Jon Fauer ASC www.fdtimes.com Issue 112 Dec 2021 FILM Source and Tophene Production Worldwide

Art, Technique and Technology in Motion Picture Production Worldwide



Sony VENICE 2 8K

FILM 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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Fritz Gabriel Bauer, AAC



A brilliant camera designer, director, cinematographer, producer, inventor, a founder of Moviecam, a father of Arricam, left us in November. Fritz Gabriel Bauer, AAC, modestly holding aloft the Arricam he began co-developing around 1997, famously said, "A camera is just a box onto which you put a lens." He was smiling mischievously. I will write more soon about Gabriel and his profound influence on camera design and our business.

This December edition is all about another new camera: Sony VENICE 2. You may ask, why are there fewer pages and why are they Sony-only? Is this a Venetian monopoly?

Jean-Pierre Beauviala, the polymath Aaton camera creator who left us in 2019, once complained that FDTimes was getting too heavy to carry around at trade shows. "Too many pages," he said, remembering when this adventure began as a featherweight 16-page newsletter.

Now Jean-Pierre's wish is partially fulfilled. This edition is abridged from 128 pages. Now it's 64. Blame supply chain. They rationed paper, limited page count. Computer chips, cars and cream cheese are not the only things in short supply.

But not to worry: the excised 64 pages, and maybe more, will print in January. FDTimes still pretends to be bimonthly even if seven issues were issued this year—precipitated by a trickle of trade shows and an overflow of new equipment launches.

In advance of a major camera introduction such as this one, there is usually a six month interregnum to discuss, dissect, test, cavil, kick the tires and write. VENICE 2 was less indulgent. The first hint was on Friday the 13th of August, a cursory email with six intriguing bullet points: smaller, lighter, faster, better, versatile, new sensor.

Discussions with the VENICE 2 team in Tokyo started on October 7. A hero photo and production-ready VENICE 2 arrived at FDT on November 7, just days before the Sony worldwide launch on November 15. It was a white-knuckle week, like an exam with many questions and not enough time, the same feeling as covering two pages of script with ten setups during an available light magic hour that's only 20 minutes.

This December edition is not only Sony. To expand on Gabriel's epigram, a camera is only as good as the lenses in front and the essential accessories all around it. Cinematographers and crews will inevitably take VENICE 2 where its designers never intended, and future firmware updates, accessories, lenses and techniques will ensure that this camera report is just a work in progress.

Sony VENICE 2 8K and 6K Camera Introduction



November 15, 2021. Four years, two months and nine days after the original VENICE camera first launched five miles from Venice Beach, at Sony Pictures in Culver City, CA, VENICE 2 arrives.

There are two models: VENICE 2 8K and VENICE 2 6K.

See the picture above. Sony is rather discreet about identifying cameras. Sony a1, a7 and a9 still cameras are similarly stealthy. You have to look hard to find the model name. It's the opposite of Formula 1 cars and the back of FDTimes, where logos are emblazoned on every square inch.

The name VENICE is nowhere to be found on VENICE cameras, except possibly on the box in which it ships. If it's a VENICE 2 8K, you will see "8K" in understated lettering on the front. Even that is modest, since VENICE 2 8K is actually 8.6K.

If you do not see any indication of "K," then it's the 6K model.

And how do you distinguish whether it is an original VENICE or the latest VENICE 2? VENICE 2 has a completely flat base with big air vents. Original VENICE has a removable shoulder pad on the bottom.

The only adornment is a CineAlta logo on the left side. "CineAlta" is written on the right side. The design is clean and understated.

Not understated is the performance of this camera. Sixteen stops of exposure latitude reveal more highlights and shadow detail. Skin tones are smooth and gentle. Images are elegant, natural, with a quality that seems almost tactile and impossibly threedimensional. The following report was possible thanks to the incredible efforts of Sony teams in Japan and California. Team meetings became virtual jetlagged excursions from New York nights to Tokyo early mornings. New York early mornings were even earlier mornings in San Diego. A VENICE 2 8K flew here last week. Meets, Shoots & Leaves too soon.

If you have used the original VENICE, the learning curve is almost instantaneous. This is a familiar friend.

If you haven't used VENICE before, the logical layout and intuitive menus might make the many pages herein superfluous. VENICE 2 certainly passes the 5-minute, no user-guide test.

Above all, it's all about the image. Don't take my word for it. Watch the first VENICE short films from, among others, Claudio Miranda ASC, ACC and Rob McLachlan ASC, CSC, described later in this report.

Why is the image so good—even better than original VENICE? Maybe the metaphor was hatched in Paris, about which Hemingway wrote, in *A Moveable Feast:* "By then I knew that everything good and bad left an emptiness when it stopped. But if it was bad, the emptiness filled up by itself. If it was good you could only fill it by finding something better."

They found something better, those designers and scientists and engineers at Sony. They did not stop. They found a new sensor, improved imagery, a deeper awareness, better handling.

It is very good.

There are two VENICE 2 Camera Models



Sony VENICE 2 6K

There are two VENICE 2 models: 8.6K and 6K

- The 8.6K and 6K image sensor blocks are interchangeable.
- This is an evolution of the original VENICE product design.
- VENICE 2 looks very similar to original VENICE.
- Many VENICE accessories will fit VENICE 2 because most threaded screw sockets and connectors are the same.
- The bottom of VENICE 2 is essentially the only area that is different from the original camera.
- The flat bottom of VENICE 2 sits comfortably on your shoulder. It's nice without any baseplate at all: the balanced, low center of gravity is a pleasure.
- VENICE 2 is slightly longer than VENICE body only.
- VENICE 2 is 44 mm shorter than VENICE with R7 Recorder.
- · Compact body with X-OCN RAW Recording built-in (no more need for the external AXS-R7 recorder).
- 4K ProRes Recording is also built in.
- Many updates and more intuitive menus were based on VENICE users' comments
- New high-speed 6.6 Gbps AXS card for 8K 60p recording
- The ethernet connector port moved to the Camera Right side.
- Lemo 2-pin 12V port replaced the Hirose 4-pin at rear.
- Internal mic added.

VENICE 28K

VENICE 2 8K has a 50 Megapixel (8640 x 5760) Full-Frame sensor.

- Full-Frame 8.6K recording in 3:2 imager mode up to 30 fps.
- Full-Frame 8.2K 17:9 recording up to 60 fps.
- Internal X-OCN LT, ST and XT 16-bit (RAW-like) recording.
- Internal ProRes 4K recording oversampled from 8.6K sensor.
- 16 stops of exposure latitude (dynamic range).
- Dual Base ISO of 800 and 3200.
- Internal Clear and ND.3 to ND2.4 filters (8 stops).
- VENICE 2 8K accepts VENICE or VENICE 2 6K sensor block. The camera recognizes the change automatically.

VENICE 2 6K

VENICE 2 6K has a 24 Megapixel (6048 x 4032) Full-Frame sensor. It is the same sensor as the one in the original VENICE, which could also be called first VENICE, VENICE 1, Ur-VEN-ICE, or primogenitary VENICE. As with the original VENICE, VENICE 2 has:

- Full-Frame 6K in 3:2 imager mode up to 60 fps.
- 15+ stops of exposure latitude.
- Dual Base ISO of 500 and 2500.
- Internal Clear and ND.3 to ND2.4 filters (8 stops).
- Internal X-OCN LT, ST and XT RAW 16-bit recording. That is the major difference between VENICE and VENICE 2 6K.

Sake Theory and 8K



Ichijo Koji explains the process of polishing rice for Sake. Suehiro Sake Brewery (est. 1850) in Aizu, Japan.

Why is the image good?

You could be peppered with strings of numbing numbers about VENICE 2 — 50 Megapixel sensor, unofficially estimated 4.14 micron photosites, 16-bit recording, 800/3200 dual base ISO and 16 stops of dynamic range.

"You may ask yourself," poetically following your inner David Byrne (*Once In A Lifetime*), "How do I work this?"

You might begin by considering that a separate division at Sony makes the Alpha series still cameras. For example, the Sony a1 flagship camera has a 50 MP 8K 35.9 x 24.0 mm sensor, sublime skin tones and advanced color science. We use an a1 camera here at FDTimes.

You may ask yourself, what is the result of Sony's owned supply chain straddling sensors to screens, pixels to projection, lenses to living room, megapixels to multiplexes. But of course, you will simply want to see VENICE 2 for yourself, shoot your own tests.

Who needs 8K?

We have heard this chorus before. Who needs finer grain and faster film stocks? Who needs HD? Who needs 4K? Who will enjoy 8K?

FDTimes has been rhapsodizing recently about other new 8K cameras. A pattern emerges. An optical engineer explained, "It seems counterintuitive. You would think that higher resolution gives the moving image more of that dreaded video look. But in fact, the opposite is true.

"The greater resolution provides a finer canvas and therefore fewer artifacts. It is like the photos in your magazine. If you print with a finer dot pitch, the pictures have a greater degree of tonality, detail and presence. You can certainly soften your image with a camera filter or an unsharp mask in your post process. Advances in sensor design have enabled simultaneous increases in both resolution and sensitivity."

It was ironic, in the beginning, that many users of the original VENICE were shooting not in Full Frame but in Super35 format. There were several reasons. Four years ago, the selection of Full Frame lenses was not as vast and eclectic as now. There was a vast inventory of Super35 lenses. And, that original VENICE offered amply mandated 4K 4096 x 2160 Super35 image origination.

Today, rental houses report that a majority of their current VEN-ICE shows are shooting Full Frame.

But, I asked mischievously, might their storage shelves lined with long-dusty Super16 lenses be eyed with renewed vigor, now that VENICE 8K could capture Super16 (12.52 x 7.41 mm) format in 3K—if my math is correct?

5.8K Super35 on an 8.6K Full-Frame Sensor

And what about shooting Super35 on VENICE 2 8K? Indeed. There are generous Super35 imager modes: 5.8K 17:9, and 5.5K 16:9, and 5.8K anamorphic Super35 6:5.

Another question comes up. If shows are delivered in 4K, why shoot in 5.8K? For that matter, why shoot 8.6K Full Frame? The detour is long along the beneficent road of oversampling, downsampling, down-rezzing, VFX work, active backgrounds, mixed reality. But now it is time to detour with Hemingway once again: "Wine is a grand thing," he said. "It makes you forget all the bad.

Research, Rentals and Owners





Inedible outer hull of rice.

Incredible Dassai 23.

Sake Theory and 8K

Sake is a rice wine. It is a very grand thing. Some argue the process is more like beer. No matter, brewing sake suggests an appropriate answer to why we like 8K even if the resulting image is only 4K.

Sake is made from rice and comes in various grades. To make sake, you remove the inedible outer husk. The grain is polished, or milled, to remove the additional layers of bran, fats and minerals. The finer the rice is polished, the higher the grade of sake, and usually the cost is commensurate.

The pinnacle of polished sake is Junmai Daiginjo. My favorite is Dassai 23. The number 23 represents the amount of rice remaining after polishing. So, it takes a 77% larger grain of rice and 168 hours of polishing to create this silky textured sake with a nose of flowers, strawberries and layers of flavors that remind me of the imagery that flows from VENICE 2 8K.

Try the wine? Enjoy the elegance of the image.

Practical

Was there ever an art director on a commercial who didn't want to blow up and zoom in on a scene during post production, the better to see the product in all its glory? Don Draper of *Mad Men* would approve of that abundance of resolution to retain good, clean images. As he said, "You can't tell people what they want. It has to be what you want."

You may want to stabilize bouncy images in post. This can be done by enlarging the image slightly and then repositioning it with software, frame by frame. An 8K image offers higher resulting resolution after these post production ministrations.

8K Televisions

Media business market research does not necessarily require consulting services from Bain or McKinsey. Just visit your nearest Best Buy consumer electronics mega-store. Navigate to the television department. Even now, you will see many affordable 8K TVs. Sony Z8H 8K, Samsung NeoQLED 8K and LG NanoCell 99 Series televisions line showrooms seemingly longer than corridors connecting NAB Central to South Hall.

Prices have dropped since your jaw dropped at pre-pandemic CES Shows, when the same 75-inch 8K televisions cost the equivalent of a small country's GDP. Today, giant 8K TVs for your home cost less than a bunch of batteries for your VENICE 2 camera. Do we see a trend?



8K Sony BRAVIA XR Master Series Z9J HDR Full Array LED with 75" or 85" diagonal screens.

Rentals and Owners

As a rental house or owner-operator, you may ask yourself, what about my original VENICE? Sony will continue to support the original VENICE in its Cinema Line. This VENICE does a few things its younger siblings cannot do, for example, simultaneous X-OCN and other format recording.

And you may ask yourself which VENICE 2 do I buy? 8K or 6K?

If you are content with your current VENICE footage but would like something lighter and smaller and capable of faster framerates, then the 6K model may be fine. As of this writing, upgrade paths from VENICE 2 6K to 8K have not yet been confirmed.

VENICE 2 8K is the flagship model. In addition to its considerable talents, consider also the compelling potential for future-proofing.

None of this is lost on the tycoons in the tower, the masters of the media metaverse. When 8K consumer television consumption reaches a tipping point, perhaps the only question is how much of a premium they, the streaming service providers, might charge to send 8K shows directly to your new 8K TV.

Sony VENICE 2 – Camera Left Side



Sony VENICE 2 – Camera Right Side



Sony VENICE 2 – Front



VENICE 8K with PL Mount Removed, Revealing E-mount



Sony VENICE 2 – Rear



Sony VENICE 2 – Top



How to see that it's a VENICE 2 8K



An easy way to see that this is an 8K model is where the menu displays 8.6K 3:2 sensor mode:



Menu shows 8.6K 3:2 sensor mode.

VENICE 28K

How to see if it's a VENICE 2 or original VENICE

Menu shows 6K 3:2 sensor mode.



Original VENICE (6K)

VENICE 2 vs original VENICE



VENICE 2 vs original VENICE with AXS-R7 Recorder



VENICE 2 vs original VENICE Front and Rear





VENICE 2 8K Front



The front of VENICE 2 and original VENICE are the same. The lens mounts are identical. Accessories fit both. The only difference is that the six screws securing the PL mount are now captive and spring-loaded.



6K and 8K Sensor Blocks

VENICE is divided into 2 parts: a camera body and a sensor block.

- The 8K Sensor Block only fits a VENICE 2 camera body.
- The 8K Sensor Block will fit on VENICE 2 6K. (Swap Sensor Blocks.)
- The 6K Sensor Block of VENICE 2 6K fits VENICE 2 8K. (Swap Sensor Blocks.)
- The 6K Sensor Block of original VENICE fits VENICE 2. (Swap Sensor Blocks.)
- The 6K Sensor Block of original VENICE is the same as the 6K Sensor Block of VENICE 2 6K.



Original VENICE (6K) with AXS-R7 Recorder

Sony Cinema Line: FX3, FX6, FX9

Sony consolidated their cine cameras under the name Cinema Line on September 2, 2020. They explained, "The Cinema Line is a series of camera products for a wide range of creators that will bring together Sony's expertise in image quality, attention to detail, technology and passion in digital cinema.

"Cinema Line will deliver not only the coveted cinematographic look cultivated through extensive experience in digital cinema production, but also the enhanced operability and reliability that meet various needs. The new series will extend beyond traditional cinema camera and professional camcorder form factors." That hinted at more Sony Cinema Line cameras to come.

The hint of more Cinema Line cameras to come came quickly. FX6 arrived in November 2020. FX3 followed in February 2021. And now, four years after the introduction of VENICE at Sony Studios in Culver City, Sony launches VENICE 2 6K and VENICE 2 8K.



Sony Cinema Line: VENICE, VENICE 2 6K, VENICE 2 8K

And now there are 6 Cinema Line cameras. The main way to distinguish between the six Sony Cinema Line siblings is by how you will work with them. VENICE and VENICE 2 are for large family gatherings: when you're working with a Focus Puller, Camera Operator (or you're the DP/Operator) and full size camera crew. FX9 is the documentary darling: lightweight and comfortable when resting on your shoulder. FX6 is the handheld polymath, eminently hand-holdable, compact and happily outfitted with accessories for all kinds of situations. FX3 was designed for times when, as Greta Garbo said, "You want to be alone."

How do you decide between VENICE 2 8K and 6K? If you already own a VENICE 6K, the choice is pretty clear: go for VENICE 2 8K. You should be able to swap the sensor block of your original 6K VENICE into VENICE 2 in less than 5 minutes. You can keep the original VENICE as a backup and for jobs where you want simultaneous recording of AXS and SxS media, and for higher framerates.

VENICE 6K





VENICE 6K
Sensor: 24 MP
Sensor size: 35.9 x 24 mm
Internal ND: Clear, ND.3 - ND2.4
Dual base ISO: 500 and 2500
Max Res: 6048 x 4032 X-0CN 16-Bit
Variable framerate 6K 3:2 FF 1-60 fps
Internal RAW: 6048 x 4032 16-Bit
PL Mount & Lever Lock E-mount—FF & S35
Weight (body only): kg / lb
Size (body only): 147 mm / 5 7/8" wide 158 mm / 6.25"" high 235 mm / 9 3/8" long
Battery: 14.8v V-Mount rear plate
Camera Introduced September 2017

VENICE 2 6K



VENICE 28K





VENICE 2 6K
Sensor: 24 MP
Sensor size: 35.9 x 24 mm
Internal ND: Clear, ND.3 - ND2.4
Dual base ISO: 500 and 2500
Max Res: 6048 x 4032 X-0CN 16-Bit
Variable framerate 6K 3:2 FF 1-60 fps
Internal RAW: 6048 x 4032 16-Bit
PL Mount & Lever Lock E-mount—FF & S35
Weight (body only): 4.2 kg / 9 lb 4.2 oz
Size (body only): 152 mm / 5.98" wide 158 mm / 6.25" high 250 mm / 9.84" long
Battery: 14.8v V-Mount rear plate
Camera Introduced November 2021



VENICE 2 8K
Sensor: 50 MP
Sensor size: 35.9 x 24 mm
Internal ND: Clear, ND.3 - ND2.4
Dual base ISO: 800 and 3200
Max Res: 8640 x 5760 X-OCN 16-Bit
Variable framerate 6K 3:2 FF 1-30 fps
Internal X-OCN RAW: 8640 x 5760 16-Bit
PL Mount & Lever Lock E-mount—FF & S35
Weight (body only): 4.3 kg / 9 lb 7.7 oz
Size (body only): 152 mm / 5.98" wide 158 mm / 6.25" high 250 mm / 9.84" long
Battery: 14.8v V-Mount rear plate
Camera Introduced November 2021

Nobutatsu Takahashi, General Manager of Sony Cinema Line



Nobutatsu Takahashi, General Manager of Sony Cinema Line

Nobutatsu Takahashi is General Manager of Sony Camera Division Two and Media Solutions, which includes the Sony Cinema Line. The inline illustrations are from his presentation during our chat.

Jon: Mr. Takahashi, it is a pleasure to see you on screen in this video conference. Can you please tell us about your job at Sony?

Nobutatsu Takahashi: My full name is Nobutatsu Takahashi, but it's long. I grew up in Austin, Texas for about a year, and then I spent three years in California. Everybody called me Nobu, like the famous restaurant.

All proper FDTimes interviews should begin like this, with a discussion of restaurants. Nobu Matsuhisa's original place on La Cienega has been one of my favorite restaurants in LA. Where are you now?

I am in the Sony's new Yokohama office now.

Would you please tell us about your side of the business.

I manage the business administration of Sony's Cinema Line. These are cameras for visual story tellers. If you were to draw a pyramid shape, our CineAlta VENICE, and now VENICE 2, would be at the top. In the middle, you have the FX9, followed by FX6, and then FX3.

We have two different divisions. One is the Media Solutions Business, which was based in Atsugi, and the other is Camera Division Two, which was located in Shinagawa. Now, those two divisions joined together to became one, and moved to our new office in Yokohama. I'm actually working in two jobs, as the General Manager of Media Solutions and also as General Manager of Camera Division Two.

What it is that you do as the General Manager? Is it a world-wide position?

I'm basically doing a business administration type of job, but I work with product planning, designers, engineers, marketing, business planning, all of the related divisions. I don't quite know

how to say it— I'm taking the leadership of the product planning and selling the products, building communication with customers. I'm in charge of everything about our Cinema Line cameras.

This is worldwide?

Yes. Worldwide and based from headquarters in Yokohama. We have sales companies in each region in the world and work closely with them as well.

How would you explain the difference between the cameras within the Cinema Line?

VENICE and VENICE 2 are our top-of-the-line cine cameras. FX9, FX6 and FX3 are more affordable Cinema Line cameras for users often called "filmmakers" and "content creators."

Are you also managing the Alpha (Alpha 1, Alpha 7, Alpha 9) camera group?

I used to work with Alpha cameras, but now I'm focused on the Cinema Line.

How did you get into this line of work?

I used to live in California. I was at Sony Electronics Inc. in San Diego from 2007 to 2010. I was the product manager for camcorders for three years. I went to New York, Los Angeles and Sony Pictures in Culver City many times.



At one time, I worked as a cameraman on the production of a surf film for fun. I worked with my friend who was also at the Sony office then. I enjoyed the filming so much. In California, as you may know, there's a spirit that we should do something, we can make something. It's a challenging spirit. I was so inspired by the west-coast culture.

What was the name of that beach where you were filming?

Cardiff-by-the-Sea. It's located in Encinitas.



Encinitas. You could name a new camera ENCINITAS or CARDIFF or another famous surfing beach.

I would love to.

Nobu Takahashi



So, you are a surfer?

Yes. Big time. Sometimes a typhoon comes and we have good waves here. Japan is an island country with lots of beaches. I also used to work in the sailing shop in Yokohama.

I enjoyed watching the Tokyo Olympic sailing events at Enoshima. They did a beautiful job covering the races. What cameras did you use on your surfing films? Hopefully Sony.

Yes, it was. I think it was a MiniDV camcorder, the FX1000. The interchangeable lens cinema camera was so expensive, I could not afford to buy it, so I used this camera. But, it worked very well. I soon realized that everyone could express their stories like this. Through movie production, they want to share their emotions with other people.

Is it fair to say that in your years at Sony in San Diego, the company did not exhibit a firm commitment to cameras destined for the top of the cinema pyramid you discussed—the apex, the very high-end of cinema production? But that all changed with the VENICE. Could you please explain that change? If you don't agree, of course, please tell me.

We are very glad to see that VENICE has been widely accepted in the industry. We developed this camera by listening thoroughly to the voices of filmmakers, with the aim of becoming one of the best reliability partners for all creative professionals. Sony developed the world's first digital cinema camera, the HDW-F900, in 2000. That was 21 years ago. We continuously sought the feedback of users in evolving new products while continuing the dialogue with them. This was our commitment to the cinema industry. As you mentioned, since the launch in September 2017, VEN-ICE has been adopted by many film titles, including Hollywood blockbusters likethe *Avatar* sequel, among many others. VENICE is used in wide applications, not only for features, but also OTT streaming, TV dramas, music videos, and commercials.

Yes, I know that VENICE was also used for *Top Gun: Maverick* and *Black Widow*. To follow up, what do you think is the reason for the huge success worldwide of the original VENICE?

I think one reason for the success of VENICE, as I mentioned, is that we maintained close collaboration with cinematographers, directors, assistants, rental houses and the creative community by continuously updating the camera and, you could say, making it grow with them. Another factor is the advancement of OTT and the increasing demand for high-end quality and cinema-like content in various applications. These days, we see OTT content is increasing and demand for cameras is increasing proportionately. I think that's the environment behind the success of VENICE. We think those markets, and the products we are making, are very important. We value the cinema industry very much.

Why do you think streaming—Netflix, Amazon, Apple, Hulu, Disney, etc—helped the success of VENICE? Was VENICE not working on major movies before that?

I myself also like to go movies in a theater. It's a totally different experience. I love that. But, now I can watch on demand streaming at midnight or any time I want. I might like to enjoy the movie again, I might want to re-visit and review the movie that I experienced in the theater last time. That option gives audience the ability to enjoy cinema content at any time. Studios can gain more revenue with OTT streaming in addition to theatrical release. I think that is good for the customers, of course, good for the streamers, good for the creators, and good for the camera makers. That may be changing the industry and may help make more content even better.

Are people going back to movie theaters in Japan?

Yes, they are. How about New York?

New York is pretty good too. What's the reason for calling the group of Sony cine cameras "Cinema Line," as opposed to, let's say, "CineAlta?"

The Cinema Line exists for cinematographers, filmmakers, creators and all people involved in content production. We believe that it will contribute to the evolution and popularization of content production centered on the Cinema Line's look and variety. As I mentioned, we see the diversification of movie content in various fields of OTT, websites and social media. Also, the demand for videos for personal use, such as weddings and vlogs, are increasing. Along with this trend, creators are also becoming more and more interested in impressive cinematic expressions. In response to such needs, we developed the cinematic look cultivated through the development of cinema cameras such as VENICE and the high operability and reliability that meet the demands of creators for a wider range of users.

So the idea of the Cinema Line is to provide different cameras for different users?

Yes. For example, consider the swordsmith, the Katana-kaji. Katana was the sword used by Samurai.



The master swordsmith created the Katana that matched the user's needs and skills. We would like to provide for the needs of all levels of content creators—with the same purpose of delivering excitement to the audience, with a unified look and operability that matches their skills, needs, and expressions. That is the

Nobu Takahashi, General Manager of Cinema Line



purpose of Cinema Line. That's why we have a range of different products from VENICE to FX3. You might compare the concept of the Cinema Line to a Katana-kaji.

That also reminds me of Olivander, the wand maker in *Harry Potter*. He said that the wand chooses the wizard. The camera chooses the cinematographer.

That type of concept, yes. We would like to provide the same look, but with different abilities that suit a wide range of cinematographers and filmmakers. That's why we have a range of products.

Can you approximate usage of cameras in the Cinema Line?

We don't have precise percentages. In terms of the potential market, FX6 is large because it is used on many commercial films and web videos. VENICE and new flagship VENICE 2 are very important from the perspective of building the brand. Basically, the FX6 market is very large. But, I refrain from answering with specifics.

The entry level seems to be the segment that's growing the most rapidly everywhere in the world. How do I put this tactfully? Is it important for Sony to capture the high-end of the cinema market? Because, the high-end really may not be that big a market for a huge company like Sony.

As you mentioned, our quantity of high-end cameras is smaller compared to FX6 and FX3. That's true. However, we think that building a camera for high-end cinematography is a very good path to leading technology. We are putting lots of resources into these new technologies. Then we can make those technologies available to the rest of the filmmaker and creator communities. It is a process of democratization that emerges. In these thoughts, building a camera for high-end cinematography is very, very important for us.

So, it's also aspirational. Content creators will always look up to a VENICE, even if they can't afford it. They might say, "Okay, if I buy an FX3 or an FX6, maybe the films I make now will be well-received and someday I'll be able to buy a VENICE."

I want to mention that we do not think the camera, by itself, can make a new era of filmmaking. We think that creativity and the cinematographer's art will define the new era. We would like to co-work with them to bring that new era in the art of visual storytelling with Sony's imaging technology. In that stance, we have to have the communication. We have to get closer to cinematographers with our imaging technology. So, we greatly value their collaboration to get the opening into this new era of creativity. And so, we value the high-end cinematography area very much.

Can we talk a little more about VENICE 2? We all have heard about problems of supply chain. Are you on schedule to deliver VENICE next year?

Yes. We are working hard to deliver VENICE 2 to the market as soon as possible. We look forward to hearing the first impressions of VENICE 2 and incorporating the feedback received from various people for future refinements and expressions on usability. As you mentioned, we are all suffering from supply limitations, but we're working very hard to deliver VENICE 2.

I guess Sony has an advantage because Sony pretty much makes everything that goes into the camera—from the sensor, to the circuits, to almost everything else?

Yes. We have our technology that we are designing ourselves. Of course, we have parts partners. We have discussions with our partners daily, but we are working very hard to get VENICE 2 delivered on time.

Is it your overall strategy that the original VENICE and VENICE 2 — 6K and 8K— can all live side-by-side? Current VENICE is not going to be discontinued?

No, it's not obsolete. That's a very important statement. They can all live simultaneously side-by-side.

Do you see a need for a camera somewhere between FX9 and VENICE, in terms of price point and function?

That's a very good question. I think there are markets for cameras such as F55 that we had in the past. I think that there's a demand for a main camera for low-budget content production. There is also a need for a second, or "B" camera, in multiple camera setups. We would like to study and consider the market situation. But first, we would like to win the trust from the cinema industry with VENICE and then with the addition of VENICE 2. That is the first thing that we would like to do. But, I agree with you, there is a market for those cameras. Nobu Takahashi: "We empower creators to bring a new era..."



I think you already have substantial trust with VENICE. Congratulations, it is quite impressive.

Thank you very much. I think that's because we are getting closer to the cinematographers with our technology. By ourselves, we cannot do anything. We would like to keep the communication and good relationship with the cinematography industry.

What's the position that you would like to achieve in the professional imaging business with the Cinema Line?

Looking back on the past, cinema production has always pursued new forms of expression in the challenging spirit of the production field. For example, the original *Wizard of Oz* impressed the audience by expressing the journey from Kansas to the magical land with color. Sony has been developing cinema cameras, such as VENICE and VENICE 2, under the brand CineAlta. CineAlta is a named after "Cinema," as in movie, and "Alta," as in high in Italian. Showing its brand message of "Emotion in Every Frame," with beautiful images, delicate skin tones and rich gradations in color, are essential to deliver the story and emotion that the creator wants to convey to the hearts of the audience.

Now, computational photography and the cinematography is the key to the future. Sony Cinema Line considers that its mission is to work closely with cinematographers and help them with our image sensor, core device technology, and efficient workflows to open up a new era of movie production. We hope VENICE 2 will be the best partner for everyone involved in high-end cinema production and co-create the world with unique storytelling to



deliver emotion to people. We also want to increase the number of filmmakers and creators who enjoy content production with the Cinema Line and create a world where many stories touch many people. That's my message.

That's a good message. It's impressive how Sony is advancing the world of imaging.

That's coming from cinematographers, not from us. Together with your creativity and advanced technology, we can shape a new era. Hang on ... earthquake. We are having an earthquake now.

[The webcam is shaking.]

Are you safe and OK? We can talk later...

I think it stopped.

Whew. If you're safe, may I ask another question? Do you see the VENICE 2 as a camera mostly for rental houses or do you think it will resonate with owner operators as well?

The majority might be rental houses because it is high-end camera and VENICE was mostly purchased by rental houses. We guess rental houses might be the majority but I think individual cinematographers could also be interested in purchasing it. Myself, I would want to buy one. I'm asking Yutaka Okahashi-san if he would give me a discount.

Are you personally still filming?

Yes. I am still making lots of short films. Recently, I used our FX6 and FX3 on the shoot. They are very good cameras.

That is very unusual to have a company General Manager at Sony also spending time as a cinematographer who actually shoots with the cameras they make.

I love to shoot.

That's very good.

My dream, after retirement from Sony, would be to have a production company. I would call it Orange Days Production. In San Diego, California, there are very beautiful sunsets. My wife calls these orange days. That's my dream. And it was an honor to see you.

For me as well. Thank you very much.

Q&A with VENICE 2 Team



Jin Yamashita, General Manager of Product Planning



Yutaka Okahashi, Product Planner



Yuuji Ohba, Project Leader of Design Team

This Q&A is edited from several video conferences over two months. At Sony Corporation in Yokohama, Japan, Jin Yamashita is General Manager of Product Planning. Yuuji Ohba is Project Leader of the Design Team. Yutaka Okahashi is Product Planner of VENICE / VENICE 2.

For clarity, the original camera is still called VENICE. The two new models are VENICE 2 8K and VENICE 2 6K.

Jin and Yutaka have been incredibly helpful advisors over the years—updating, advising and explaining FDTimes articles and special reports on F65, F55, AXS-R7, VENICE, and now VENICE 2. I would like to thank them for late nights, early mornings and mutual jet-lag across our 13-hour time differences.



VENICE 2 8K

Jon Fauer: Can you please summarize the main concept and how you will position the camera?

Jin Yamashita: First of all, we are so grateful that VENICE has been well received by the market since its launch. We really feel it is great news for Sony that many people are using and appreciate this camera. In designing VENICE 2, one of our most important consideration was a smooth migration to the next camera by users. We wanted it to be intuitive for operators and camera assistants, so the user interface and controls should be consistent. Also color reproduction, operation of the internal ND filters, dual-based ISO and the Extension System.

No one should be worried about a learning curve with this camera.

VENICE 2 Q&A: Name, Nameplates, Highlights, EVF



The main physical difference is a smaller size when compared with VENICE and external recorder AXS-R7.

We cherished the voices of customers, so in designing VENICE 2, we incorporated their comments into the essence to the new camera. It is an evolution of image quality, usability and unique features based on the current, highly regarded VENICE. We think VENICE 2 will increase their choices and meet their needs.

Yutaka Okahashi: We got a lot of feedback from users. This was very helpful for improvements. A good example, based on customers' comments, was moving the Ethernet LAN port from the operator side to the right rear side where it is out of the way.

What is the real background of the name—VENICE 2? Venice, Italy; Venice Film Festival; Venice Beach?

Yutaka: VENICE was named after the location Venice, in Los Angeles, California because we expected the camera to be widely accepted and used on the US West Coast which is central to the world of filmmaking. It is where Hollywood exists. Also, Venice is a neighborhood once called the Venice of America because of its canals. Many movies were shot there and the connection with the cinema industry is strong. That's the background of VENICE name and it became well accepted by many users in the industry. So, we wanted to keep this name and make it clear that this camera is the next model of VENICE.

Can a user tell the difference from the outside whether you have a 6K or an 8K camera? Is 6K or 8K written somewhere on the outside?

Yutaka: VENICE 2 8K has "8K" written on the top left corner of the front. VENICE 2 6K does not have any lettering there.

How can you tell if it is a VENICE or VENICE 2 6K camera?

Yutaka: The easiest way to see the difference is that the fan vents go all the way to the bottom on VENICE 2. Also, please notice the four M3 screw threads towards the rear of the camera right side. They are provided so rental houses and users can attach a plate to identify the camera, for example 6K or 8K, A camera or B camera, the name of the rental house, and so on.

With those four screw threads you provide on the right side, I can imagine an entire cottage industry of artists making custom nameplates for the camera. Will you continue supporting the original VENICE?

Jin: VENICE 2 will be the flagship of the CineAlta cameras in our Cinema Line cameras and it will not replace anything in Sony's current lineup.

Is the 6K sensor of VENICE 2 the same as the one currently on VENICE?

Yuuji Ohba: Yes, it is exactly the same.

What is the difference in dynamic range, also known as exposure latitude?

Yuuji: VENICE 8K has 16 stops of exposure latitude. On the other hand, VENICE 6K has 15+ stops.

Where would we see the main differences?

Yutaka: According to our tests, highlight retention is about the same with both the 6K sensor and the 8K sensor. You will notice more shadow detail with the additional stop of exposure latitude in the VENICE 8K.

However, when you increase the exposure index of the base ISO, the exposure latitude for highlights will be extended.

Do VENICE and VENICE 2 use the same viewfinder?

Yuuji: Yes. The EVF viewfinder has not changed.

What ISO would you recommend to preserve highlight details?

Yutaka: With VENICE 8K, the native base ISO is 800 and that provides a latitude from +6 stops of highlights to -10 stops of shadow detail. If you "push" one stop, to ISO 1600, then you increase highlight latitude to +7 stops (and -9 stops in the shadows.) And, of course the 8K sensor has a very good signal to noise ratio.

VENICE 2 Q&A: Sensor Blocks, Data, Storage, Users



So that means even pushed one stop, the picture is very good.

Let's say you are a cinematographer working with the VENICE 8K. And you have a 6K spare sensor block. How long does it take to switch the sensors? And do you need a clean room?

Yutaka: You don't need a clean room. Our interchangeable sensor block assembly completely keeps the sensor shielded from dust and dirt. It takes under five minutes. There are four captive screws.

What would be examples of when a cinematographer would change from the 8K to the 6K sensor block?

Yutaka: One motivation for changing the sensors would be for higher frame rates. For example, the 8K sensor records X-OCN XT up to 30 fps in 3:2. The 6K sensor records X-OCN XT up to 60 fps in 3:2.

There are many more combinations of recording formats and maximum frame rates, so please see our chart.

Here is another scenario. Always capturing at 8K takes up more data. So, there may be times when the user will use the 6K VEN-ICE. And then switch the sensor for special scenes that might require image stabilization, repositioning or blow-ups in post-production.

How much more data does the 8K sensor use than the 6K?

Yuuji: Nearly double. You might think that the difference between the 6K and 8K sensor is only 2K. But that delta is only the horizontal pixel information. The total pixel count of the Full Frame 6K sensor is 24 MP and the 8K sensor is around the 50 MP. So, it is double the data storage and data rate.

But I guess as storage becomes ever more affordable, 8K becomes the new normal?

Jin: Yes. Currently, average budgets in the US and UK are higher than other regions. They do not seem to be too concerned about media cards and storage. We agree, the main intention of the new camera is the 8K model.

But in other regions worldwide, it's not the same situation. For example, in Japan, theatrical feature film content for Japanese cinemas is usually released as 2KDCP. Production costs are limited. For these markets, probably the VENICE 6K model will be suitable at the moment. So, it depends on the customers. That is why we are launching both the 8K camera and the 6K camera at this time.

Which model do you think existing VENICE users will try?

Jin: I think that customers who already have the original 6K VEN-ICE will prefer to purchase the 8K Venice 2 because they already have a 6K sensor block that can be used in either camera. But in the situation rental houses who do not have a VENICE yet is different.

There are a lot of rental houses and potential customers worldwide who do not have the original VENICE yet. So they may prefer to purchase the 6K VENICE 2 now and upgrade to an 8K sensor block at a later date.

VENICE 2 Q&A: Data Rate, Drives, Rialto, Archiving



Could you please explain the Zoom to Fit function?

Yutaka: Zoom to Fit works this way. Let's say you are capturing in a 3:2 format. But you are viewing on a 17:9 monitor. Traditionally, the left and right sides of the 3:2 image would be pillared—black columns at left and right. So, zoom to fit lets you fill the entire monitor screen with the image. But now, the top and bottom are cropped.

Jon: Is it the familiar VENICE workflow? Is there anything special about finishing in 8K?

Yutaka: Nothing special. Our SDK is implemented by other vendors for their nonlinear editing, VFX and color-grading software.

What is the approximate data rate in 8K Full Frame, 3:2, 24 fps?

Yutaka: In 8K Full Frame, 3:2, 24 fps, data rate is about 3,658 Mbps when recorded in X-OCN ST. And 5,345 Mbps in X-OCN XT.

Is the X-OCN data rate constant?

Yuuji: Yes, it is a constant data rate. It is determined by imager mode and the frame rate. Here is another example: with VEN-ICE 2 8K, the maximum data rate goes up to 6,606 Mbps for Full Frame 8.2K 17:9 at 60 fps. At 24 fps, 8.2K 17:9 is 3,861 Mbps.

That is the reason we are introducing a new AXSM media card with the model name S66. The 66 number refers to the 6,606 Mbps data rate.

I guess you would recommend using SSD drives rather than

spinning hard drives?

Yutaka: Yes. SSD storage is not mandatory, but it's recommended for most editing.

VENICE 2 6K can use the current Rialto extension system now. Will there be an 8K Rialto version?

Jin: Yes, it is being worked in. Because of the higher data rate, it requires a different cable system. It is planned to be release by early 2023.

You mentioned one of the new features of 8K VENICE 2 is documentary archiving. What does that mean?

Yutaka: Let me explain with an example. Let's say you are filming a nature documentary. VENICE 2 in 8K offers you the highest quality and the footage will be future-proof for quite some time. Or you are recording the paintings and historical artwork in a museum. This is a special type of image capture. Archiving means preserving the best image quality—making it future-proof.

Jin: And speaking of future-proof, we are already seeing consumer 8K televisions for the home. I think that suggests 8K OTT streaming and broadcast is not too far away. So, capturing in 8K now ensures that your data files are ready for that time.

Can VENICE 2 record two different formats simultaneously?

Yutaka: Sorry, neither VENICE 2 8K nor VENICE 2 6K have simultaneous recording. This is one of the comparisons to VEN-ICE. A distinctive function of the original VENICE is that it has

VENICE 2 Q&A: Formats, Anamorphic, Aspect Ratios, Dual Base ISO



simultaneous X-OCN and XAVC 4K or HD ProRes recording. People might ask, will VENICE still be part of the Cinema Line? The answer is yes—and people who want dual format recording may appreciate that.

When would dual format recording be helpful?

Jin: Some users may want to begin offline editing as soon as possible. They can download the X-AVC files directly onto their PC on set, or near set, for immediate dailies viewing or editing. The X-OCN files go to the post-production house. That's the purpose of dual recording on VENICE.

But, with VENICE 2 as the flagship model, we assume there will be a DIT, data wrangler or near-set editor who can generate ProRes or DNxHD dailies from the camera original X-OCN files. That is a way to differentiate between VENICE and VENICE 2.

To make VENICE 2 smaller, we put the X-OCN recorder directly inside the camera, compared to VENICE which records internally onto an SxS memory card and has an external AXS-R7 RAW recorder for X-OCN. VENICE only records XAVC, ProRes or MPEG HD internally.

Now, we get to anamorphic. Can you please explain the 6:5 aspect ratio Super35 anamorphic format?

Yutaka: Sure. On VENICE 2 8K, the 6:5 Super35 squeezed image area measures 24.1mm wide x 20.2mm high and it is 5.8K.

On VENICE 2 6K, it is 24.3 mm wide x 20.4 mm high and it is 4K.

The reason for having a 6:5 mode is mathematical. 6:5 is the same as 1.2:1. (Divide 6 by 5.) If you are working with a 2x squeeze anamorphic lens, multiply 1.2 by 2 and you get widescreen 2.4:1 (rounded up from standard 2.39:1)

So, VENICE and VENICE 2 6K have two types of Super35 anamorphic modes—6:5 and traditional 4:3. Essentially, you choose the mode that matches the image diagonal of your anamorphic lens. 6:5 has an image height of 20.4 mm compared to 4:3 which has a traditional height of 18 mm.

What about Full Frame anamorphic?

Yutaka: For Full Frame anamorphic on all cameras, you would use the entire 3:2 sensor area measuring 35.9 x 24 mm.

Do you have a 2:1 aspect ratio anamorphic mode, which is popular for Netflix lately?

Yutaka: If you have 2x squeeze anamorphic lenses, the squeezed ratio on the sensor is 1:1. I would recommend using the Full Frame 3:2 or Super35 6:5 imager modes. And then add user-defined frame lines. VENICE has excellent frame markers. There are presets and two user-adjustable frame markers.

What is the definition of IMAGER MODE? Can we say it is an image area that fully fills the EVF or monitor, and the unused pixels are not recorded?

Yutaka: Imager mode means scanning area of the sensor. It is the same as recorded area of the camera.

Can you please explain how dual base ISO works?

Yuuji: VENICE has two base ISO sensitivities, a low and a high. It means the signal-to-noise ratio and dynamic range is consistent. For VENICE 2 8K, the recommended base ISO is 800 and the high ISO is 3200. For VENICE and 2 6K, base ISO is 500 and high is 2500. Of course, you can adjust below and above those settings.

Is the cooling fan in VENICE and VENICE 2 the same?

Yuuji: Yes, the physical size is the same—80 mm. The physical fan is the same. But the part number is different between VENICE and VENICE 2 because the wiring harness is different. VENICE 2 6K and VENICE 8K have the same fan.

Does VENICE 2 support lens metadata?

Yutaka: Lens data support is the same as VENICE. We support

VENICE 2 Q&A: Lens Metadata, Challenges, Design



Yutaka Okahashi and Yuuji Ohba with an early VENICE 2.

Although it might appear that they are celebrating in a wellstocked saloon, in fact, this is a set where cameras are tested. Similar sets are located at Sony DMPC (Digital Media Production Center) facilities in Los Angeles and Pinewood Studios, UK.

Cooke /i Technology. We also support ZEISS eXtended lens data in ZEISS Compact Primes, ZEISS Supreme Primes and FUJINON Premista.

What happens if there are future updates to lens metadata, such as distortion mapping?

Yutaka: We will have to implement those changes in future firmware updates. For example, the Zeiss eXtended data originally did not include zoom position information. But when Fujinon launched the Premista zooms, they updated the Zeiss extended lens data and we implemented that in Venice 1 version 6.0. When lens vendors will announce new lens data technology, we need to implement that.

Are many VENICE customers using lens data?

Yutaka: Yes, especially in the VFX market. For example, the extended metadata is embedded in the X-OCN files. Originally, Nuke and After Effects did not read the X-OCN metadata directly. After we received many requests from DPs and post production companies to implement it, we now offer native X-OCN lens data support in Nuke.

If you use the native Sony E-mount on the VENICE, does it record the metadata from E-mount lenses?

Yutaka: Yes, focus, iris and additional information is displayed and recorded.

What were the challenges from the engineering and design point of view for this new camera? I'm sure it was quite difficult because it took four years.

Yuuji: X-OCN provides excellent quality, but the power consumption is more than SxS recording XAVC or MPEG. Also, the 8K sensor manages twice data of a VENICE 6K sensor. In order to put the 8K sensor into an equivalent VENICE chassis, power reduction and heat dissipation was a big issue. At the same time, providing water spray resistance equivalent to IPX3 was another major mechanical and electrical challenge. For those purposes, we adapted the latest signal processing structures this year and eliminated the waste in the circuits. But we achieved the increases to the necessary functions. For example, individual LUTS can now be included in all the outputs.

Furthermore, the various voltage generating systems have been improved compared to the VENICE. In terms of the mechanical design, it follows VENICE but the VENICE 2 heat dissipation flow path and the heat conduction efficiency has been reviewed and improved. Because of a significantly lower temperature rise compared to the previous model, we reduced the risks of artifacts and increased noise due to sensor heat.

The VENICE 2 6K sensor is exactly the same sensor as the VEN-ICE. However, because the X-OCN recording operation is now internal, the VENICE 2 chassis is more compact than the combination of VENICE with its AXS-R7 recorder. VENICE 2 has various UI improvements and ProRes 4K can be recorded.

From a visual point of view, I would say that VENICE 2 8K can shoot even more natural pictures than VENICE with its high density 8K sensor and new optical low-pass filter. It seems that there is a tendency to think of the 8K sensor as mostly an increase in the resolution. But rather than aiming for a resolution competition, the effect of over-sampling 8K and the new optical low-pass filter makes it possible to appreciate how natural its images look. It's not a resolution game. It offers smoother skin tones, more natural images. We hope that customers will feel that.

Please tell us more about the optical low-pass filter. Is it even necessary with such a fine sensor?

Yuuji: Yes. It is very necessary. Even with the high density of the 8K sensor, we want to reduce aliasing and artifacts and improve color clarity.

Thank you very much for your time.

VENICE 2 Camera Body Views



VENICE 2 Camera Views







VENICE 2 8K Imager Modes (v1.0)



Imager Mode 1	Format ²	Resolution	W x H (mm)	Project Frame Rate ³	fps ⁴	License ⁵
5.4K 16:9	U35	5434 x 3056	22.6 x 12.7	23, 24, 25, 29, 47, 50, 59	1-60, 66, 72, 75, 88, 90	-
5.8K 17:9	U35	5792 x 3056	24.1 x 12.7	23, 24, 25, 29, 47, 50, 59	1-60, 66, 72, 75, 88, 90	-
5.8K 6:5	U35	5792 x 4854	24.1 x 20.2	23, 24, 25, 29, 47	1-48	Anamorphic
7.6K 16:9	FF	7680 x 4320	32.0 x 18.0	23, 24, 25, 29, 47, 50, 59	1-60	Full Frame
8.2K 17:9	FF	8192 x 4320	34.1 x 18.0	23, 24, 25, 29, 47, 50, 59	1-60	Full Frame
8.6K 3:2	FF	8640 x 5760	35.9 x 24.0	23, 24, 25, 29	1-30	Full Frame

1: This is firmware v1.0. Additional Imager Modes inevitably become available with future firmware updates.

If an imager mode is not shown in the chart above, you can still choose any aspect ratio you desire with user-defined frame lines. Then, simply pick the closest sensor mode that fits, and crop the remainder in post.

2: U35 is Angenieux's good designation of formats larger than Super35, with image heights greater than 18 mm and usually around 20 mm. It can also be called S35+ but neither designation is official to Sony. FF=Full Frame

3: For simplicity, Project Frame Rate numbers are abbreviated. 23=23.98; 24=24; 25=25; 29=29.97; 47=47.95; 50=50; 59=59.94

4: These frames rates are for standard base ISO 800. In high base ISO 3200, 1-7 fps is not available.

5: You only need the Anamorphic License if you want to desqueeze the image on the EVF or monitors. If you are shooting with spherical lenses and would like this sensor mode, then you can select if without a license.

FDTimes has consolidated and modified this table from several Sony charts. Details may change.

VENICE 2 6K Imager Modes (same as original VENICE, v6.0)



Imager Mode ⁶	Format ⁷	Resolution	W x H (mm)	Project Frame Rate ⁸	fps	License ⁹
3.8K 16:9	S35	3840 x 2160	22.8 x 12.8	23, 24, 25, 29, 47, 50, 59	1-60, 66, 72, 75, 88, 90, 96, 100, 110	-
3.8K 16:9 Surround View	S35	3840 x 2160	22.8 x 12.8	23, 24, 25, 29, 47	1-48	-
4K 2.39:1	S35	4096 x 1716	24.3 x 10.3	23, 24, 25, 29, 47, 50, 59	1-60, 66, 72, 75, 88, 90, 96, 100, 110, 120	-
4K 17:9	S35	4096 x 2160	24.3 x 12.8	23, 24, 25, 29, 47, 50, 59	1-60, 66, 72, 75, 88, 90, 96, 100, 110	-
4K 17:9 Surround View	S35	4096 x 2160	24.3 x 12.8	23, 24, 25, 29, 47	1-48	-
4K 4:3	S35	4096 x 3024	24.3 x 18.0	23, 24, 25, 29, 47, 50, 59	1-48, 49-60, 66, 72, 75	Anamorphic
4K 4:3 Surround View	S35	4096 x 3024	24.3 x 18.0	23, 24, 25, 29, 47	1-30	Anamorphic
4K 6:5	U35	4096 x 3432	24.3 x 20.4	23, 24, 25, 29, 47	1-30, 31-60, 66, 72	Anamorphic
5.7K 16:9	FF	5674 x 3192	33.7 x 19.0	23, 24, 25, 29, 47	1-30, 31-60, 66, 72	Full Frame
6K 2.39:1	FF	6048 x 2534	35.9 x 15.0	23, 24, 25, 29, 47, 50, 59	1-60, 66, 72, 75, 88, 90	Full Frame
6K 17:9	FF	6054 x 3192	36.0 x 19.0	23, 24, 25, 29, 47, 50, 59	1-60, 66, 72	Full Frame
6K 1.85:1	FF	6054 x 3272	36.0 x 19.4	23, 24, 25, 29, 47, 50, 59	1-60, 66, 72	Full Frame
6K 3:2	FF	6048 x 4032	35.9 x 24.0	23, 24, 25, 29, 47, 50, 59	1-60	Full Frame

6: These details are mostly the same as for VENICE, firmware v6.0.

7: U35 is Angenieux's good designation of formats larger than Super35, usually with an image height of around 20 mm. FF=Full Frame

8: For simplicity, Project Frame Rate numbers are abbreviated. 23=23.98; 24=24; 25=25; 29=29.97; 47=47.95; 50=50; 59=59.94

9: You only need the Anamorphic License if you want to desqueeze the image on the EVF or monitors. If you are shooting with spherical lenses and would like this sensor mode, then you can select if without a license.

FDTimes has consolidated and modified this table from several Sony charts. Details may change.

New 1 TB S66 AXSM Memory Cards

A few examples of VENICE 2 8K Recording Times with AXS-A1TS66 Memory Cards

Imager Mode	Project Framerate (fps)	X-OCN XT (minutes)	X-OCN ST (minutes)	X-OCN LT (minutes)
8.6K 3:2	23/24	23	34	58
	25	22	32	55
	29	18	27	46
8.2K 17:9	23/24	32 min	47	80
	25	31	45	77
	29	25	37	64
	50	-	22	38
	60	-	18	32

Two AXS Memory Card slots, A and B. SxS Cards do not fit.

AXS Memory Card

Camera Control

An accessory Wi-Fi camera control dongle plugs into the USB type A port at the top rear of the camera.

Smartphone, tablets and PC/Mac computers can control all VENICE and VENICE 2 functions with a web browser.

For VENICE 2, Pomfort Livegrade plans to offer VENICE 2 LUT and CDL control at a future date. You can then connect via Wi-Fi or Ethernet cable.

Camera Control for VENICE 2 connects from Laptop to Camera via Ethernet cable.

Outfitting VENICE 2

The next 16 pages show various VENICE 2 configurations.

There are many more ways to build, outfit and accessorize your camera than the examples shown here. These are just a few examples.

Ingredients: Sony VENICE 2 8K with Preston Light Ranger 2, Bright Tangerine Misfit Kick and Expert Kit, ZEISS Supreme Prime.

VENICE 2 with Preston Light Ranger 2, Bright Tangerine

Not having a Preston Light Ranger 2 atop your VENICE 2 is like a Sushi chef without a Yanagiba. Full Frame, 6K or 8K, wide open at T1.5, your depth of field might be slim as a sliver of Usuzukuri—thinly sliced sashimi.

The Preston LR2M sensor on the VENICE 2 at right has a 20° field of view for mid to long focal length lenses. The companion LR2W sensor unit provides a 50° field of view for wide to mid-focal length lenses.

The Light Ranger 2 uses an infrared distance measuring system with 16 distinct zones. This lets the focus puller visualize distances of an entire scene without looking away from the monitor.

Sixteen green/white rectangles are superimposed over the image, with a horizontal line across the middle. The height of each rectangle corresponds to the distance you have set on the HU4 Hand Unit. White rectangles above the horizontal line indicate the subject

rods

is further away than the current knob setting of the HU4. White rectangles below that line indicate the subject is closer than the knob setting.

Once the subject is in focus (within the depth of field of your current HU4 knob setting), the rectangles over the subject turn green.

motor

motor

drumstix

Preston LR2M

I R7

VENICE 2, LR2M, Expert Kit, Misfit Kick, Atomos Shinobi 7, Leitz Prime

VENICE 2, Dionic XT 90 VM, Bolt 4K 1500, D-Box, Cine 7, Optimo Prime

VENICE 2, Dionic XT 90, Bolt 4K 1500, D-Box, Angénieux Optimo Prime

Angénieux Optimo Primes. Full Frame, 46.31 mm image circle. /i lens metadata. PL Mount. IOP Integrated Optical Palette System with interchangeable internal element, iris, rear filter.

Set includes:

18, 21, 24, 28, 32, 40, 50, 60, 75, 100, 135, and 200 mm.

Cooke S7/i and Anamorphic/i Primes on VENICE 2

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The lenses shown on these pages are just a small selection of the many Full Frame choices now available. The lament when original VENICE arrived was scarcity. Now there is an abundance.

Cooke 100mm T2.3 2x Anamorphic /i SF.

Epic S35 format coverage: 33.54 mm maximum image circle. Cooke calls this "Epic S35mm Format." Others call it Ultra35 or S35 Open Gate.

SF means Special Flare because flares and other anamorphic aberrations are more pronounced. Set includes: 25, 32, 40, 50, 75, 100, 135, 180, and 300 mm.

All have a $2 \mathrm{x}$ anamorphic squeeze ratio. PL Mount. /i lens metadata.

ZEISS Supreme and Radiance Primes on VENICE 2

ZEISS Supreme Prime 135mm T1.5

You can see that it's a Supreme Prime Radiance 135mm T1.5 by the gold band

Leitz Thalia Primes on VENICE 2

Leitz Thalia primes have an image circle diagonal of 60mm, covering not only Full Frame but also 65mm format. Thalia set includes: 24 Makro, 30, 35, 45, 55 Makro, 70, 90 THALIA-T, 100, 120 Makro, and 180 mm.

Cooke Varotal/i on VENICE 2

Cooke Optics just introduced two new Varotal/i Full Frame Zooms: 30-95 mm T2.9 and 85-215 mm T2.9. They come in PL or LPL mounts. Maximum image coverage for both is 46.31 mm diagonal.

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Cooke Varotal/i Zoom 30-95 mm T2.9 Full Frame

Varotal/&FF

30-95

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FUJINON Premista Zooms on VENICE 2

Premista and Varotal/i Top Views on VENICE 2

Angénieux Optimo Ultra Compact Zoom on VENICE 2

Lens support with built-in /i Lemo connector in the middle is a good idea—at the balance point of the lens. Most zooms put their support way out front, putting extra weight on the mount and harder to balance with lighter, smaller cameras.

VENICE Removable PL Mount

The PL Mount of VENICE 2 and original VENICE is the same. It is removed by loosening 6 captive silver 2.5 mm screws. (On original VENICE, they are not captive.)

There are /i lens data pogo pins in both the 12 o'clock and the 3 o'clock positions. Presumably the 3 o'clock position is for situations where the camera is turned 90° on its side for vertical formats and you still want to see the lens witness marks. And no, VENICE does not read LDS or LDS-2 lens metadata.

This is the rear view of the VENICE PL Mount-the side that touches the front of the camera. Note the cutout that makes room for the VENICE's native E-mount lever lock. Also, note the pogo pin pass-through connectors for /i lens data.

Why would you want to remove the perfectly good PL mount? Because the E-mount that lurks beneath it opens up a large world of E-mount lenses-especially specialty lenses like macros, telephotos, tele zooms, G Masters, as well as all kinds of lens mount adapters.

Sony E-mount G Master on VENICE 2

Sony E-mount FE 50mm F1.2 **Full Frame**

SIGMA DG DN E-mount lenses on VENICE 2

SIGMA DG DN Art E-mount lenses: 14-24, 24-70, 35, 85, 105 mm Macro. DG DN Contemporary E-Mount: 28-70, 100-400, 24, 35, 45, 65, 90 mm DG DN Sport E-Mount: 150-600

6

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SIGMA also makes PL Mount Cine Lenses. Full Frame High Speed: 14, 20, 24, 28, 35, 40, 50, 85, 105, 135 mm.

SIGMA PL Mount Full Frame Classic Art Primes: 14, 20, 24, 28, 35, 40, 50, 85, 105, 135 mm.

Illumination circle: 46.3 mm

SIGMA FF Zoom: 24-35 mm Image circle: 43.3 mm

> SIGMA 150-600mm F5-6.3 DG DN OS | S E-mount Full Frame

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Sony E-mount

When you remove the PL Mount from VENICE, a Sony E-mount with locking lever is revealed. It has an 18 mm flange focal depth (FFD).

There are two ways to attach other lenses. You can use a commonly available E-mount adapter that fits directly into the E-mount.

Or, you can get more sophisticated mounts that actually fit on top of the VENICE's native E-mount and its locking lever. These mounts attach securely with six 2.5 mm screws in the same threads used for the PL mount.

1. To remove PL mount, loosen 6 hex screws (2.5 mm)

2. Separate the PL mount from the camera

3. The locking-lever Sony E-mount is revealed

Leitz M 0.8 Mount and Leica M 0.8 Noctilux

Leica M and M 0.8 lenses have a 27.80 mm flange focal depth and a familiar Leica M Mount. Here is the Leica M (M 0.8) mount, made by Leitz for Sony VENICE. It attaches with 6 screws over the existing E-mount.

In addition to the vast selection of Leica M Full Frame lenses made since 1954, there are eight cine-style Leica primes from Leitz with industry-standard M 0.8 focus and declicked iris gears: 21, 24, 28, 35, 50, 50 Noctilux, 75, and 90 mm.

Leica M Mount for VENICE by Leitz.

The M Mount attaches with six 2.5 mm screws — just as the VENICE PL Mount was secured.

VENICE 2 with Leica M 0.8 Noctilux-M 50 f/0.95 ASPH.

Leitz ELSIE Prime on VENICE 2 – LPL Mount Only

And what about ARRI Signature and Leitz ELSIE lenses? They only come with LPL mounts.

You could use an E-mount to LPL Adapter, made by Vocas, Wooden Camera and others. Or, get a VENICE LPL Mount from KipperTie, Wooden Camera. More are coming soon.

LPL mount for Sony VENICE by KipperTie.

This is the back side of the LPL mount. The milled out area makes room the E-mount locking levers.

Sony VENICE with **Kippertie LPL Mount**

Wooden Camera's LPL Mount for Sony VENICE has connectors that send /i lens metadata directly to the camera via pogo pins.

INCLUDED LPL LENS CAP

OPTIONAL 15 MM SUPPORT

If you don't have time to mess with six 2.5 mm screws to swap mounts, you can use an adapter directly.

Near left: VOCAS E-mount to LPL adapter

Far left: Vocas E-mount-to-LPL adapter, exploded view.

ARRI Signature Zoom and Prime on VENICE 2 – LPL Mount Only

ARRI Signature Zoom 45-135 mm T2.8

ARRI Signature Prime 35mm T1.8

Rob Mclachlan ASC, CSC on Available Light – Homecoming

Rob's McLachan's VENICE 2 film begins in the bright sunlight of Palm Springs, drives into LA night exteriors, takes off from LAX and lands in majestic British Columbia locations. The title is *Available Light - Homecoming*.

Rob said, "Any half-decent DP with three truckloads full of grip and electric gear and gorgeous models can make any camera look great. I thought, for my purposes and for every other cinematographer, let's just really put it through its paces, be natural, and hit it with some serious practical situations.

"Normally I use a light Hollywood Black Magic filter, but for this film, I wanted to show the audience a perfectly clean image with nothing between them and the camera. It's not the least bit harsh or videoey. It feels very filmic to me. The image quality is really gorgeous and of course, camera assistants love the camera. Everything is where they want it to be.

"So we up to this little island where I grew up in summers and had some connections. We basically had friends and crew for models. No hair, makeup, or wardrobe people were present. It was just natural. We had ZEISS Supreme and FUJINON Premista lenses. No filtration, just internal NDs. I kept it as clean as I could, and I shot in a 3:2 aspect ratio. I've never actually done that. I had been shooting with that 3:2 sensor in the original VENICE for a couple of years now and I never actually looked at how well the lenses worked edge-to-edge filling the entire frame. Because you're always cropping 2:1, 2.39:1 or 17:9.

"The other benefit of the Full Frame 3:2 8.6K format was that it gave you way more sky in the shot. Coming out of the grading session a couple of days ago, what really struck everybody was how we couldn't take our eyes off the nuance and the detail in the sky that so often burns out. These were in places where you would expect to have no detail in a hot, whited-out, overcast sky.

"The dynamic range is even better than even the former VENICE, which I had been using a lot. At the same time, it was holding detail in the shadows. For instance, the shot of the float plane landing. The sky is gorgeous, but we zoomed into the treeline to the island across the way. There's still texture in there. It's not blocked up. The really striking thing about it, apart from the dynamic range, is how clean the shadows are. They're absolutely clean as a whistle."

Rob Mclachlan: Palm Springs

Above: Near Palm Springs. The VENICE 2 8K image sensor has a rolling shutter that is said to be the fastest in the market. Below: Rob said, "The skies and the shadows are just so clean. No noise. I was shooting all the night scenes at 3200 ISO. This one is at T8."

Rob Mclachlan: British Columbia

Rob said, "We used real people in the film. Braden Haggerty is the leading lady. She was my second AC from 1994-'99. She's now a top underwater cinematographer in western Canada. She's also a stunt driver."

Rob Mclachlan: Available Light

Above: "This is available light. from just the one window. It was very heavily overcast outside at that point. Pouring rain, in fact." Below: Braden Haggerty and Tim Nagasawa, who was also the show's DIT.

Rob Mclachlan

Rob McLachlan with VENICE 2 8K in and around Palms Springs. BTS Production stills by Jeff Berlin.

Claudio Miranda, ASC, ACC on The Camera Test

Claudio said, "I hate doing camera tests of freaking fruit baskets and charts and stuff. That's so not informative. I gravitate toward doing something with people in real environments.

So, for *The Camera Test* for VENICE 2, I said, "How about if we do it with *Dig* light?" *Dig* was the short film I shot with the original VENICE four years ago. I shot the whole thing with Master Anamorphics.

"The original VENICE has a great highlight roll-off ability. On this new VENICE 2, I think it curves off even better. I wanted a test that would show this highlight roll-off, a scene that would have massive exposure differences, not on a stage with just 10 stops of dynamic range, which doesn't really help anything. And then to be able to use freaking old car headlights working the scene from 40 feet away, that was my only lighting besides a campfire."

Claudio Miranda's The Camera Test Frames

Claudio Miranda's *The Camera Test* Firelight Frames

VENICE 2 8.6K

Claudio Miranda's The Camera Test Camera Setup

Camera Left side of VENICE 2 8K with Master Anamorphic. This is also called the Operator Side or Smart Side because, in the film era, menus and footage counters were there. VENICE 2 provides a mini menu for the camera operator.

The Camera Right Side is also called the Assistant Side and sometimes the Dumb Side. There are two problems with that. Assistants in Europe may have worked the right side, but not always in the USA in the film days. Bob Smathers, who was the Camera Assistant/ Focus Puller on Claudio Miranda's *The Camera Test*, points out that these days, most camera menus are on the right side. And so the Assistant's dumb side should be renamed smart, while the Operator who cannot see the menu is now relegated to a less informative, new dumb side. Bob adds, "One other fun fact is that ACs used to use to use a make-up compact mirror to catch a look at the counter when we were stuck on the dumb side." Note Bob's Light Ranger atop VENICE 2.

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