210 Day for Night



8180 80s



8190 90s

New Canon 70-200 Zoom: EF, AF, AE, IS



Exactly a year ago at NAB 2016, Canon introduced a new cine lens for Super 35. The Compact Servo 18-80 mm T4.4 (CN-E18-80mm T4.4 L IS KAS) EF-mount zoom was a compelling hybrid that combined the best attributes of cine and still photography. Three different lines of Canon lenses intersect in the design: more than 60 L-Series EF lenses for professional still photography, Cinema Zooms with manual focus/iris/zoom barrels (15.5-47, 30-105, 14.5-60, 30-300 mm), and Cine-Servo (17-120, 50-1000 mm) zooms.

Now, a year later at NAB 2017, the Compact Servo family gets a new sibling. The Canon 70-200 mm T4.4 (CN-E70-200mm T4.4 L IS KAS S) EF-mount zoom covers longer, essential focal lengths. And so, with just two lightweight, compact, affordable, high performance lenses, you can cover any angle from wide 18 mm to long 200 mm. An accessory 2x extender gets you to 400 mm.

There are many virtues that we'll get to in a minute. But the most exciting function is one rarely seen in cine lenses: really good optical IS — image stabilization. If you've ever used Canon's superb IS binoculars while bouncing around in a boat, the benefits are clear. Helicopter and camera car shots become gracefully smooth. On a windy day, shooting from a remote head is...ahem...a breeze. When there's no time to lay track and panic mode prevails, dolly shots on bumpy floors appear steady. Handheld shots can be done smoothly at longer focal lengths. Surely more stabilized cine lenses will follow.

In the still photo world, image stabilization is often quantified by how much exposure you might have gained. In other words, with IS enabled, the equivalent of a 3-stop gain means the image now looks steady at 1/30 second where it would have otherwise required a 1/250 second exposure to be sharp. For cinematography, since we're usually shooting at the equivalent of 1/48 second, Canon's new Compact Servo zooms might be quantified by how much tighter you can zoom in with IS enabled and still remain rock steady.

And that's the big deal with the new 70-200 mm zoom. Close-ups and telephoto shots that would otherwise have looked annoyingly shaky are now wonderfully stable. There's a switch with three settings. A is for standard handheld. B engages a more vigorous correction for shake and is good when handheld from moving vehicles. C is for tripod shooting where you don't want the image to drift when your pan comes to a stop.

Like the 18-80, Canon's new 70-200 comes with EF mount only. Auto Focus and Auto Iris work nicely on Canon Cinema EOS C700, C300 Mark II and C100 Mark II cameras. A small housing on the right side contains lens motors, controls, connectors and a small zoom rocker switch. The motors can be switched on for auto or remote operation or switched off for manual control. This module remains on the lens. You don't have to remove it, recalibrate or worry about gears not meshing. An optional servo handgrip can be used interchangeably with both Compact Servo zoom lenses. It attaches to the control module with one screw using an industry standard rosette and can also be used with a handgrip extension arm.

It's no secret that a lot of Canon Cinema EOS users are working with EF mount still lenses because of the variety, availability and affordability. The new Canon Compact Servo lenses have all that—as well as geared lens barrels, a 130° focus barrel, smooth parfocal manual/auto zoom, manual/auto iris, and image stabilization. Price for the 18-80 is now around \$5,225 and the 70-200 price is expected to be announced at NAB. The ZSG-C10 accessory handgrip is about \$474.

www.usa.canon.com

NAB Booth C4325



Leica Thalia: Playing with Light



"Thalia, Muse of Comedy" 1739, by Jean-Marc Nattier.
Oil on canvas, 135.9 × 124.5 cm.
Fine Arts Museums of San Francisco

Large format cinematography got more interesting with Leica Thalia. CW Sonderoptic launched nine new prime lenses that cover all formats from Alexa 65 to Panavision DXL, RED 8K VV, Full Frame and to Super35.

Leica Thalia primes ship with stainless steel PL mounts. An XPL version will be available for ARRI Rental. Thalia lenses have front diameters that are all 95 mm, just like Leica Summilux-C and Summicron-C lenses. They accept 92 mm screw-in front filters and have a rear net holder just like the Summilux-C. Incredibly, most of the large format Thalias are actually lighter and shorter than the Super35 Summilux-C primes, which are already extremely light and small. The mechanical design is consistently Leica-like, rugged and ergonomic.

The 15-bladed irises are totally round at every aperture and create the same beautiful, smooth bokeh across the entire set. The iris ring is linear—marks are evenly spaced across all T stops.

Thalias have a new focus mechanism design with smooth cams and focus barrels that all rotate 270°. Focus and iris gears are industry-standard 0.8M and are in the same positions.

Lens metadata is provided with /i Technology via standard contacts in the 12 o'clock position at the rear of the PL mount. I believe the metadata will include shading, distortion mapping and geometric correction at a later date. The mechanical design appears to accommodate mount adapters and the possibility of additional future lens mount options. Ideas on interchangeable lens mounts are in consideration.



Prototype set of Thalia lenses seen from camera left side

FUJINON MK 18-55 T2.9 Cine Zoom Lens



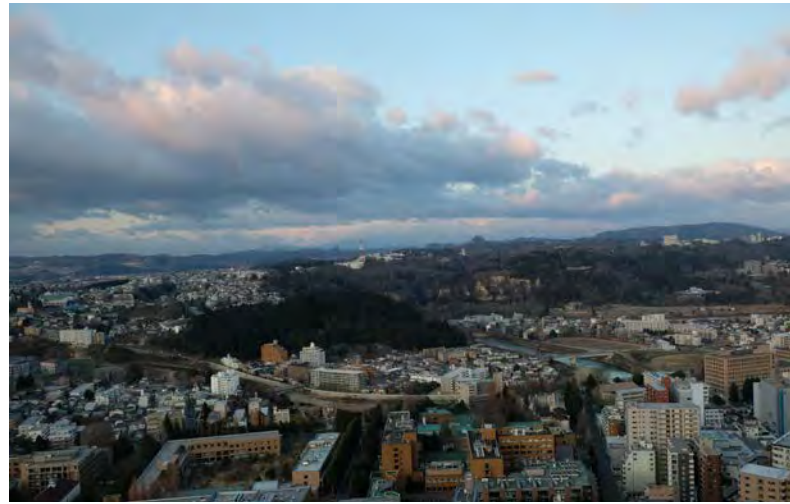
Hideyuki Kasai with new Fujinon MK 18-55 zoom in secret equipment room at BSC Expo 2017 on February 4th.

It often begins this way. There's a handshake or signature of non disclosure. Secrecy is sworn. A secluded space awaits. At BSC Expo 2017, the setting felt like a spy story, private truffle transaction, or rare art viewing.

In a hitherto undisclosed secure location (the equipment closet of their exhibition booth), FUJIFILM executives took the wraps off an exciting new zoom lens that had previously been hinted in hushed tones at an earlier meeting. That was at InterBEE 2016 with Keitaro So, Takatsugu Osari and Takuya Noguchi in a hush-hush whisper room so quiet you could almost hear the ticking of our Apple Watches. "We would like you to visit our Fujifilm factory where our new lens is being manufactured," Keitaro-san said. "It's a factory and advanced process the likes of which you have never seen before." Fujifilm executives in Japan and the US approved and organized and that is why I was flying to Tokyo on Feb. 26, 2017.

The new FUJINON MK 18-55 T2.9 Cine Lens was officially presented on Wednesday, February 22 in Hollywood. It is an affordable, lightweight, compact, E-mount zoom lens intended for the rapidly growing independent owner-

Sendai



Sendai is the capital of Miyagi Prefecture, in the Tōhoku region of Japan. With a population of around 1 million, it is the largest city north of Tokyo. The epicenter of the magnitude 9.0 earthquake on March 11, 2011—the most powerful ever in Japan—was 80 miles east of Sendai. The tsunami travelled up to 6 miles inland.

In 1600, Date Masamune (1567–1636) began construction of Sendai Castle on a hilltop overlooking the town. Masamune was a Daimyō (feudal samurai lord), with a fearsome helmet and only one eye. He was known as Dokuganryū — “one-eyed dragon”. Ken Watanabe played the part of Masamune in the 1987 NHK series *Dokuganryū Masamune*.

The year 1600 was also the year when English navigator William Adams’ Dutch ship *Liefde* was wrecked on the southern coast of Japan. James Clavell’s novel *Shogun* and the TV series shot by Andrew Laszlo, ASC are based on Adams’ adventures and Tokugawa’s interest in Western shipbuilding and navigation.

The *Shogun* was not the only one interested in ships and the West. Lord Date Masamune supervised the construction of a European-style galleon named *Date Maru* (later called *San Juan Bautista*). It was completed in 45 days by 4,300 workers. In 1613, Masamune’s Samurai retainer Hasekura Tsunenaga, with a crew and entourage of 180, sailed from Japan to Acapulco. They crossed Mexico by land, continuing as a smaller group onboard Spanish ships via Cuba and then to Spain, France and finally Italy. The main goal was to establish trade with Europe and relations with the Pope in Rome. At least five members of the expedition stayed in Seville and 600 of their descendants, with the surname Japon (Japan), remain in Spain today. Tsunenaga again to pick up the remainder of his crew, sailed to the Philippines and finally home to Japan.



Above, left:
Daimyo (Lord) Date Masamune

Hasekura Tsunenaga in Rome
by Claude Deruet, 1615, oil
Galleria Borghese, Rome
also attributed to Archita Ricci
Tokyo National Museum

Pope Paul V
Sendai City Museum
oil on canvas
76.5 x 61.0 cm



Blackmagic Design URSA Mini Pro



URSA Mini 4.6K

- Sensor Size: 25.34mm x 14.25mm
- Max Res: 4608 x 2592
- Media: 2 x CFast 2.0
- Lens Mounts: PL or EF (PL shown here)
- Monitor: 5" fold-out touchscreen



URSA Mini Pro

- Sensor Size: 25.34mm x 14.25mm
- Max Res: 4608 x 2592
- Filter dial: Clear, ND.6, 1.2, 1.8 (0, 2, 4, 6 stops)
- Media slots: 2 x CFast 2.0
2 x SD UHS-II
- Lens Mounts: Comes standard with EF Interchangeable PL, EF, B4 (PL with /i shown here)
- Monitor: 4" fold-out touchscreen

Blackmagic Design had a nice pre-NAB surprise in March: URSA Mini Pro 4.6K.

It is much more than a mere evolution of the URSA Mini 4.6K. They made all the right moves with all kinds of great details.

The new URSA Mini Pro gets built-in ND filters, interchangeable lens mounts, camera left-side outside LCD display and control panel, thoughtful ergonomic switches and dials for faster and easier operating. The body is the same size as URSA Mini 4.6K, so all the existing accessories will fit and work.

The sensor is the same as URSA Mini 4.6K: up to 4608 x 2592

resolution with 15 stops of dynamic range and the same wide color gamut. Three ND filters with IR compensation can be summoned up with the twist of a dial: Clear, 2, 4 or 6 stops.

URSA Mini Pro's main display on the surface of the camera's left side shows timecode, shutter and lens settings, battery, recording status, and audio levels. The display is backlit and designed to be visible in both dimly lit studios and outside in direct sunlight. Open the display door and a 4-inch LCD touchscreen monitor resides on the other side. (In comparison, the URSA Mini 4.6K monitor is 5-inches. Something had to give—one inch—to make room for the new ND filters and controls.)

Cooke 45-450 T4.5 Anamorphic Zoom



Anamorphic/i 45-450 zoom

NEWS FLASH. Stop the Presses.

Cooke reveals details of their 2nd Anamorphic/i Zoom at NAB 2017.

It will be a 10:1 front 2x anamorphic 45-450mm T4.5 Zoom Lens. (Photo above)

This comes exactly a year after their 4:1 35-140 anamorphic zoom was shown last year at NAB 2016.



Anamorphic/i 35-140 zoom

The 45-450 has the same front diameter as the Cooke 35-140 and 300 mm, same 300 degree focus and 90 degree iris rotation. It has long been written that a 10:1 is an essential part of any camera/lens package. The new Cooke Anamorphic 10:1 will be a welcome addition for all kinds of setups: close-ups, action, stunts, landscapes, and distant vistas where matching Cooke look and oval bokeh are desired.

The list of Cooke Anamorphic /i lenses continues to grow. Now there are 11. The primes come in standard or SF (Super Flare) versions.



	mm	25	32	40	50	65 Macro	75	100	135	180	300	35-140	45-450
Aperture		T2.3-22	T2.3-22	T2.3-22	T2.3-22	T2.3-22	T2.3-22	T2.3-22	T2.3-22	T2.8-22	T3.5-22	T3.1-22	T4.5-22
Iris Rotation	deg	90	90	90	90	90	90	90	90	90	90	90	90
MOD	inches	33	33	30	33	18	39	44	56	78	120	47	72
	mm	838	838	762	838	450	991	1118	1422	2000	3000	1200	1800
Focus Rotation	deg	300	300	300	300	300	300	300	300	300	300	300	300
Length	inches	7.68	7.68	7.68	7.68	10.1	7.68	7.68	7.68	11.65	14.88	17	22.4
	mm	195	195	195	195	258	195	195	195	296	378	430	568
Front Diameter	mm	110	110	110	110	136	110	110	110	110	136	136	136
Total Weight	kg	2.77	2.68	2.93	2.74	5.2	2.64	2.93	2.93	5.5	8.8	10.3	TBD
	lb	6.11	5.90	6.47	6.03	11.5	5.81	6.47	6.47	12	19.4	22.6	TBD

Angénieux Optimo Style 48-130 T3.0



Angénieux welcomes a 3rd sister in their lightweight, high-class, high-quality, compact Optimo Style family. The new 48-130 T3.0 zoom lens joins the Optimo Style 16-40 T2.8 and 30-76 T2.8 zooms. Actually there's a 4th Style sibling, a bit longer, less accustomed to hand-holding, but equally popular. He's the bigger brother: Angénieux's Optimo Style 25-250 T3.5.

The new 48-130 T3.0 is the longest zoom in the lightweight series: excellent for close-ups, portraits, and tighter angles on all productions.

The Angénieux Optimo Style 48-130 has superb optical performances, covers an image circle up to 34.6 mm diameter, with a constant maximum aperture of T3.0. There's no ramping (change of exposure) when zooming in. As with the rest of the Optimo Style family, there's minimal breathing (changing image size when focusing), minimal distortion and minimal optical aberration.

The image quality is superb and matches the rest of the Angénieux line in look and character. The lens shares the familiar, precise, rugged construction of the Style series, with 320 degree rotation of the focus barrel, and industry-standard 0.8M gears on the focus, iris and zoom barrels.

Optimo Style lightweight zooms are excellent for handheld, remote heads, on Steadicams, gimbals, rigs and drones.

With just 3 lenses, the Optimo Style lightweight zooms let you cover a focal length range from 16 mm to 130 mm and on to 260 mm with Angénieux's 2x extender.

Just a quick review of Optimo Style compared with Optimo Spherical (Classic) and Optimo DP Angénieux zooms. Classic (15-40 T2.6, 28-76 T2.6, 45-120 T2.8) came first and continue to be the premium, top of the line models with the best optical performance. Optimo DP (sometimes called Rouge) 16-42 T2.8 and 30-80 T2.8 had protruding rear elements, couldn't be used with spinning mirror shutters, and were discontinued. The new Optimo Style series can be used on the latest digital cameras and cameras with mirror shutters and have a PL mount that is easily interchanged to Canon EF or Panavision PV mount.

Angénieux 48-130 T3.0 Optimo Style summary

- 2.7x zoom range 48-130 mm
- Compact and very lightweight (1.95kg / 4.3 lb). Great for handheld, Steadicam, gimbals, rigs, aerials and drones.
- Constant T3.0 aperture throughout the entire zoom range. No ramping (change of exposure)
- Large image circle up to 34.6mm. Fully covers RED 8K Helium sensor and ARRI Open Gate
- Superb image quality with minimal aberration
- Color reproduction matches the rest of the Angénieux Optimo lens series
- Extremely well controlled distortion
- Internal focus, minimal breathing
- Precise focus ring with scale rotation of 320 degrees with over 20 precise focus witness marks and ergonomic rubber grip
- Compatible Angénieux Servo Unit (ASU) with integrated motors for remote control with industry standard wireless and broadcast control systems)
- Compatible with Optimo 1.4x and 2x extenders, providing zoom range of 67-182 mm at T4.2 with 1.4x, and 96-260 mm at T6 with 2x)
- Precise and rugged mechanical design of zoom and focus groups using Angénieux's classic rod mechanical guiding system
- Extreme temperature range from -20°C to +45°C
- Available in PL mount. Easily interchangeable to Canon EF or Panavision PV mount.

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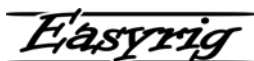
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