

Jon Fauer, ASC

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Art, Technique, and Technology in Motion Picture Production Worldwide

Japan Production Report

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Kyoto Studios

Inter BEE

Canon Expo

Still Digital Times

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Chevrin, Hinstin, Varese



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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Cover: Cinematographer Norimichi Kasamatsu, JSC and Director Lee Sang-il (in blue jeans-jacket) on “Ikari” (“Anger”) Photo by Yasuhiko Mikami

Opposite page: EXT. KYOTO COBBLESTONE ROAD IN RAIN - NIGHT Photo by Jon Fauer

Japan Production Report



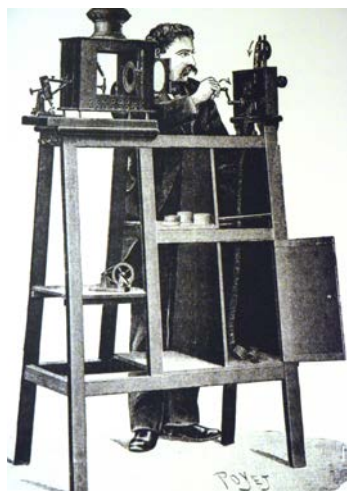
Kyoto: Birthplace of Film in Japan



Monument at Kyoto's Shinnyo-Do Temple, "celebrating film production since 1897, and the first feature in 1908, made possible by traditional performing arts, craftsmanship, the lovely locations and historical environments in Kyoto— all part of the local culture. This monument commemorates a century of film and wishes future success to the film industry."



The Cinematographe was a camera but also worked as a projector when opened and fitted with a light source. Below, right: Constant Girel, Cameraman.



Japan's film industry is one of the oldest and largest in the world. Last year, 581 features were produced, including animation. Of these, around 500 were live action features, ranking Japan as 3rd or 4th worldwide.

Here is a whirlwind history of Japanese cinema, how it grew so large, and why it centered on Kyoto.

Kyoto was the Imperial capital of Japan from 794 to 1869. It was the center of politics and culture, with more than 1,600 historical temples and shrines, a beautiful location in all seasons. Good *Mitate* (likeness or resemblance) is part of traditional Japanese culture and an important reason for the growth of filmmaking in Kyoto. Producers and directors would use existing temples, shrines, castles, and other places for their historic, dramatic films. And that is why Kyoto became central to the production of Samurai dramas.

Shinnyo-Do Temple in Kyoto has a monument to the birth of cinema in Japan. The plaque explains that businessman Katsutaro Inabata brought the Lumière Cinematographe to Japan and the first projections took place in Kyoto in 1897.

Yasuaki Mitsuwa of NAC Inc has brought me here on a tour of the Kyoto and Japanese film industry. We had heard about the monument and set off to find it. We follow the Philosophers Walk along a canal lined with cherry trees, past Ginkakuji (Silver Pavilion) and Nanzenji Temples. Shinnyo-Do Temple is down the hill towards town. The camera monument (which seems to be modeled on a Pathé) is to the left as you face the main temple.

Bringing a Cinematographe to Kyoto

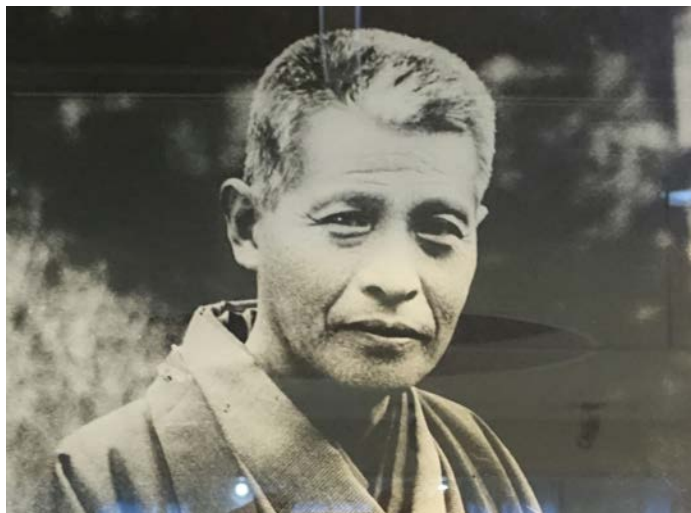
The year is 1868, the beginning of the Meiji Restoration. Japan sends its best and brightest students to study abroad. Cut to Kyoto, 1877. Katsutaro Inabata earns a scholarship to La Martinière technical school in Lyon, France to study textile manufacturing.

One of Inabata's classmates happens to be August Lumière. These kinds of coincidences usually only happen in the movies. Which is what happens. Inabata returns to Japan in 1885 and in 1890 founds his own textile dying company, Inabata Senryoten. (The company exists to this day as Inabata & Co.)

Inabata hears about the first public screening on December 28, 1895 in Paris by the Lumière brothers. He returns to France in 1896, meets with the Lumières, buys one of their Cinématographes, 50 rolls of unexposed film, and exclusive rights in Japan. He returns to Kyoto in 1897 with Constant Girel, a Lumière cameraman/projectionist.

On a snowy day in February 1897, the first test screening is held in a courtyard of the Kyoto Dento Kabushiki Gaisha (electric power company). "I believed that this would be the most appropriate device for introducing contemporary Western culture to our country, and so I asked [Lumière] for monopoly rights in Japan, and came back with one engineer and a few pieces of equipment," he later wrote.

Kyoto and Cinema in Japan (cont'd)



Shozo Makino



Meiji era print of Battle of Honnoji Temple



Shinryo-Do Temple, above. Street location at Schochiku Studios, below.



In 1897 and 1898, Lumière Cameramen Constant Girel and Gabriel Veyre shot 33 films in Japan. These were documentary vignettes of life, classic Lumière shorts offering the “world to the world.” Other shorts and documentaries followed. These were accompanied by musicians and narrated by benshi, kabuki style storytellers.

But Inabata found the film business wearying and distasteful. He returned to his weaving and textile business and turned the motion picture enterprise over to Einosuke Yokota, who will later found Yokota Shōkai, one of Japan’s first film studios.

Yokota imported a documentary film of the Russo-Japanese War (1904-05) from France and it was a big hit. Next, he wanted to expand the business and begin producing his own feature-length motion pictures. For that, he went to Shozo Makino.

Shozo Makino was an actor who ran the Senbonza theater in Kyoto. As a child, his mother had taught him Gidayu, where one narrator plays all the roles of the puppet characters. He had a vast knowledge of Japanese traditional plays and the performing arts. In 1908, Yokota asked Makino to produce the first Japanese feature film. It would be based on Kabuki drama.

Makino did almost everything. He was producer, director, art director, scriptwriter, and location scout. Matsunosuke Onoe, a former kabuki actor, was the lead. The film was “Honnoji Gassen” (“The Battle at Honnoji Temple”) based on a famous historical event in Kyoto where Daimyo Oda Nobunaga was assassinated by his Samurai general in 1582. The film was shot at Shinryo-Do temple in Kyoto, 11 years after the first Cinematographe was imported to Japan. It was the first feature film and the first Samurai drama produced in Japan.

Onoe became Japan’s first film star, appearing in more than 1,000 films. Shozo Makino directed Onoe in 60 of them and then found a new star, Tsumazaburo Bando. Bando became known as the “King of the Samurai Dramas.” Makino became known as the “Father of Japanese Film.” He directed hundreds of films, established the Samurai film genre and founded Makino Film Productions in 1923. He valued the importance of the screenplay and story and educated many screenwriters in Japan. His first films hewed to traditional themes: virtue is rewarded and vice is punished. Later, he produced more ambitious dramas

Makino created in-camera special effects for Ninja stunts and tried new techniques, close-up and moving shots, instead of fixed wide shots that were prevalent at the time. He encouraged more realistic acting and a greater sense of speed, like American films, at a time when early Samurai dramas were more like Kabuki plays.

In 1926, Tsumasaburo Bando, still the “King of Samurai Dramas,” established Bando Productions Uzumasa Studios. Uzumasa is a suburb of Kyoto. It was attractive because cheaper land enabled film stages to be erected and plentiful forests could provide the wood for building sets.

This article is based on our visit, interviews with Yasuyuki Ikumi at Shochiku Studios, Yoshinori Sugimori at Toei Kyoto Studios, and Yas Mitsuwa’s translation of the Kyoto Film Office’s 2012 booklet “Film Culture and History of Kyoto, from the birth of Film to the Present Time.” Naming conventions are English: first name followed by last name. (In Japanese, it’s the reverse.)

Norimichi Kasamatsu JSC: Mixing Anamorphics



Text and photos by Yasuhiko Mikami. Edited by Jon Fauer.

The following article ran in the November edition of FDTJ — Film and Digital Times Japan — distributed at Inter BEE. Here it is in English.

Cinematographer Norimichi Kasamatsu, JSC recently completed the feature “Ikari” (“Anger”) using a variety of anamorphic lenses. Ken Watanabe starred.

FDTJ: Tell us about the movie.

Norimichi Kasamatsu, JSC: “Ikari” is based on a crime novel written by Shuichi Yoshida, and directed by Lee Sang-il. The whole country is in search of a fugitive murderer for over one year. The story features 3 men disguising their past, starting new lives in different locations. This is the second time I have worked on a Yoshida-Lee project, following “Villain” in 2010.

How did you establish the look of this feature?

The most important instruction was to make this movie look different from “Villain”. Same author, same director, same DP but a distinctive look was required. The producer and director requested a more saturated, vivid look. Since the 3 stories are interwoven, one of the challenges was to design a particular look for each story and location so that the audience can easily identify which story they are watching.

What equipment did you use to help maintain the style?

We shot Arriraw on Alexa cameras and applied basic viewing LUTs unique to each shooting location. The LUTs were prepared during location scouting, and are not as stylized as they would be in final grade. Something mild enough to give a flavor of the look we are intending to establish was thought enough for on-set monitoring and dailies. The director and crew do not rely much on monitors, and the production environment does not allow the use of large displays anyway. All we have is a 7-inch monitor, which was primarily used by the lighting department.

Why did you decide to shoot anamorphic?

This is the 3rd time I am working with director Lee. We are both big fans of anamorphics due to the distinct bokeh and flare. Our previous work on “Unforgiven” was an anamorphic film production shot in the wilderness of Hokkaido, thus the anamorphic format was a perfect fit. This project is somewhat the opposite, as we had to shoot in confined spaces both on location and in studio sets. On several occasions I had to ask the director whether we were really going to shoot and release the movie in 2.4:1 or if it would be in 1.85:1. Anamorphics have good horizontal coverage, but I was concerned about the narrow vertical field of view. The director was pretty much determined to go anamorphic, so having access to wide anamorphic zooms and primes was extremely beneficial.

What made you pick anamorphic lenses from 3 different manufacturers?

We evaluated Master Anamorphics, Kowa and Hawk primes. We settled on the Kowas and Hawks, where the two lens lineups complement each other nicely in terms of focal length. Both prime anamorphic sets carry the traditional anamorphic look and feel, and are not terribly difficult to match with each other. We needed the Angénieux zooms for the Steadicam and B-camera. In terms of optical performance, these new Angénieux anamorphic zooms are light years ahead of old HR lenses with anamorphic rear adapters. Having zooms on the Steadicam is extremely useful as you can save time re-balancing the rig after a lens change, and you have the flexibility to adjust the frame easily. Zooms are somewhat addictive as you get to shoot faster without any loss of quality, but a part of me says there is a risk in making you indifferent to lens characteristics.

How did you select lenses for each shot?

Perhaps 70% of the movie was shot on primes: Kowa and Hawk, depending on the focal length. The two Angénieux anamorphic zooms (30-72 and 56-152) were indispensable for Steadicam

Norimichi Kasamatsu JSC (cont'd)



shots, and we were very fortunate to have one of the very first 30-72 zooms out of the factory. The zooms have very little distortion, which helped to shoot scenes where you see buildings and straight lines in the background. Some of the anamorphic primes have pronounced distortion, which can be disturbing at times. The two zooms have a nice overlap between the long end of one (72mm) and the wide end of the other (56mm). This enabled us to cut between A and B-cameras using zooms—especially when both were set around 65mm.

Close MOD was another factor for the zooms: the Angénieux anamorphics focus to around 2'2". On certain street scenes, we had to use prime anamorphics on the Steadicam as we felt T4 on a wide zoom was not fast enough to separate the foreground. In Okinawa, we had to shoot from a little boat. Exchanging lenses in a rocking boat is not an option, so we intensively used zoom lenses for that particular sequence.

How did you manage to intercut shots coming from all those lenses with different characteristics?

We tried to narrow the gap by applying different grades of Tiffen Glimmerglass on all lenses. Obviously newer lenses require heavier filtering, but we did not apply extreme filtering. The Glimmerglass also helped to defuse highlights and establish a more summer-looking lighting condition. The whole story takes place within the month of August in Japan, where the strong sunlight is always diffused by the intense heat and extreme moisture. There is a minor shift in color across the lenses, but that can be managed in DI. There is very little VFX work and no 3D modeling in the movie so we had no issues coping with different lens distortion characteristics in post.

Equipment provided by NAC Image Technology:

Alexa XT Plus, ALEXA-M

Angénieux Optimo Anamorphic: 30-72 T4, 56-152 T4.

Hawk V-Lite: 28, 35, 45, 55, 65, 80, 110, 140 mm.

Kowa 35-BE: 40, 50, 75, 100 mm



ARRI ALEXA 65 Productions



Perhaps it's the Bavarian sensibility. High praise is reluctantly expressed, as in, "It could be worse."

ARRI ALEXA was originally introduced as a "camera for television production...and maybe a few features." Alexa now has about 95% of the high-end feature market worldwide. The Arriflex 16SR was originally intended as a newsreel camera. It became one of the most popular 16mm cameras of all time.

ALEXA 65 was introduced at Cinec in September 2014. It was expected to be embraced for big budget, live-action visual effects sequences. Franz Kraus, Managing Director of ARRI, modestly said at the time, "There is probably a little demand today. I think everybody who has shot in large format indulged in the beauty of the large real estate. Size matters in digital times too."

It's a rental-only camera. A feeding-frenzy followed. Productions wanted first dibs on ALEXA 65 as additional cameras for VFX, landscapes and opening sequences: *The Revenant*, *Mission: Impossible—Rogue Nation*, *Snowden*, *The Huntsman*, *Captain America: Civil War* (IMAX), *Spectre*...

And then, sure enough, ALEXA 65 was in demand as the main unit "A" camera. As Otto Nemenz has said, "Give cinematographers a bigger gate or bigger sensor and they will want to fill it up."

Neil Fanthom, ARRI Rental Technical Marketing Director, said, "6.5 Petabytes (3,250 2TB Drives) of production footage has been captured in 11 months on 18 feature films using 30 ALEXA 65 cameras, with another 40 new cameras planned for next year."

ARRI ALEXA 65 worked (or is working now) as Main Unit "A" Camera on the following features:

<i>Passengers</i>	Rodrigo Prieto ASC, AMC
<i>Live By Night</i>	Robert Richardson ASC
<i>Sully</i> (IMAX)	Tom Stern ASC, AFC
<i>The Great Wall</i>	Stuart Dryburgh ASC, NZCS

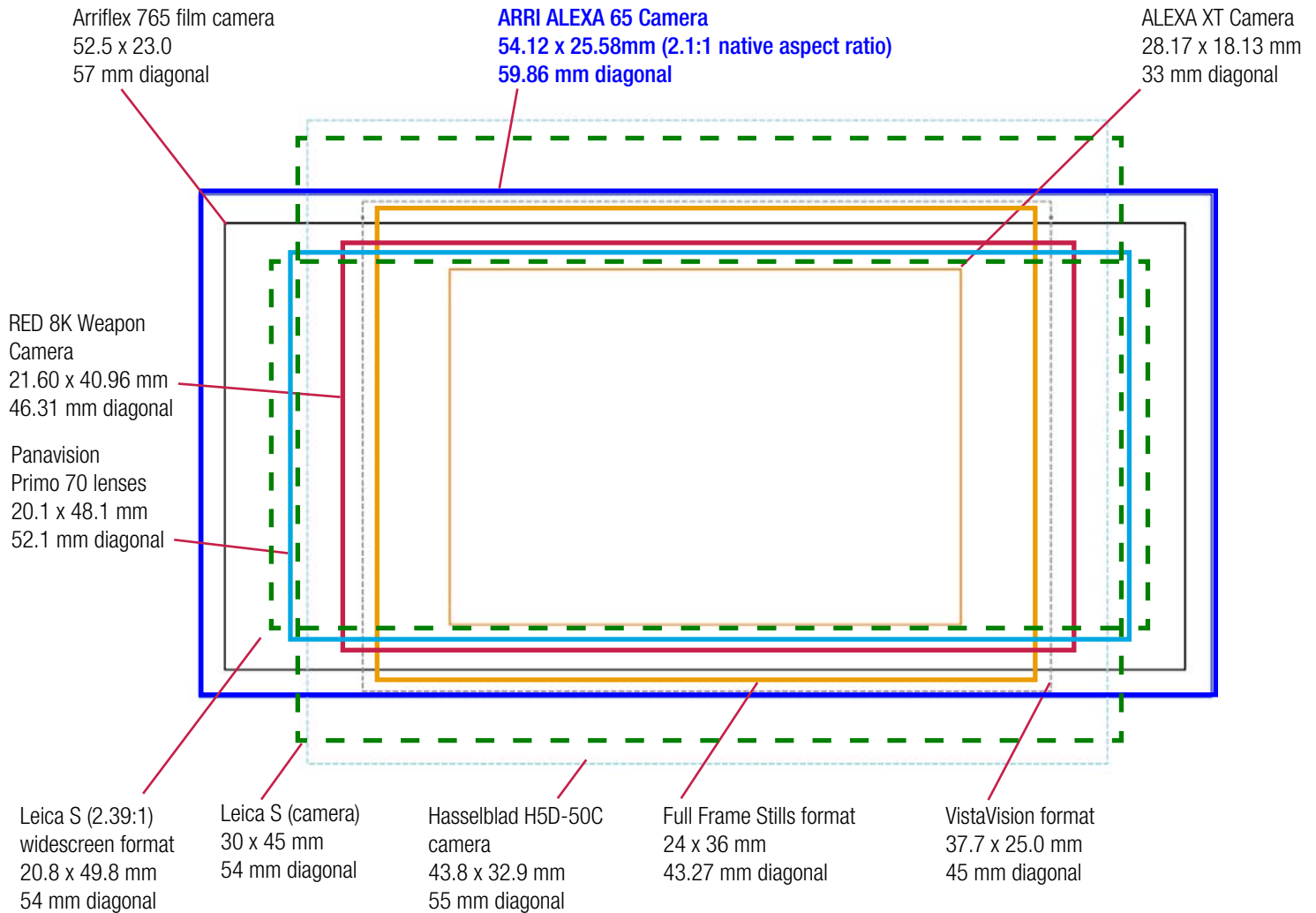
Rogue One: A Star Wars Story
War For The Planet Of The Apes
Planetarium
Assassin's Creed
Doctor Strange
The Crowd
Halo 5: Guardians

Greig Fraser ASC, ACS
 Michael Seresin BSC
 Georges Lechaptois
 Adam Arkapaw
 Ben Davis BSC
 Darius Khondji ASC, AFC (short subject)
 Jess Hall BSC (commercial)

ALEXA 65 has an image sensor with a 59.86 mm diagonal. Its XPL mount has a 60 mm flange focal depth and accepts the ALEXA 65 Lenses. However, a commandment of cinematography is: "Think different (lenses)." We see an example in these photos from a recent Panavision check-out: ALEXA 65 camera fitted with a Panavision Primo 70 mount (40 mm flange focal depth), using Primo 70 T2.0 lenses. Primo 70 lenses cover an image diagonal of about 52 mm.



Sensor and Lens Coverage Comparisons



	Width (mm)	Height (mm)	Diagonal (mm)	Horiz Rez	Vertical Rez	Aspect Ratio
ALEXA 65 camera	54.12	25.58	59.87	6560	3100	2.11:1
ALEXA 65 Lenses	54.12	25.58	62			
ARRI Vintage 765 Lenses	54.12	25.58	79			
Arriflex 765 motion picture film camera	52.5	23.0	57			2.28:1
Hasselblad H5D camera	43.8	32.9	55	8272	6200	1.33:1
Leica S camera (native)	45	30	54	7500	5000	1.50:1
Leica S lenses (widescreen coverage)	49.8	20.8	54			
Panavision Primo 70 lenses	48.1	20.1	52.1			
VistaVision format	37.7	25.0	45			1.50:1
Full Frame Stills format	36	24	43.27			1.50:1
RED W8K camera	40.96	21.60	46.31	8,192	4,320	1.89:1
ALEXA XT camera	28.17	18.13	33	3414	2198	1.54:1

HDR Lighting with Paint



Marie-Denise Villers *Portrait Of a Young Woman Drawing*. 1801. Oil On Canvas. 161 X 129 Cm . Metropolitan Museum Of Art, NYC



Portrait Of a Young Woman Drawing as it might have been on a non-HDR monitor today: blown-out windows and murky shadows

This is an irreverent introduction to HDR—High Dynamic Range. What you and I see in real life usually looks better than the display capabilities of ordinary TV sets, monitors and cinema screens. We naturally see details in dark shadows and bright highlights. Most monitors do not.

HDR proposes to be a WYSIWYG pathway—what you see is what you get—for the world of capture and display. Would it not be wonderful to have a realistic image in video village instead of having to verbally reassure the Director that a window behind the actress will look just fine, and yes, we'll see her beautiful eyes, and trust me, the wall behind her will not be as murky as it appears.

HDR is the big thing as we begin 2016. It was everywhere at Inter BEE and CES, where the major players showed new HDR televisions and monitors. Buzzwords abounded in the HDR Ecosystem, but the bottom line is that here was something salubrious for both consumers and professionals.

This brings us to the confluence of consumer electronics, cameras, cinematic canons, and concerns about artists' rights in Europe. HDR is great for consumer electronics. What consumers wouldn't want a 4K or 8K HDR TV that looks much better than what they have now? What cinematographer wouldn't want monitors on set and HDR projection to represent the same exposure latitude being captured by the cameras? However, I have one concern and I think I already hear the drums beating at IMAGO in Europe. What if companies attempt to HDR-ize old content that was never intended to look that way? I remember the howls

when Ted Turner wanted to colorize *Citizen Kane*. And Anjelica Huston successfully used French copyright law to prevent colorizing John Huston's *The Asphalt Jungle* and set a precedent to prevent distribution in France of any altered version of a film against the wishes of the original creator or heirs. The USA National Film Preservation Act of 1988 prohibits distributing or exhibiting an altered film that has been included by the National Film Registry.

Let's get back to the good news about HDR. One of my favorite paintings in the New York Metropolitan Museum is Marie-Denise Villers's *Portrait of a Young Woman Drawing*. Possibly a self portrait, it was exhibited in the Paris Salon of 1801. It's so good that art historians originally thought Jacques-Louis David was the painter. In 1951 they credited Constance Marie Charpentier, and in 1996 finally settled on Marie-Denise Villers.

Charles Sterling, advisor from the Louvre to the Met, wrote in 1951, "The seriousness of her eyes contrasts with her vaguely dreamy air. She is seated before a window against the light, bathed in a faint penumbra, which instead of modeling her makes her almost transparent. Behind her, through a broken window pane, is seen the terrace of an austere building, where a young couple stands conversing in the serene summer light. The girl's delicate face, the golden light in her hair, the radiant whiteness of her dress, the attraction of the sun-bathed sky, all these charms, set off by the bareness of the studio, leave an exquisite impression of youth, of morning freshness."

Villers lets us revel in all these exquisite details. Perhaps we should call it True (instead of High) Dynamic Range.

Canon DP-V2410 HDR Monitor



Last week, three marauders from Canon descended upon the FDTimes offices. Joe Bogacz, David Doko and Paul Hawxhurst (left to right, below) proceeded to unpack a Canon EOS C300 Mark II Camera, Canon Cinema EOS Lenses and a Canon DP-V2410 4K HDR Reference Monitor—with a 24-inch display diagonal. They were here to teach me the finer points of High Dynamic Range and Canon's seamless HDR system—something they might have found sorely lacking perhaps after reading the article on the preceding page.

As quick as you could say Canon See Impossible, the importance of what was playing out became clear. Canon is in the imaging business. And imaging includes monitors. And they make almost every product we had before us. Everything from the sensor, software and circuitry inside the C300 Mark II, to the lenses, to the monitor itself. With that kind of control, it is a pleasantly coordinated and easy-to-use environment.

Let's begin with the camera. Canon's EOS C300 Mark II has expanded dynamic range to 15 stops. Yes, that's High Dynamic Range. The problem, up to now, is that most standard (SDR) monitors on set or in video village have a mere 7-9 stops of dynamic range. That's why windows blow out and shadows show little. The monitors don't show what the cameras are capable of.

The C300 Mark II camera's XF-AVC codec can record nicely compressed 4K image data onto internal CFast 2.0 cards. The camera can also send uncompressed RAW data via 3G-SDI to an external recorder and monitor. Here's where the DP-V2410 comes in.

Run a 3G-SDI cable from the C300 Mark II's REC OUT BNC connector at the rear of the camera to the top 3G/HD-SDI IN BNC connector on the back of the 2410 Monitor. It is labeled "A."

You can connect an external recorder to the OUT connector.

Even if you're sending a 4K RAW signal to the Monitor, you only need this one cable. The Monitor debayers the 4K RAW internally. That's the "Aha" moment. You don't need to plug in four separate cables for RAW viewing if you are using a C300 Mark II.

In other words, the DP-V2410 has a built-in de-bayering function that lets you view 4K RAW (with Canon Log) footage from a C500 or C300

Mark II camera (with either Canon Log 2 or Log) using a single 3G-SDI cable. You don't need additional external equipment. The monitor separately supports PQ input signals (SMPTE ST 2084) for HDR viewing and faithfully keeps the original brightness and color range of the scene. The monitor also supports BT.2020, ACESproxy 1.0 and ASC CDL. It has an LED screen with a maximum brightness of 400 nits for faithful reproduction of color and gradation of blacks. We set up a shot looking out the window from the darkly lit office. It was impressive how realistic the scene looked on the monitor.

A color grading control panel can be plugged into the monitor without the need for a computer. Eight LUTs are loaded. Frame-grabs can be stored on a USB stick. One thing—don't support this 26 lb monitor on a tippy C-Stand. Use a Matthews Monitor Rolling Stand II (29" to 75" — PN 249562) or place it on the DIT cart.

Larry Thorpe, Canon Senior Fellow, eloquently summarizes the DP-V2410 in an upcoming white paper. He writes, "Canon undertook a coordinated design to produce an on-set digital motion imaging system having HDR functionality. Anticipating the ultimate portrayal of HDR imagery on new HDR displays, having high luminance levels and high contrast, places a special burden on those originating that imagery. The images need to be accurately displayed on-set on an appropriate reference display. This starts with the ability to accurately portray deep black levels on set. The ability to capture very dark objects and very bright objects within a single scene requires structuring video that preserves all of that information until it finally reaches a display capable of approximating the luminance levels of the original scene. The heart of the on-set HDR system is a unique 4K reference display developed by Canon—the DP-V2410."

From this point on, it would be absurd to shoot with a C300 Mark II without a DP-V2410 as part of the package. It would be like Holmes without Watson or Simon without Garfunkel.



3G-SDI IN REC OUT



The Calling of Caravaggio in HDR



Caravaggio *The Calling of Saint Matthew*. 1599–1600. Oil on canvas. 322 cm × 340 cm. San Luigi dei Francesi, Rome



The Calling of Saint Matthew as it might have been HDR-ized

Here is a cautionary fable about overzealous remastering in HDR—High Dynamic Range.

Francesco Maria Bourbon del Monte Santa Maria, (1549-1627) was an Italian Cardinal and lover of the arts. His epitaph reads, “Excellent patron of the good arts.” “Excellent” is an understatement. His collection included more than 600 paintings, enough to fill an entire museum. He was one of Michelangelo Merisi da Caravaggio’s first patrons.

In 1599, the good Cardinal del Monte recommended Caravaggio to paint three canvases honoring Saint Matthew in the Contarelli Chapel in the church of the French congregation, San Luigi dei Francesi in Rome. One of these is *The Calling of Saint Matthew*, about the moment when Jesus calls to Matthew to become one of his followers. This is the seminal painting that inspired Vittorio Storaro, ASC, AIC, which he discusses in the article that follows.

Caravaggio’s *tenebrism*, from Italian *tenebroso* (murky), was a heightened style of chiaroscuro. Contrast between highlight and shadow is extreme. Darkness is a dominant characteristic and the bright ray of light is as symbolic as it is stylistic. Generations of artists were influenced, including Rembrandt, Georges de La Tour and Gerrit van Honthorst. As we embark on a new era of High Dynamic Range in 2016, I can almost imagine the dialog and debate in 1599.

Cardinal del Monte might have written to his protégé:

My dear Caravaggio,

I am much concerned by the progress of your painting in San Luigi dei Francesi. The dark areas are so dark. Why can we not see into the shadows? After all, your patrons have squandered so many scudis on this painting, the least you can do is let us see the details of the entire canvas for which we have paid through the nose.

Have you not heard the latest recommendation of the Society of Maestros, Painters, Technicians and Engineers? They call it High Dynamic Range. It’s all the latest rage—to show on canvas what

we can see naturally with our eyes.

Our eyes can see into those shadows that you annoyingly obscure. We used to call it *chiaroscuro*, but you are taking this too far. *Tenebroso*, murky like a swamp. And what of your highlights? The sun should be bright and dazzling, at least 2000 Nits. We love high your resolution details. Can you not add greater exposure latitude?

I am sympathetic to your struggles with anger management. Please do not challenge me to a duel. We can work this out. Several hundred years from now, pictures will probably move. There will be artists called Cinematographers, writing with light, painting pictures in the dark. A famous artist named Vittorio will look to your *Calling of Saint Matthew* one day for inspiration. Please do not disappoint. Yours truly, Cardinal del Monte.

The expected fulmination followed.

My dear Cardinal del Monte,

I suggest you stick to the sermons and let me do the painting. However, you raise an interesting dilemma. I agree that sometimes it might be beneficial to have High Dynamic Range, to see details both in the shadows and in bright areas. For example, if in *The Calling of Saint Matthew* we depicted the window itself, then it might be marvelous to see what is outside. But that’s a different story. If you or your colorists dare to renovate my painting in post production without my agreement or my presence, then I will be very angry indeed.

As you point out, several hundred years from now, producers, popes and potentates will have the means and technology to alter the intent of the artist. They will colorized black and white, rendering the shades of gray into garish pigments. You predicted that pictures will move. Yes, and they will take older moving pictures that were never lit with high dynamic range in mind and will force audience to see into shadows that the artists never imagined should be seen. Please use discretion and good sense. Sincerely, Caravaggio.