

CineAlta Super 35mm 4K Family





## **Unlimited Creative Possibilities**

Perfection. It is the driving force behind everything Sony® does. It is the result of inspired design, meticulous engineering and a legacy of innovations.

The CineAlta™ "infinity" logo symbolizes Sony's endless pursuit of perfecting technology to provide you with unlimited creative possibilities.

The CineAlta Super 35mm cameras represents the culmination of everything Sony knows from lens to screen. It's diverse team of experienced engineers provide advanced engineering knowledge, traditional craft skills and meticulous attention to detail. And it's also the result of working closely with film professionals to determine what would enhance their creative toolbox.

Sony's expertise in optics, image sensors, digital signal processors, digital encoding and professional-grade workflows, goes into every camera of the CineAlta family.

The CineAlta brand is designed and engineered to create perfectly balanced camera systems capable of delivering an experience that is second to none. A masterful blend of art, technology, and craftsmanship, CineAlta Super 35mm cameras redefine cinematography now and for the future.





CineAlta Super 35mm Family



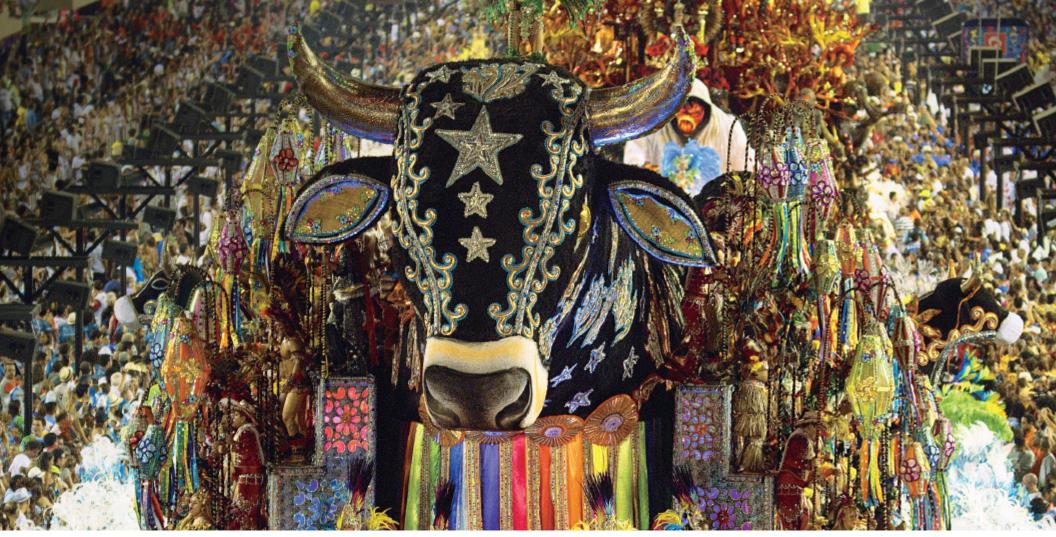
 $\mathsf{F65}$  8K Sensor Digital Motion Picture Camera



# Technology

Our top engineers have spent years creating breakthroughs in sensors, image processors, and recording media, and now we introduce new CineAlta 4K cameras that deliver unprecedented image quality.



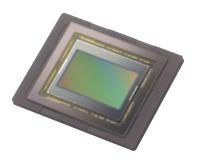


Produced by TV Globo with the F65.

# Sony Super 35mm CMOS Sensors Technology

## Spectacular 8K/6K/4K/HD

State-of-the-art image sensors are at the heart of the Sony CineAlta Super 35mm cameras. Super 35mm CMOS sensors deliver pristine images with stunning resolution and virtually zero aliasing whether you shoot in 8K/6K/4K/HD depending on the camera chosen. Even if your postproduction workflow and deliverables are 2K/HD, these sensors provide gorgeous images that ordinary HD cameras cannot touch.



# Frame Image Scan

### Say Goodbye to CMOS Distortions

The F55 introduces a breakthrough electronic Frame Image Scan that eliminates the skewing, smearing, and wobble ("jello effect") of fast-moving objects, as well as the partial frame exposure ("flash banding") caused by flash photography, all typical of CMOS sensors. With the F55's Frame Image Scan, you will no longer hesitate to shoot fast pans or press conferences with multiple flashes. In addition, the F55's Frame Image Scan offers an adjustable shutter angle from 4 to 360 degrees, which enables both variable aperture control of exposure as well as precise control of motion blur.



Captured before lightning strike.



Captured during lightning strike.

# **High Frame Rate**

### **Capture a Dramatic Moment**

With CineAlta Super 35mm 4K cameras, you can record 2K<sup>-1</sup>/HD images at variable speeds, up to 120 fps<sup>-1,2</sup> with the F5 and 180 fps<sup>-1,2</sup> with the F55. With the F65, you can record 8K RAW up to 120 fps. High-frame-rate recording allows you to create super slow-motion, which can transform an ordinary moment into a dramatic revelation.



Lightning strike at night captured by the F55.



For illustrative purposes only.

<sup>\*1</sup> Will be supported by future free downloadable upgrades.

<sup>\*2</sup> With the optional AXS-R5 recorder and AXSM card, the F5 can record 2K RAW up to 120 fps, and the F55 can record 2K RAW up to 240 fps.



For illustrative purposes only.

# Wide Exposure Latitude, High Sensitivity and Low Noise

## Beyond the Limit of Human Vision

Sony's new CineAlta Super 35mm 4K image sensors and in-camera image processors capture the finest, most subtle tonal gradations across their impressive 14 stops of exposure latitude. As a result of high sensitivity coupled with very low noise, CineAlta Super 35mm 4K cameras deliver rich and fully textured images. Whether it is ambient illumination of night exteriors or glaring sunlight, your imagery will be faithfully reproduced.

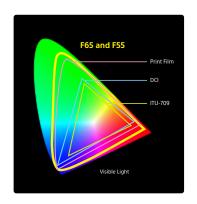


Image captured by the Sony F65 in "True Color". The camera's unique color science maintains the reds and blues as they "truly" are.

# Wide Dynamic Range and Color Gamut

### More Colors than Print Film

In addition to incredible dynamic range, CineAlta Super 35mm 4K cameras capture the widest color gamut, even wider than motion picture print film. S-Log2 fully protects this expanded dynamic range and color gamut, from deep shadow to brightest highlights, handing you and your colorist unprecedented flexibility in applying looks and grading for color and contrast.





# XAVC™ Sony's Advanced Video Coding

### Cost-efficient High-frame-rate and 4K Production

XAVC employs the highest possible quality of scalable H.264/MPEG-4 AVC Intra-frame compression to capture HD, 2K, QFHD (Quad Full HD), and 4K resolution. Beyond delivering rich, beautiful 10-bit pictures, it establishes an affordable ecosystem for production of high-frame-rate HD and 4K up to 60p using storage-efficient file sizes never before possible. As an example, XAVC 4K at 24p is only 240Mbps.

#### Features

- · World's first native format for 4K video recording at 24p, 25p, 30p, 50p and 60p
- · Intra-frame H.264/MPEG-4 AVC, 4:2:2, 10-bit, highest profile, Level 5.2
- · Modest bit-rate recording of 100Mbps\*<sup>1</sup> in HD mode and 300mbs\*<sup>2</sup> in 4K mode
- · High frame rate up to HD 180 fps for super slow-motion\*3
- · Newly developed SxS PRO™+ memory card for recording XAVC



SxS PRO+ Card SBP-64B



SxS PRO+ Card SBP-128B



SxS Card Reader/Writer SBAC-US20

<sup>\*1 1920</sup> x 1080, 30p, 4:2:2, 10-bit

<sup>\*2 4096</sup> x 2160, 30p, 4:2:2, 10-bit

<sup>\*3</sup> Will be supported by future free downloadable upgrades.



# **Access Memory System**

RAW Recorder: AXS-R5 Memory Card: AXS-512S24 Card Reader: AXS-CR1

AXSM<sup>™</sup> Access Memory Card Time and Cost-saving RAW Recording

Capturing all the RAW data from F5 and F55 sensors requires a new type of ultra-high-speed, high-capacity recording media. Employing unique Sony high-speed recording technology, the new AXSM Access Memory Card provides a blazing sustained transfer speed to record 2K RAW data up to 240 fps (F55) and 4K RAW data up to 60 fps\* (F55).

The cost-efficient AXSM Access Memory Card is also equally at home in both Mac OS X and Windows environments. AXSM uses the modern exFAT file system (Extended File Allocation Table). Sony takes further advantage of universal exFAT by introducing an economical card reader, AXS-CR1, with a USB 3.0 interface for easy, high-speed data file transfers to Macs and PCs.



AXSM Card AXS-512S24



RAW Recorder AXS-R5



AXSM Card Reader AXS-CR1 USB 3

<sup>\*1</sup> Will be supported by future free downloadable upgrades.

# F65

The F65 is the ultimate CineAlta camera.



# F65 – 8K Sensor Digital Motion Picture Camera

# Industry's Highest Bar for Motion Picture Acquisition

#### Camera:

- $\cdot$  8K Super 35mm CMOS sensor (20.4M pixels) with unique mosaic color filter array
- · 14 stops of exposure latitude
- · Ultra wide-gamut color reproduction
- · Four built-in neutral density filters
- · Mechanical rotary shutter (11.2° to 180°) plus electronic shutter
- · Anamorphic 2:1 unsqueezed in viewfinder & HDSDI monitoring

#### Recording/RAW Viewer:

- · 16-bit RAW 8K and True 12-bit and 10-bit 4:4:4 SR File recording to SRMemory™ cards using SR-R4 SRMASTER™ Recorder
- · RAW and RAW Lite recording Modes
- · 8K RAW High Frame Rate recording up to 120p
- · Advanced de-mosaic of 8K/6K RAW for enhanced flexibility in VFX, motion stabilization, anamorphic 4:3 production, and sports broadcasting.
- · Cooke /i® lens metadata embedded in recorded files
- · Support for 3rd party HD recorders with Rec Trigger and Time Code on the HD SDI Output



# Voices



© 2012 Film and Digital Times, Inc.



Taylor Swift's latest music video. Photo © Nigel Barker.

"I'm a film guy. I'm coming to digital cameras from that point of view. I thought it was very good. The 4K image — I hesitate to use "film look" because I think digital is digital and film is film — but there is a certain grain quality to it that I actually liked. It's got enormous latitude. There's a highlight and shadow button so that you can actually see what you are getting in the shadows and in the highlights on a normal monitor, which I thought is a great innovation. The low light performance is fantastic. I thought that the color space is very good. They've really achieved something."

— Paul Laufer, cinematographer for Taylor Swift's latest music video shot with F65



Two F65 cameras on a CC3D rig. Photo © Francis Hanneman.

"I'd shot in Jerusalem maybe a dozen times before, but this was a dream come true because I really felt we had never captured the city itself and the diversity of its imagery quite like we did this time in large format and 3D. I knew we wanted to have the highest resolution possible and the Sony F65 certainly gave it to us. The camera's 8K image quality is extraordinary."

 Reed Smoot, ASC director of photography for "Jerusalem 3D IMAX" shot with F65

# F55/F5

## Compact new CineAlta Super 35mm 4K Cameras

The F55 and F5 look very similar. Both share the same compact body and accept the same accessories. But, they vary dramatically in features: the F55 by design is best suited to 4K/2K/HD production, while the F5 is tailored to HD/2K production. Both support 2K/4K RAW.



## F55 True Color 4K Camera

## Pristine True Color Image Quality Whether You Shoot in HD, 2K<sup>1</sup> or 4K

#### Camera:

- · 4K Super 35mm CMOS sensor (4096 x 2160, effective 8.9M pixels)
- · Ultra wide-gamut color reproduction
- · 14 stops of exposure latitude
- · High sensitivity and low noise
- · High-frame-rate recording up to 180p @2K/HD\*1
- · Choice of 3.5-inch LCD viewfinder or compact 0.7-inch (1280 x 720) OLED viewfinder
- · Sony universal FZ lens mount with PL lens mount adaptor
- · Two built-in neutral density filters
- · Compact body with modular architecture
- · Detachable audio module with 2 XLRs for line/mic

#### Recording (As Launched):

- · In-camera 4K/HD recording with SxS™ and SxS PRO+ cards
- · In-camera high-frame-rate XAVC HD and 4K recording up to 60p, and 4K up to 60p, with SxS PRO+ card
- · Recording of 4K RAW to AXSM card using optional AXS-R5 recorder

#### Planned Recording (Via Future Free Downloadable Upgrades):

- · In-camera QFHD/2K recording with SxS™ and SxS PRO+ cards
- · In-camera high-frame-rate 2K recording up to 180p, and QFHD up to 60p, with SxS PRO+ card
- · Recording of 2K RAW to AXSM card using optional AXS-R5 recorder
- · Future Wi-Fi support



**XAVC** 1~60 fps 4K MPEG2

RAW 4K 1 ~ 60 fps

Frame Image Scan

> Ultra **Wide Color** Gamut

Planned Features via Free Downloadable Upgrades

XAVC 1~60 fps QFHD

**RAW** 1~240 fps **2K** 

**XAVC** 1~180 fps 2K

**XAVC** 1~180 fps HD MPEG2 50p/59p @720p

For current features and free downloadable upgrades visit sony.com/35mm

<sup>\*1</sup> Will be supported by future free downloadable upgrades.

## F5 4K Camera

## The Best HD and 2K<sup>-1</sup> You've Ever Shot, While Preparing for the 4K Future

#### Camera:

- · 4K Super 35mm CMOS sensor (4096 x 2160, effective 8.9M pixels)
- · High contrast rendering and rich color reproduction
- · 14 stops of exposure latitude
- · High sensitivity and low noise
- · Choice of 3.5-inch LCD viewfinder or compact 0.7-inch (1280 x 720) OLED viewfinder
- · Sony universal FZ lens mount with PL lens mount adaptor
- · Two built-in neutral density filters
- · Compact body with modular architecture
- · Detachable audio module with 2 XLRs for line/mic

#### Recording (As Launched):

- · In-camera super-sampled HD recording with SxS card, or SxS PRO+ card for XAVC
- · Recording of 4K RAW to AXSM card using optional AXS-R5 recorder

#### Planned Recording (Via Future Free Downloadable Upgrades):

- · In-camera high-frame-rate HD recording from 30p up to 120p\*1 with SxS PRO+ card
- · In-camera super-sampled XAVC recording with SxS card
- · In-camera high-frame-rate 2K recording up to 120p with SxS PRO+ card
- · Recording of 2K RAW to AXSM card using optional AXS-R5 recorder



#### As Launched (February 2013)

F5 **R5** MPEG2 HD **4**K **RAW** 1 ~ 60 fps Planned Features via Free Downloadable Upgrades sensor 2K **RAW** 1~120 fps 2K **XAVC** 1 ~ 120 fps Wide Color Gamut HD 1 ~ 120 fps SR File MPEG2 50p/59p @720p

<sup>\*1</sup> Will be supported by future free downloadable upgrades.



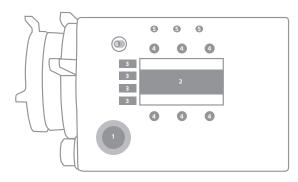


# Powerful, Versatile and Configurable Connections

The new F55/F5 CineAlta Super 35mm 4K camera platform provides for powerful connections, including real-time 4K output to a compatible monitor via four 3G-SDI outputs, up to 60p\*¹. There is an HDMI™ output supporting 4K up to 30p\*¹, USB, removable XLR audio module, time code, genlock, DC connection, and more.

\*1F55 only





- 1. Easy-to-navigate MENU dial
- 2. Current status display
- 3. Four menu buttons: Camera, File, Audio/TC, View
- 4. Six direct-access buttons for frequently used setup items
- 5. Three assignable buttons
- 6. Lock key for preventing operational error

## **Intuitive User Interface**

The F55/F5 CineAlta Super 35mm 4K camera platform introduces a new intuitive user interface to operate a rich range of controls. One-touch buttons surround a colorful 3.5-inch LCD display and provide access to key parameters — frame rate, shutter angle, color temperature, exposure index, and gamma — which can be checked at a glance. Additional assignable buttons mean that favorite adjustments are always at your fingertips.



# **Total Camera System**

The compact, modular design of the new F55/F5 CineAlta Super 35mm 4K camera platform incorporates newly-developed viewfinders, lenses and a RAW recorder — forming a total camera systems solution that is easy to configure depending on the target project. Components sold separately.

#### Viewfinders

- 1. 3.5-inch LCD viewfinder with flipup eyepiece and flexible arm
- 2. 0.7-inch OLED viewfinder with 3D appearance and great clarity
- 3. 7-inch LCD viewfinder with full HD resolution and HD-SDI input

### 4. Lenses (refer to page 28)

- · 6 PL lens set
- · 3 PL lens set

#### 5. Recorder

· RAW recorder for 4K/2K RAW

#### 6. Battery

 Perfect-size battery with long life and rapid charge

#### 7. Shoulder Rig

- Sturdy, light shoulder rig for comfortable handheld operation
- 8. SxS Pro+ Memory Card for HFR and 4K recording
- 9. AXSM Memory Card for 4K/2K RAW recording

#### 10. Memory Card Reader/Writer

· SxS card reader/writer

#### 11. Memory Card Reader

• Economical card reader for fast data transfer from AXSM to PC



# Accessories

Sony introduces newly developed accessories along with the F55 and F5, including viewfinders, a RAW recorder, 4K monitor, and more, providing a wide range of options to accomodate every production scenario.





# New Pl Mount Prime Lenses and Sony's Universal FZ Mount

For the F55/F5 CineAlta Super 35mm 4K camera platform, Sony has developed an entirely new set of color-matched PL-mount prime lenses with focal lengths of 20, 25, 35, 50, 85 and 135 mm. All feature a fast T2.0 aperture and constant size for easy lens changing, focus rings with large, easy-toread distance scales that rotate 240° for precise focus pulling, and 9-blade circular irises for soft, beautiful bokeh. With enhanced resolution, minimized aberration and geometric distortion, and no vignetting or focus breathing, these new Sony prime lenses are optimized for the era of 4K capture.

Sony's universal FZ mount allows the F55/F5 to not only accept FZ-mount lenses directly, but also a world of professional cine lenses using Sony's PL-mount adaptor. Sony's PL-mount adaptor incorporates contacts for both Cooke /i and ARRI Lens Data System (LDS) systems.

The F55/F5 FZ mount has a 19mm flange depth permitting the use of a wide range of third party lens adaptors.

Additional adaptors from third parties are available for popular SLR and DSLR lens mounts.



FZ Power Zoom Lens\*1\*2 SCL-Z18X140



PL Wide Angle Zoom Lens SCL-P11X15



SCL-PK6

PL-Mount Adapter (supplied with the F55 and F5)

<sup>\*1</sup> Will be supported by future free downloadable upgrades.

<sup>\*2</sup> Requires optional CBK-DCB01

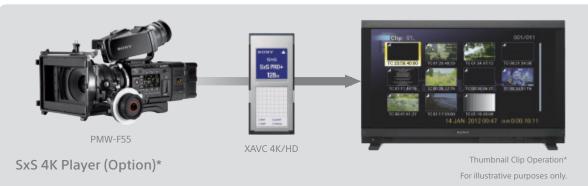
## TRIMASTER



## PVM-X300 TRIMASTER 4K Monitor

The PVM-X300 is a 30-inch $^{*1}$ , 4096 x 2160 resolution monitor for powerful support of 4K monitoring in the field. It incorporates Sony's exclusive TRIMASTER™ technology architecture, achieving excellent color and picture quality reproduction.

- · 30-inch \*1, 4096 x 2160
- · True 4K RGB 10-bit LCD, IPS wide viewing angle, ITU-R BT.709 color space
- · Wide variety of 4K interface: 3G SDI (x 4), HDMI (x 4), Display port (x 2) \*2
- · SxS 4K player for XAVC 4K/HD (option) \*2
- · HDMI x 1 cable connection with the F55 (up to 4K 60p)
- · Selectable control system (control panel, optional BKM-16R Control Unit \*2, PC \*2)
- · Zoom\*<sup>2</sup>, Camera Focus, Stereo Audio Output
- · Marker Display\*2, Auto White Adjustment\*2



The PVM-X300 can incorporate an optional future 4K player, which is capable of easy playback and navigation of 4K content. The newly developed SxS PRO+ high-speed memory media, which supports XAVC 4K and XAVC HD highframe-rate recording, can be inserted into the player providing quick viewing of camera imagery. This sets you free from preparing expensive, fragile HDD external players or struggling with complicated wired connections on location or in the studio.

\* Will be supported from the monitor firmware version 1.1 or later.

<sup>\*1 767.1</sup> mm viewing area, measured diagonally \*2 Will be supported from the monitor firmware version 1.1 or later.

# System & Workflow

To allow you enormous flexibility in production, the F55 and F5 provide a wide variety of recording systems, workflows, and system configurations.



## **Multiple Recording Systems**

When it comes to today's production, a single recording format no longer fits all requirements. That's why CineAlta Super 35mm 4K cameras give you an unmatched choice of high-end and state-of-the-art recording formats and recording media.

# **Recording Formats**



An industry standard format for television production, with superb pictures and compact files, supported by well-established workflows.



Sony's newly-developed implementation of H.264/MPEG-4 AVC format with superb efficiency, stunning 10-bit pictures and support for HD high frame rates and 4K 60P production at very efficient data rates.



Sony's de facto industry standard for high-end HD production, mastering and program exchange, supported by a robust SR hardware and software workflow.



The ultimate format to preserve all of the sensor data captured by CineAlta Super 35mm 4K cameras.

# **Recording Media**



High-speed, high-capacity, compact and compatible media









Ultra-high-speed, high-capacity and cost-efficient media





Ultra-high-speed, high-capacity and high-reliability media\*





<sup>\*1</sup> Will be supported by future free downloadable upgrades.

# F55/F5 Recording Format

Format	Resolution	Color Sampling Bit-depth	Frame Rate**	S&Q***	Recording Media
MPEG2	HD 1920 × 1080	4:2:2 8-bit	23.98/25/29.97p 50/59.94i	N/A	SxS-1 SxS PRO SxS PRO+
	HD 1280 × 720	4:2:2 8-bit	50/59.94p	N/A	
XAVC	HD 1920 × 1080	4:2:2 10-bit	23.98/25/29.97/ 50/59.94p	1 to 180 fps (F55) 1 to 120 fps (F5)	SxS PRO+
	2K* 2048 × 1080	4:2:2 10-bit	23.98/24/25/29.97/ 50/59.94p	1 to 180 fps (F55) 1 to 120 fps (F5)	
	QFHD (F55 only)* 3840 × 2160	4:2:2 10-bit	23.98/25/29.97/ 50/59.94p	1 to 60 fps	
	4K (F55 only) 4096 × 2160	4:2:2 10-bit	23.98/24/25/29.97/ 50/59.94p	1 to 60 fps	
SR File*	HD 1920 × 1080	4:2:2 10-bit 4:4:4 10-bit	23.98/24/25/29.97p	N/A	SxS PRO+
F55/F5 RAW (via R5)	2K* 2048 × 1080	16-bit Linear	N/A	1 to 240 fps (F55 + R5) 1 to 120 fps (F5 + R5)	AXSM
	4K 4096 × 2160	16-bit Linear	<b>23.98</b> /24/ <b>25/29.97</b> / 50/59.94p	1 to 60 fps (F55/F5 + R5)	

<sup>\*</sup> Will be supported by future free downloadable upgrades.

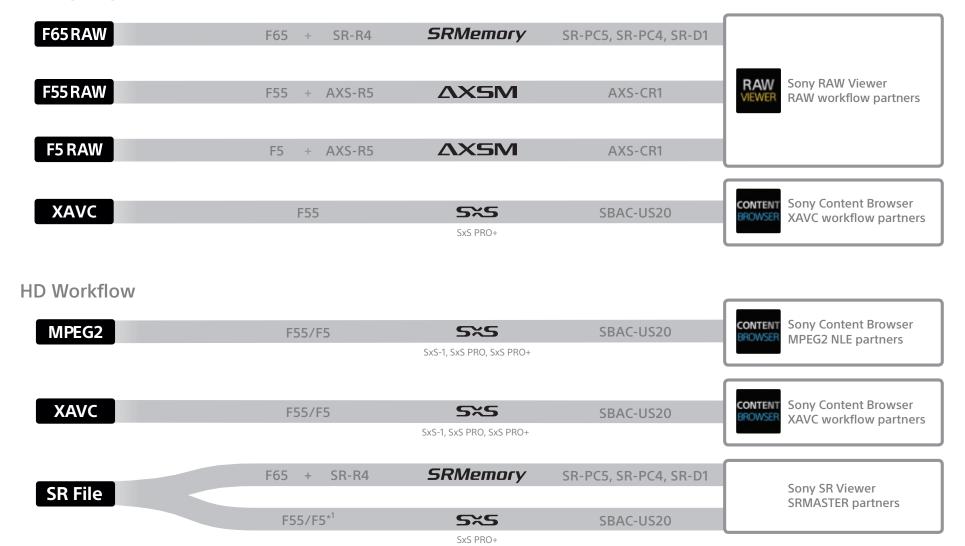
\*\* The frame rates written in red are supported at launch; the other frame rates will be supported by future upgrades.

\*\*\* Up to 60 fps in XAVC HD is supported at launch; other high-frame-rate recording will be supported by future upgrades.

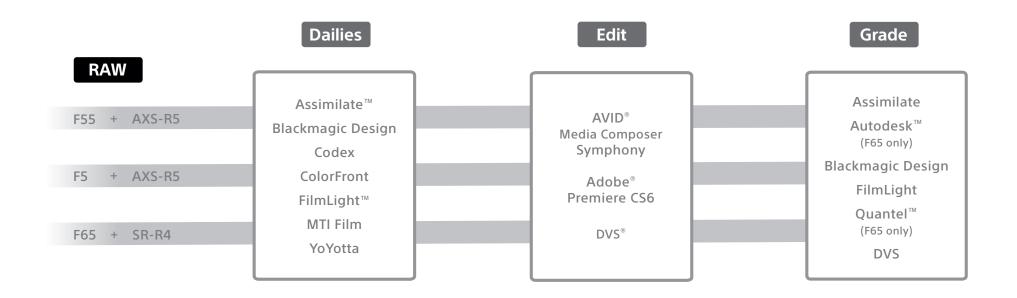
## Workflow

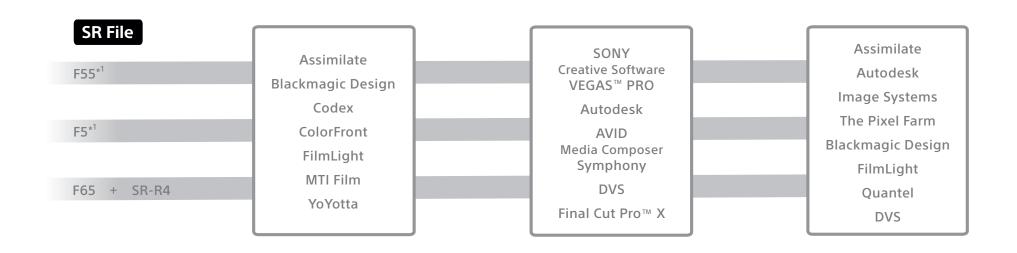
To give you maximum flexibility in postproduction, we offer several 4K workflows. Meanwhile, working cameras still require practical HD workflows with cost-efficient, compatible tools. We support both.

## **4K Workflow**

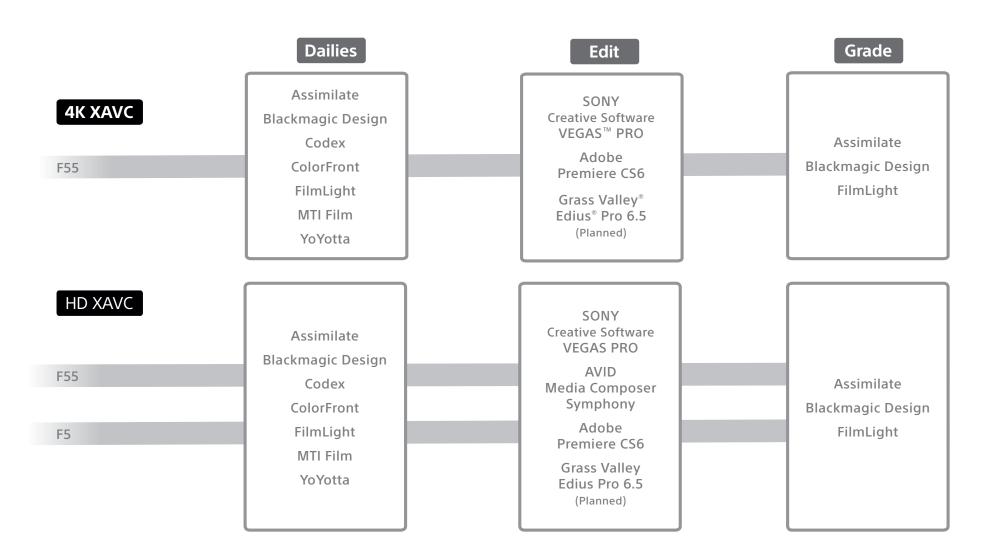


<sup>\*1</sup> Will be supported by future free downloadable upgrades.





 $\label{eq:workflow} Workflow as of March 2013 $$^{\star 1}$ Will be supported by future free downloadable upgrades.$ 



Content Browser — XAVC and 50Mbps 4:2:2 File Management





RAW Viewer — F65 RAW and F5/55 RAW De-mosaic/De-Bayer/Color Management





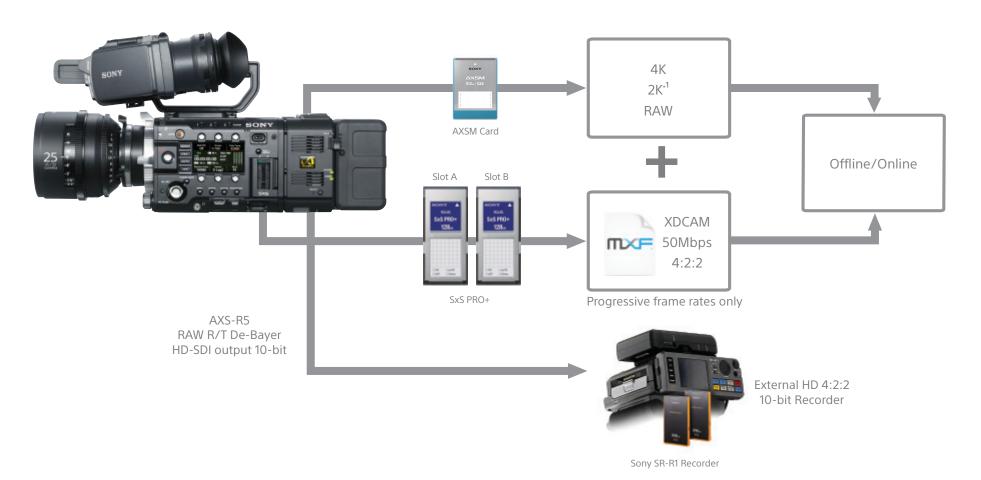
## **Versatile Workflows**

To give you the maximum flexibility in postproduction, we offer 16-bit linear RAW workflow. Meanwhile, we understand that working cameras require practical workflows. That's why we offer HD workflows with cost-efficient, compatible tools.

# Combination recording

The F55, and F5 offer unique combination recording modes with the new SxS PRO+ media.

## F55 and F5

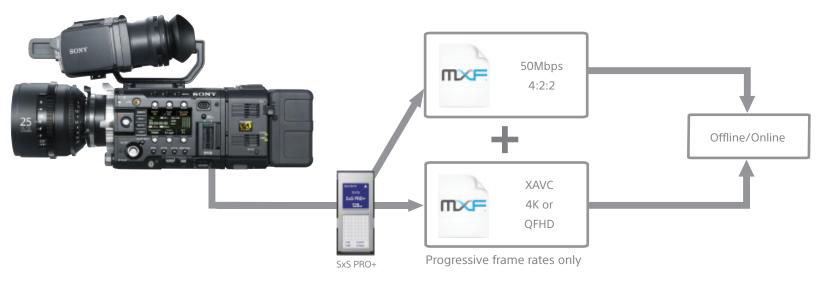


<sup>\*1</sup> Will be supported by future free downloadable upgrades.

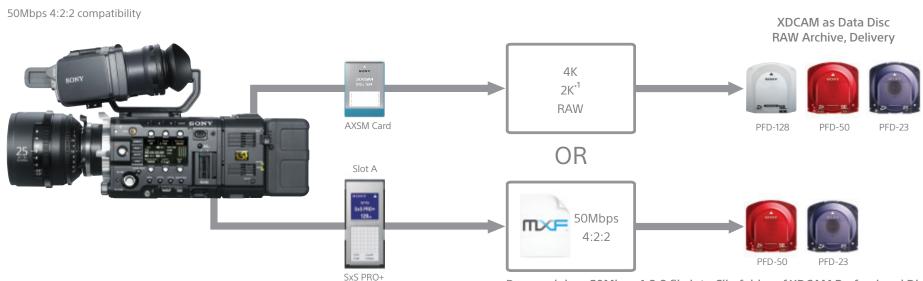
# Combination recording

The F55 offers unique combination recording modes with the new SxS PRO+ media.

## F55 Only



## **XDCAM Professional Disc**



<sup>\*1</sup> Will be supported by future free downloadable upgrades.

Drag and drop 50Mbps 4:2:2 file into Clip folder of XDCAM Professional Disc for Play Back, Archive, Delivery, etc. 2Mbps Proxy file is created automatically.

## Flexible System Configuration

F55/F5 CineAlta Super 35mm 4K cameras are remarkably small, light and modular, empowering you to build up the right configuration for each job — or each shot. They accept Sony's newly designed accessories as well as standard cinema camera accessories from third parties, and are specifically designed to facilitate any production style from hand-held documentary shooting to flying on a jib or Steadicam, from light 3D rigs to fully crewed formal cinematography.



0.7" 720 HD OLED VF DVF-EL100



3.5" QHD LCD VF DVF-L350



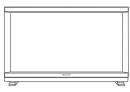
7" FHD LCD VF DVF-L700



Battery BP-FL75



Battery Charger BC-L90



30" 4K Monitor PVM-X300



SxS Card SBP-128B/64B



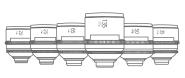
AXSM Card AXS-512S24



SxS Reader/Writer SBAC-US20



AXSM Card Reader AXS-CR1



6 x PL-Mount Prime Lens Set SCL-PK6



FZ Power Zoom Lens\*1\*2 SCL-Z18X140



PL Wide Angle Zoom Lens SCL-P11X15





15mm Rods

Shoulder Adapter VCT-FSA5



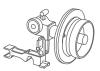
Remote Control Unit RM-B170



Demand Converter Box CBK-DCB01



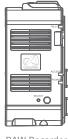
Matte Box\*



Follow Focus\*



Bridge Plate\*



RAW Recorder AXS-R5

- \* Available from third party
- \*1 Will be supported by future free downloadable upgrades.
- \*2 Requires optional CBK-DCB01

# SONY make.believe

sony.com/35mm

©2013 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Features, design, and specifications are subject to change without notice. The values for mass and dimension are approximate. Sony, AXSM, CineAlta, HDMI, SRMemory, SRMASTER, SxS, SxS Pro, TRIMASTER, Vegas, XAVC and the Sony "make.believe" logo are trademarks of Sony Corporation. Mac is a registered trademark of Apple Inc. Windows is a registered trademark of Microsoft Corporation. All other trademarks are the property of their respective owners.

