

**SONY**





**4K**

## Unlimited Creative Possibility

For almost its entire history, cinema has used film as its recording medium. But recently this has changed drastically. In 1999, Sony released the first 24p digital motion picture production system, which was an important step in the shift toward digital production. In 2006, Sony launched the world's first 4K digital cinema projection system which has increased demand for high-quality digital content retaining 4K resolution. And now, following the introduction of Sony's F65 – an epoch-making digital cinema camera, Sony is launching some outstanding new products to strengthen its 4K toolset.

We have designed CineAlta™ 4K acquisition tools as 'total imaging systems' from sensor to codec for capturing the image rendered by lens with the utmost fidelity. Various cutting-edge technologies, such as a Super 35 mm imager, wider dynamic range and color gamut, high sensitivity, and high-speed recording systems, have been used in these camera systems, so that cinematographers can freely express their creative vision.

Regardless of any changes in technology or economy, our mission remains the same: to satisfy the ever-increasing demands of creative minds. Sony is committed to further elevating image quality and improving the visual experience. With this in mind, the CineAlta logo symbolizes 'infinity', which can also be thought of as 'unlimited creative possibility' and 'endless pursuit of perfecting technology'.



# VOICE

Since Sony introduced the F65, their quality has been acclaimed by users worldwide including professionals engaged in cinema, drama, documentary, and many other creative productions.



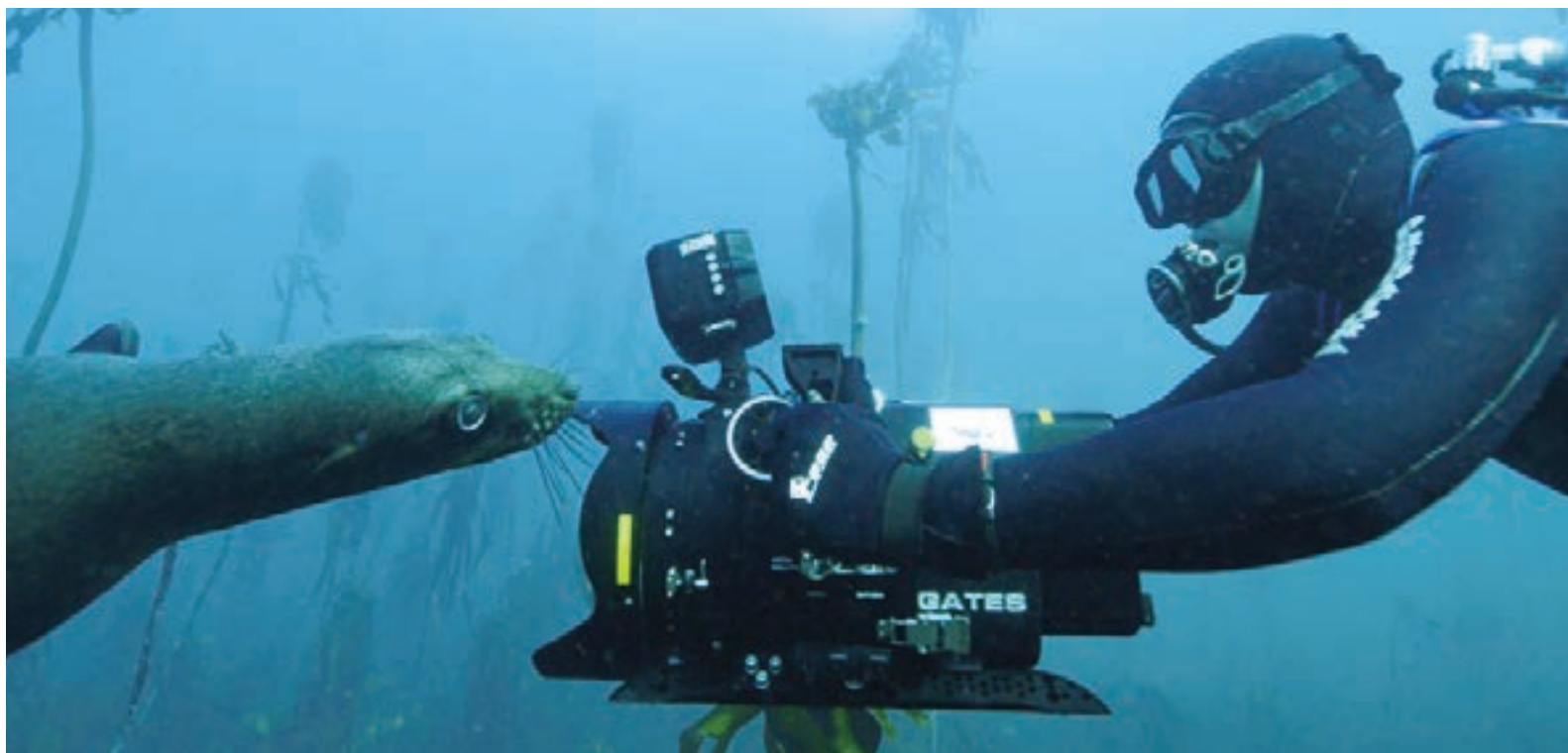


# Annie



Since we were shooting 16-bit 4K RAW, we had enormous latitude with dynamic range, color, and gamma. It was unbelievable, and I would always be shocked in certain scenarios at what the cameras could do.

*Michael Grady  
Cinematographer of the "Annie"*



F55 Digital Cinema Housing by GATES



## A First Look

When Grading footage from our dives, we can match the colors exactly, getting completely faithful color reproduction. The footage has an ethereal, otherworldly quality, which I think simply comes from the amount of detail it captures.

*Dan Beecham,  
Underwater cameraman based in Cape Town, South Africa*



# Let's Be Cops

I was definitely going to have an F65 on Let's Be Cops, and I did. But on this film, it looked like we would also need cameras that were more portable. I had tested the F55 for image quality and I saw that I could intercut the two cameras if I had to.

*Daryn Okada, ASC  
Cinematographer of the "Let's Be Cops"*







# Tomorrowland

On Tomorrowland we were able to use F55 cameras when we wanted to get into small, tight places or required a lightweight package. So it was a great complement to the F65. The F55 is an amazing little camera that just fits. It has a great, nice, open beautiful color space. It's simple to use.

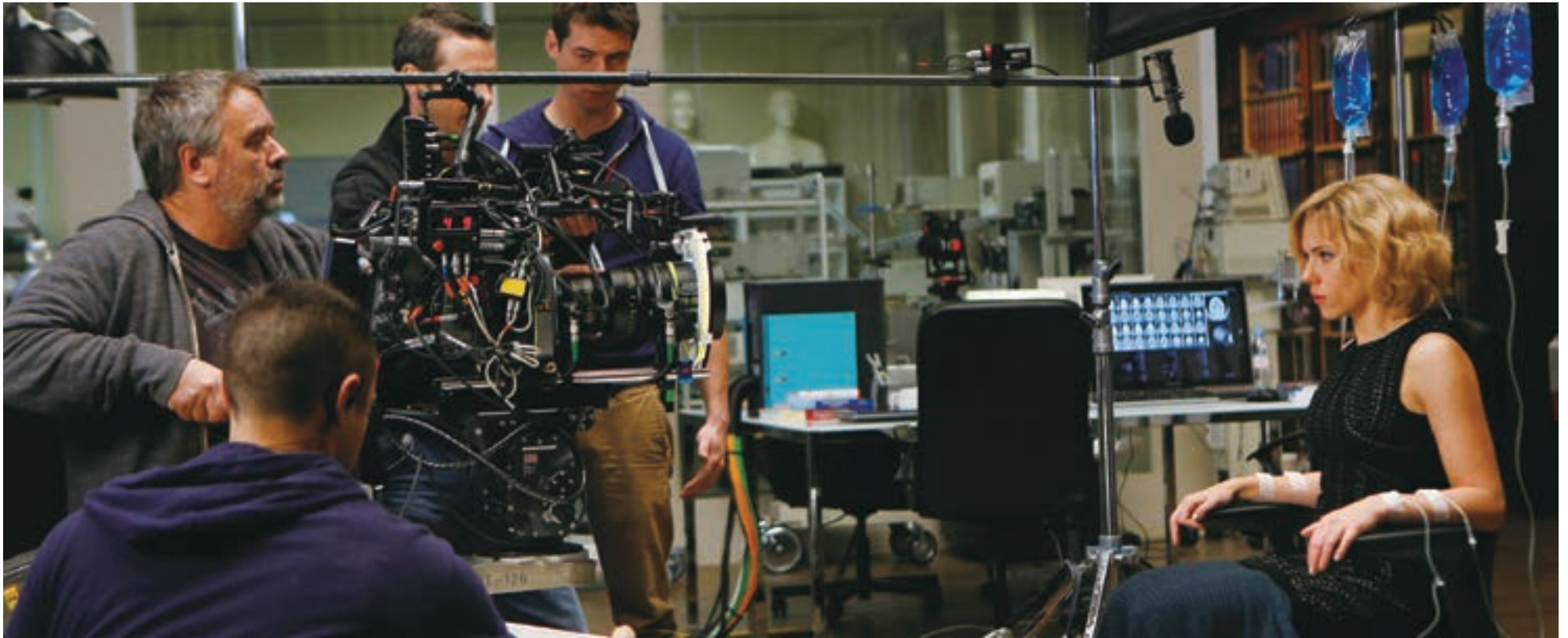
*Claudio Miranda, ASC  
Cinematographer of the "Tomorrowland"*

# Audi

With the F65 analog film quality is really becoming digital. Using the F65 with the right lenses is giving me the opportunity to create pictures which are so clear and perfect as looking through your own eyes. If a project needs on the other hand a more analog look I can add some grain to it which makes the F65 a perfect tool for different requirements and applications.

*Berti Kropac,  
Director of Photography, KROPAC MEDIA*





# LUCY

A huge draw for Luc Besson was the color fidelity and rendition of skin tones. The colors were really there; we could pick out the blue of the sweater and the carnations seemed very natural.

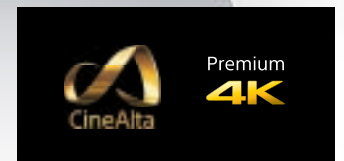
*Thierry Arbogast, AFC  
Director of Photography on "LUCY"*





# CineAlta 4K Cameras

F65 CineAlta Premium 4K Camera



F55 CineAlta 4K Camera



F5 CineAlta 4K Camera



# Technology

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





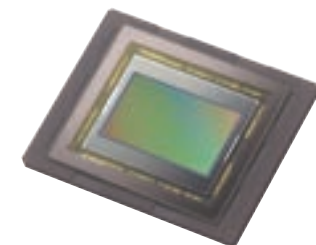


Captured by the F65

## Spectacular Images from HD to 8K

### Super 35mm 8K/4K CMOS Sensors

Cutting-edge image sensors are at the heart of CineAlta 4K cameras. The F65 has an 8K sensor, and the F55 and F5 have different types of 4K sensor. These Super 35 mm 8K/4K CMOS sensors deliver unparalleled 8K/4K/QFHD/2K/HD resolution images with extremely fine texture and low aliasing. Even if your postproduction and deliverables are in 2K/HD, these sensors provide gorgeous, super-sampled 2K/HD images that ordinary HD cameras cannot touch. In addition, Sony has provided the PWS-300SR1 which is able to develop superb resolution free aspect images up to 8K from F65RAW by the SRDM technology, Super Resolution De-Mosaicing processor.







For illustrative purposes only.

## Say Goodbye to the “Jello Effect” and “Flash Banding”

### Frame Image Scan

The F55 incorporates a newly developed frame image scan technology, which completely eliminates the so-called “jello effect” and “flash banding” that are typical of other CMOS sensors. With this technology, you will never again hesitate to shoot fast-moving objects or a press conference flooded with flashlights.

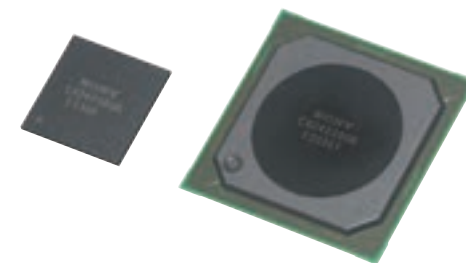


For illustrative purposes only.

## Beyond the Limit of Human Vision

### Wide Exposure Latitude, High Sensitivity, and Low Noise

Sony's new image sensors and the in-camera image processors of CineAlta 4K cameras give you impressive 14 stops of exposure latitude, high sensitivity, and low noise. These cameras deliver super-clear images, even if you are shooting interiors or night exteriors with only ambient lighting, and also enable graceful rendering of scene contrast even in searing sunlight.





Captured by the F55

## Capture a Dramatic Moment

### High Frame Rate

With CineAlta 4K cameras, you can record images at variable speeds of up to 240 frames per second (fps) in 2K with the F55 and F5 (with the AXS-R5)\*<sup>1</sup> as well as 120 fps in 4K with the F65 (with the SR-R4). High-frame-rate recording allows you to create super-slow-motion effects, which can change an ordinary daily incident into a dramatic scene.

\*<sup>1</sup> Maximum 180 fps in 2K/HD without the AXS-R5.

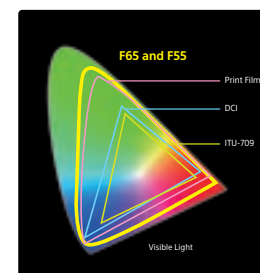


Captured by the F65.

## More Colors than Print Film

### Wide Dynamic Range and Color Gamut

CineAlta 4K cameras capture an incredible dynamic range, from deep shadow to bright highlights, and the widest color gamut ever, even wider than print film, and precisely reproduce the true color of what you see. These capabilities give colorists full flexibility in color correction during postproduction.



## Maximum Color Management Flexibility

With the CineAlta camera's widest mastering color gamut – known as S-Gamut and S-Gamut3 – Sony offers maximum flexibility of color management workflow. The Catalyst Browse and the RAW Viewer is a free solution with color grading and transcoding capabilities that work in close alignment with third-party color grading applications and also non-linear editing systems.



### Catalyst

Catalyst Browse is a media assistant that lets you browse files, see and edit media metadata, accurately view video, and apply color correction and looks. And you can copy material to a local hard drive or connected NAS or upload to Sony's Media Cloud Services Ci, and transcode to a variety of formats.



### RAW Viewer

RAW Viewer is specialized for checking quality of F65RAW, F55RAW, SStP and XAVC materials and deep color controls. It has total color grading functions and the capability to output HD-SDI signals and support control panels from third-party vendors.

# XAVC

## Cost-efficient Production System for HD to 4K

### XAVC New Video Format

Sony has developed a new XAVC™ recording format that delivers workflow efficiency and optimized image quality. It uses the MPEG-4 AVC/H.264 compression codec, and supports HD, 2K, QFHD, and 4K resolution for variable content creation from TV programs to feature films. XAVC establishes a cost-efficient ecosystem for HD high-frame-rate and 4K 60p production, and this will accelerate the expansion of the 4K content market. Additionally, XAVC is an open format, and is supported by industry-leading manufacturers.

- Support for HD, 2K, QFHD, and 4K resolution
- MPEG-4 AVC/H.264 video compression
- 10-bit color sampling
- 4K video recording at 23.98p, 24p, 25p, 29.97p, 50p, and 59.94p as native format
- High frame rate up to 180 fps in 2K/HD for super slow motion
- Newly developed SxS PRO+ and XQD memory card for XAVC recording with the F55 and F5



SxS PRO+ Card  
SBP-128C



SxS Card Reader/Writer  
SBAC-US30



Multi SxS Card Reader/Writer  
SBAC-UT100



XQD™ Memory Card\*1  
128GB



XQD USB Adaptor



XQD™ Memory Card Adaptor  
QDA-EX1

\*1 Please use XQD USB Adaptor or XQD Card Reader MRW-E80 for data transferring.

# AXSM

## Easier and Faster RAW Workflow

### AXSM System

To retain all the 4K RAW data from F55 and F5 sensors, Sony had to develop an ultra-high-speed, high-capacity recording system that was also computer friendly and cost efficient. This was successfully achieved with the AXSM™ system.

### AXSM Card

By employing Sony's unique high-speed recording technology, each AXSM card offers a 256 GB/512 GB/1 TB capacity and 2.4 Gbps (300 MB/s) sustained transfer speed to record 4K RAW data at up to 60p and 2K RAW data at up to 240 fps via an AXS-R5 RAW recorder with the F55 and F5. In addition, the generic exFAT file system makes the AXSM card more computer friendly when used with an economical card reader, the AXS-CR1. This card reader has a USB3.0 interface for high-speed file transfer to your computer without any special driver software.



RAW Recorder  
AXS-R5



AXSM Card Reader  
AXS-CR1



AXSM Card  
AXS-A1TS24



AXSM Card  
AXS-A512S24



AXSM Card  
AXS-A256S24



AXSM Card Adapter

# F65

The F65 is the ultimate CineAlta camera, optimized for cinema production.







## F65 CineAlta Premium 4K Camera

Featuring an 8K CMOS sensor, premium image quality, and 4K 120p recording

- Super 35 mm 8K CMOS sensor (20 M pixels)
- Mechanical rotary shutter and ND filters
- Wide color gamut and true-color reproduction
- 14 stops of exposure latitude
- On-board recording on SRMemory™ card via an SR-R4 recorder\*1
- High-frame-rate recording up to 120 fps in F65RAW-HFR
- Advanced de-mosaic in 6K and 8K by RAW Viewer

**8K**  
sensor

Rotary  
Shutter

Wide Color  
Gamut

## F65 + R4

**RAW** 1 ~ 120 fps

**HD** **MPEG4 SStP** 1 ~ 60 fps



CBK-65EL: Digital viewfinder interface

## F65 Upgrade Kit (CBK-65EL)

- DVF-EL100 OLED digital viewfinder support
- Two independent SDI outputs (SDI1: LUT, ACES, etc., SDI2: Magnify, Clip level indicator, etc.)
- 48p production support

\*1 F65RAW (F65RAW-SQ, F65RAW-Lite, and F65RAW-HFR) and MPEG4 SStP are supported.

# F55/F5

The F55 and F5 look very similar – both have the same compact body to accept the same accessories – but they vary in features. The F55 is designed for HD to 4K production, while the F5 is optimized for 2K/HD production.







## F55 CineAlta 4K Camera

Featuring a 4K CMOS sensor, true-color reproduction, and frame image scan for HD to 4K production

- Super 35 mm 4K CMOS imager (8.9 M effective pixels)
- Frame image scan to eliminate distortion
- Wide color gamut and true-color reproduction
- 14 stops of exposure latitude
- High sensitivity (ISO 1250) and low noise
- In-camera recording on SxS card
- On-board RAW recording on AXSM card via the AXS-R5
- High-frame-rate recording
- Simultaneous recording
- Interval recording
- Cache recording
- Super 16 mm center scan mode
- Compact and modular design
- PL mount with supplied lens mount adapter
- Support for B4 lens with FZ-B4 lens mount adapter

**4K**  
sensor

Frame Image  
Scan

Wide Color  
Gamut

### F55

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

2K **XAVC** 1 ~ 180 fps

HD **XAVC** 1 ~ 180 fps

**MPEG4 SStP** ~ 30p

**MPEG2** ~ 30p/60i (1080)  
50p/59p (720)

**Apple ProRes\*** ~ 30p

**Avid DNxHD®\*** ~ 30p

### R5

4K **RAW** 1 ~ 60 fps

2K **RAW** 1 ~ 240 fps

\* Required to install the CBK-55PD



## F5 CineAlta 4K Camera

Featuring a 4K CMOS sensor, superior super-sampled 2K/HD images, and 4K RAW recording option

- Super 35 mm 4K CMOS imager (8.9 M effective pixels)
- Rich color reproduction
- 14 stops of exposure latitude
- High sensitivity (ISO 2000) and low noise
- In-camera recording on SxS card
- On-board RAW recording on AXSM card via the AXS-R5
- High-frame-rate recording
- Simultaneous recording
- Interval recording
- Cache recording
- Super 16 mm center scan mode
- Compact and modular design
- PL mount with supplied lens mount adapter
- Support for B4 lens with FZ-B4 lens mount adapter
- Upgrade to F55 by installing the CBK-55UK
- 4K recording and playback capability available with the CBKZ-55FX

**4K**  
sensor

**F5**

|         |                       |                                   |
|---------|-----------------------|-----------------------------------|
| 4K QFHD | <b>XAVC*1</b>         | 1 ~ 60 fps                        |
| 2K      | <b>XAVC</b>           | 1 ~ 180 fps                       |
| HD      | <b>XAVC</b>           | 1 ~ 180 fps                       |
|         | <b>MPEG4 SStP</b>     | ~ 30p                             |
|         | <b>MPEG2</b>          | ~ 30p/60i (1080)<br>50p/59p (720) |
|         | <b>Apple ProRes*2</b> | ~ 30p                             |
|         | <b>Avid DNxHD®*2</b>  | ~ 30p                             |

**R5**

|    |            |             |
|----|------------|-------------|
| 4K | <b>RAW</b> | 1 ~ 60 fps  |
| 2K | <b>RAW</b> | 1 ~ 240 fps |

\*1 Required to install the CBKZ-55FX  
\*2 Required to install the CBK-55PD



HDMI OUT

Timecode IN/OUT (switchable)

4 × SDI OUT (configurable)

- 4 × 3G-SDI for 4K 60p line out (F55 and F5 with the CBKZ-55FX)
- 2 × HD-SDI for line out and 2 × HD-SDI for monitor out



Digital Viewfinder Interface

HD Sync/HD-Y (switchable)

GENLOCK IN

× 2 XLR 3-pin Audio Input Connector (detachable)



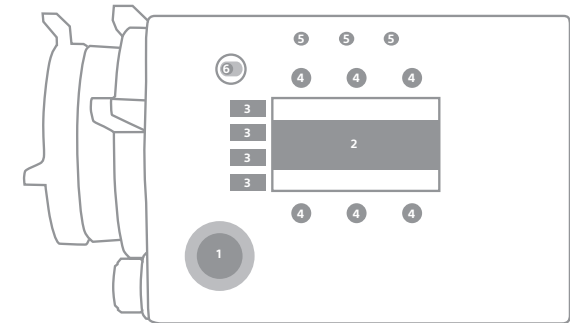
Top



Bottom

## Well-designed Connector Layout

The F55 and F5 offer powerful connections, including real-time 4K output to a compatible monitor via four 3G-SDI outputs (F55 and F5 with the CBKZ-55FX). They also offer HDMI, a detachable XLR audio input connector, timecode, genlock, DC connection, and more, enabling you to build the best configuration for your shooting situation.



1. Easy-to-navigate MENU dial
2. Current status display
3. 4 x category menus (Camera, File, Audio/TC, View)
4. 6 x direct access buttons for frequently used setup items
5. 4 x assignable buttons (with one on the other side)
6. Lock key for preventing operational errors

## Intuitive User Interface

The F55 and F5 provide a rich range of controls via a nicely intuitive interface for quick, easy setup and adjustment. They have a color 3.5-inch LCD panel and direct, one-touch access buttons to six key parameters, including frame rate, shutter speed, exposure index, and monitor LUT. Additionally, assignable buttons allow you to keep your favorite adjustments always at your fingertips.

# 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 satisfy individual needs.







GATE 4

## F55/F5 Accessories



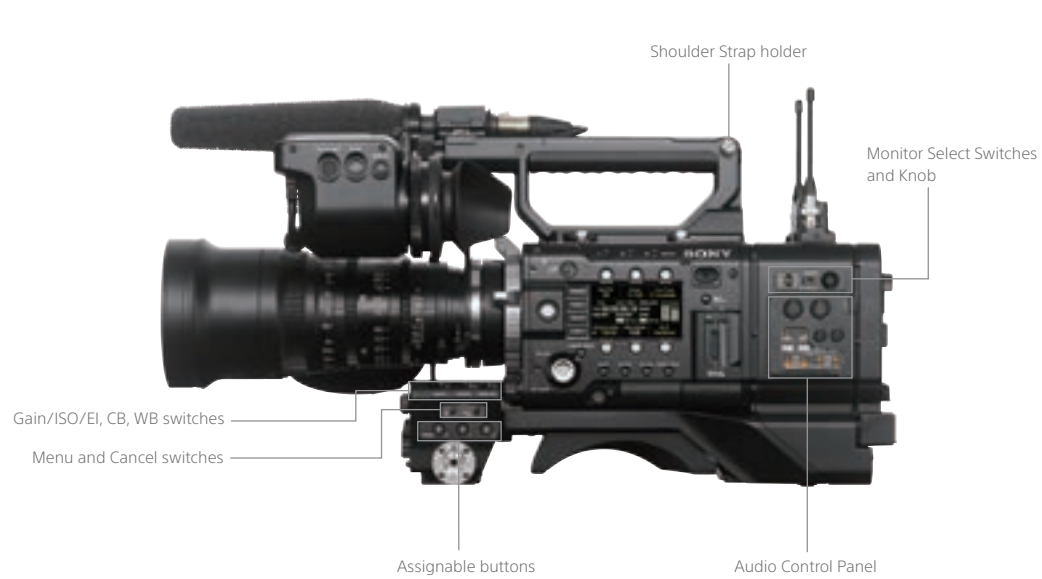
### EFP-Style Buildup Kit

#### CBK-55BK

The CBK-55BK is a specialized accessory docking shoulder pad and interface for the PMW-F55/F5. This accessory can be attached easily and allows you to access key functions. For documentary shooters and other camera users who want improved comfort for a run-and-gun style with the F55 and F5, this documentary and docking system (so-called Doc Dock) is an ideal addition to improve their work.

- Easy access to camera functions on the front block
- Adjustable shoulder pad and front block for appropriate weight balance
- Easy docking and undocking with the F55/F5
- Same audio control panel as broadcast shoulder camcorders
- Supports wireless slot-in audio receiver
- In/Output panel at the rear side
- Supports RAW recording with the AXS-R5
- Brushed handle including mic. holder and VF cable protection





## F55/F5 Accessories

### Additional Codec Board CBK-55PD



This accessory allows the F55 and F5 to record new formats, Apple ProRes and Avid DNxHD®.

| Codec         | Bit Depth | Resolution  | System Frequency |           |           |           |          |          |
|---------------|-----------|-------------|------------------|-----------|-----------|-----------|----------|----------|
|               |           |             | 23.98P           | 24.0P     | 25.0P     | 29.97P    | 50i      | 59.94i   |
| ProRes 4444   | 12 bit    | 1920 x 1080 | 4*<br>264 Mbps   | 4*<br>264 | 4*<br>275 | 4*<br>330 |          |          |
| ProRes 422 HQ | 10 bit    | 1920 x 1080 | 4<br>176         | 4<br>176  | 4<br>184  | 4<br>220  | 4<br>184 | 4<br>220 |
| ProRes 422    | 10 bit    | 1920 x 1080 | 4<br>117         | 4<br>117  | 4<br>122  | 4<br>147  | 4<br>122 | 4<br>147 |
| DNxHD220x     | 10 bit    | 1920 x 1080 | 4<br>175         |           | 4<br>185  | 4<br>220  | 4<br>185 | 4<br>220 |
| DNxHD145      | 8 bit     | 1920 x 1080 | 4<br>115         |           | 4<br>120  | 4<br>145  | 4<br>120 | 4<br>145 |

\* Requires a firmware upgrade (planned for June 2015).

### 4K Upgrade License CBKZ-55FX

This license key option allows the F5 to activate 4K capabilities such as XAVC 4K/QFHD recording and playback, 4K SDI and 4K HDMI output, and simultaneous recording (XAVC 4K/QFHD and MPEG HD). This option is activated by a license key which you download from Sony's website and simply install.



## PL Mount Prime Lens

A new 6 x PL mount prime lens set has been developed for the F55 and F5. The set includes focal lengths of 20, 25, 35, 50, 85, and 135 mm. Each is certified for 4K capture, while minimizing geometric distortion, vignetting, and breathing. For easy lens changes, all lenses have a consistent design such as an aperture of T2. A 9-blade iris delivers beautiful bokeh and focus rings rotate

240°. In addition, by removing the supplied PL mount adapter, a native FZ mount allows the F55 and F5 cameras to accept FZ mount lenses directly, and SLR and DSLR lenses via third-party adapters, all without optical degradation. In short, this gives you great flexibility in lens choice.

TRIMASTER EL

4K



## 4K OLED Unleashed

Sony proudly introduces the BVM-X300 30-inch\*<sup>1</sup> 4K OLED master monitor – the flagship model in our professional monitor lineup. This new monitor offers the inherent performance of TRIMASTER EL OLED monitors, including unparalleled black performance, color reproduction, quick pixel response, and industry-leading wide viewing angles.

In addition, the BVM-X300 supports High Dynamic Range mode and a wide color gamut conforming to DCI-P3 and most of the ITU-R BT.2020 Recommendation.\*<sup>2</sup> By unleashing these superb features and qualities, this master monitor makes an ideal tool for a wide range of applications such as color grading and QC (quality control) in the 4K production workflow.

\*<sup>1</sup> 750.2 mm viewable area, measured diagonally.

\*<sup>2</sup> The BVM-X300 does not cover the ITU-R BT.2020 color space in full.

## Delivers New Levels of Convenience with a 4K Memory Player

Unlike the fast-growing 4K shooting and editing environment, the 4K clip playing environment may require expensive high-performance computers or servers and technical backgrounds. For a more affordable and simple yet high-quality 4K player, PMW-PZ1 4K memory player should be the best choice.

The PMW-PZ1 is equipped with a 3.5-inch QHD LCD, SxS card slot, USB, HDMI/SDI(x4) output and audio output. These features enable the unit to play 4K images in a variety of situations. For example, a 4K image captured by the F55 on location can be checked instantly by a 4K SDI professional monitor or consumer 4K TV connected via HDMI.





## Total Camera System Solution

With a compact, modular design camera body, the F55 and F5 offer a total camera system solution – including newly developed viewfinders, a RAW recorder, and 4K monitor – for 4K and future content creation. You'll find these cameras are easy to configure according to your target projects.

- 1. 3.5-inch QHD LCD viewfinder
- 2. 0.7-inch 720 HD OLED viewfinder
- 3. 7-inch Full HD LCD viewfinder
- 4. PL/T2 lens set
- 5. RAW recorder
- 6. New Lithium-ion battery
- 7. Shoulder adapter
- 8. SxS PRO+ card
- 9. AXSM card
- 10. SxS card reader/writer
- 11. Multi SxS card reader/writer
- 12. AXSM card reader
- 13. 30-inch 4K LCD monitor

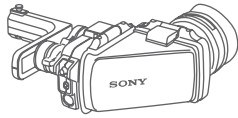


# System Configuration

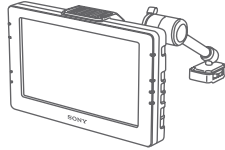
The F55 and F5 are remarkably small, light, and modular, enabling you to build the right configuration for each job or each shot. These cameras accept Sony's newly designed accessories and industry-standard accessories, offering flexible system configuration to fit into any shooting style, from simple documentary shooting, flying on a jib, and Steadicam operation, to fully rigged for formal cinematography.



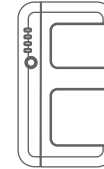
0.7" 720 HD OLED VF  
DVF-EL100



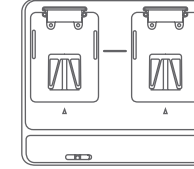
3.5" QHD LCD VF  
DVF-L350



7" FHD LCD VF  
DVF-L700



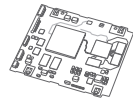
Battery  
BP-FL75



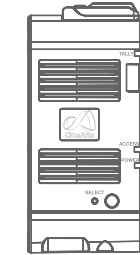
Battery Charger  
BC-L90



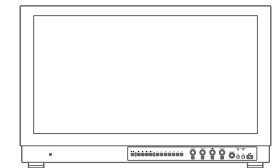
PL Mount Prime Lens Set  
SCL-PK6/F or /M



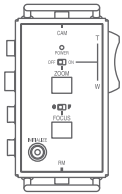
Additional Codec Board  
CBK-55PD



RAW Recorder  
AXS-R5



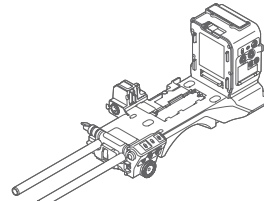
30" 4K Monitor  
BVM-X300



Demand Converter Box  
CBK-DCB01



4K Upgrade License  
CBKZ-55FX



EFP-Style Buildup Kit  
CBK-55BK



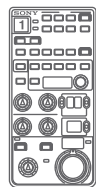
Shoulder Adapter  
VCT-FSA5



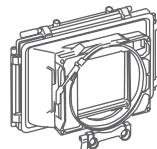
SxS Card  
SBP-128C/64C  
SBS-128G1B/64G1B/32G1B



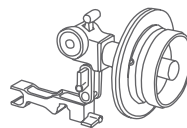
AXSM Card  
AXS-A256S24/  
A512S24/A1TS24



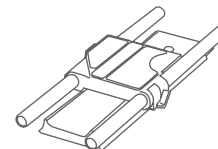
Remote Control Unit  
RM-B170



Matte Box



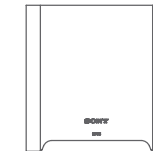
Follow Focus



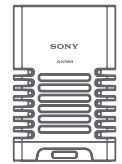
Bridge Plate



SxS Reader/Writer  
SBAC-US30



Multi SxS Card Reader/Writer  
SBAC-UT100



AXSM Card Reader  
AXS-CR1

# System & Workflow

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





## Recording System

When it comes to production, one recording format emphatically does not fit all. That is why the F55 and F5 give you not one but various useful recording formats with several types of recording media.

### Recording Formats

#### RAW

This ultimate 16-bit linear RAW format preserves all the information captured in 4K/2K with 16 times more tonal values than 12-bit RAW. It is supported by an F65RAW, F55RAW and F5RAW workflow.

#### XAVC

The next-generation of H.264/AVC intra-frame coding, this format establishes a cost-efficient ecosystem for HD high-frame-rate and 4K 60p production. It supports HD to 4K with superb efficiency and beautiful 10-bit pictures.

#### MPEG4 SStP

This standard format for high-end production, postproduction, and program exchange is also known as SR codec. It is a visually loss-less codec with superior picture quality, and is supported by a robust SR workflow.

#### Apple ProRes\*

Apple ProRes and Avid DNxHD® formats are popular in postproduction, and are supported by the F55 and F5 with installation of the CBK-55PD. This means there's no need for transcoding; you can simply handle these formats directly from the camera.

#### Avid DNxHD®\*

#### MPEG2

This is the standard format for HD TV production. The 50 Mbps 4:2:2 codec is robust with superb pictures and compact files. The workflow is well established with widespread third-party support.

\* Required to install the CBK-55PD.

### Recording Media

#### SRMemory

Ultra-high-speed and high-capacity media for SRMASTER™ products



#### AXSM

Ultra-high-speed, high-capacity, and cost-efficient media for AXSM system products



#### SXS

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



## F65 + R4 Recording Format

| Format     | Resolution                     | Color Sampling Bit-depth               | Frame Rate  | Select FPS  | Recording Media |
|------------|--------------------------------|--|---|---|-----------------|
| F65RAW     | 4K<br>4096 × 2160<br>or higher | 16-bit Linear                          | 23.98/24/25/29.97/50/59.94p                         | 1 to 60 fps (F65RAW-SQ/Lite)<br>1 to 120 fps (F65RAW-HFR) | SRMemory        |
| MPEG4 SStP | HD<br>1920 × 1080              | 444 12-bit<br>444 10-bit<br>422 10-bit | 23.98/24/25/29.97PsF<br>50/59.94p (422 10-bit only) | 1 to 60 fps   | SRMemory        |

## F55/F5 Recording Format

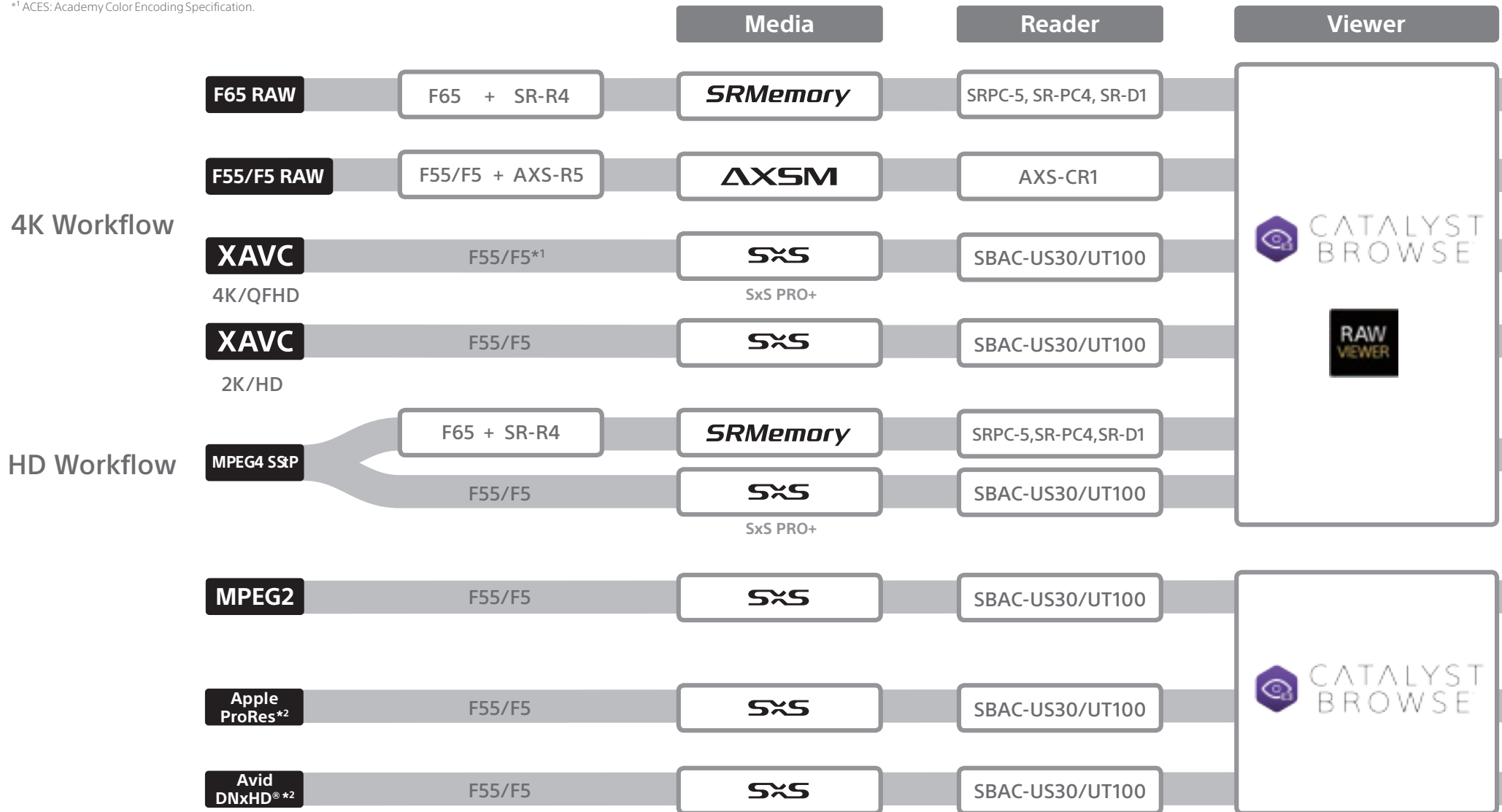
| Format                      | Resolution                     | Color Sampling Bit-depth  | Frame Rate                  | S&Q                        | Recording Media                                  |
|-----------------------------|--------------------------------|---|-----------------------------|----------------------------|--|
| F55RAW<br>F5RAW<br>(via R5) | 4K<br>4096 × 2160              | 16-bit Linear   | 23.98/24/25/29.97/50/59.94p | 1 to 60 fps (F55/F5 + R5)  | AXSM   |
|                             | 2K<br>2048 × 1080              | 16-bit Linear   | 23.98/24/25/29.97/50/59.94p | 1 to 240 fps (F55/F5 + R5) |  |
| XAVC                        | 4K (F55 only)<br>4096 × 2160   | 422 10-bit  | 23.98/24/25/29.97/50/59.94p | 1 to 60 fps                | SxS PRO+   |
|                             | QFHD (F55 only)<br>3840 × 2160 | 422 10-bit  | 23.98/25/29.97/50/59.94p    | 1 to 60 fps                |  |
|                             | 2K<br>2048 × 1080              | 422 10-bit  | 23.98/24/25/29.97/50/59.94p | 1 to 180 fps               | SxS PRO+<br>SxS PRO                              |
|                             | HD<br>1920 × 1080              | 422 10-bit  | 23.98/25/29.97/50/59.94p    | 1 to 180 fps               |  |
| MPEG4 SStP                  | HD<br>1920 × 1080              | 422 10-bit<br>444 10-bit  | 23.98/24/25/29.97p          | N/A                        | SxS PRO+   |
| Apple ProRes*               | HD<br>1920 × 1080              | ProRes 4444 12-bit<br>ProRes 422 HQ 10-bit<br>ProRes 422 10-bit | 23.98/24/25/29.97p          | N/A                        | SxS Pro+<br>SxS Pro (not support<br>ProRes 4444) |
| Avid DNxHD®*                | HD<br>1920 × 1080              | DNxHD 220x 10-bit<br>DNxHD 145 8-bit                            | 23.98/25/29.97p             | N/A                        | SxS Pro+<br>SxS Pro                              |
| MPEG2                       | HD<br>1920 × 1080              | 422 8-bit   | 23.98/25/29.97p50/59.94i    | N/A                        | SxS PRO+<br>SxS PRO<br>SxS-1                     |
|                             | HD<br>1280 × 720               | 422 8-bit   | 50/59.94p                   | N/A                        |  |

\* Required to install the CBK-55PD.

# Workflow

To give you maximum flexibility in postproduction, we offer several 4K workflows including 16-bit linear ACES \*1 workflows. Meanwhile, working cameras still require practical HD workflows with cost-efficient, compatible tools. We support both.

\*1 ACES: Academy Color Encoding Specification.



\*1 Required to install the CBKZ-55FX

\*2 Required to install the CBK-55PD.

**Dailies**

- Assimilate™
- Blackmagic Design
- Codex
- Color Front
- FilmLight™
- MTI Film
- POMFORT\*<sup>3</sup>
- YoYotta

\*<sup>3</sup> POMFORT supports RAW and XAVC

**Edit**

- Adobe®
- AVID®
- Autodesk™
- Rhode & Schwarz DVS

- Adobe®      Final Cut Pro
- AVID®        Rhode & Schwarz DVS
- Autodesk™    Vegas Pro
- Grass Valley

- Adobe®        Rhode & Schwarz DVS
- AVID®        Vegas Pro
- Final Cut Pro

- Adobe®        Grass Valley
- AVID®        Rhode & Schwarz DVS
- Autodesk™    Vegas Pro
- Final Cut Pro

**Grade**

- Assimilate™
- Autodesk™
- Blackmagic Design
- Digital Vision
- Film Light™
- Quantel™
- Rhode & Schwarz DVS
- SGO

**Please contact Apple and Avid for latest information.**

For support and availability information of any desired providers, please refer to the vendor directly.

# Appendix







HDX35

Canon

CELESTIAL  
X  
III

AUDIO IN  
DC 14-18V  
OFF ON 1 OFF 2

# Specifications

## F65RS

## PMW-F55

## PMW-F5

| General                                  |  | F65RS  | PMW-F55  | PMW-F5   |
|--|--|--|--|--|
| Power Requirements                       | DC 10.5 V to 17 V  | DC 12 V (11 V to 17 V)   | DC 12 V (11 V to 17 V)   | DC 12 V (11 V to 17 V)   |
| Power Consumption                        | Approx. 65 W (mechanical rotary shutter operating) (without lens, viewfinder, at 23.98PsF mode)  | Approx. 25 W (while recording XAVC 4K 60p, EVF Off, LCD monitor Off, 4K S-Log2 On)   | Approx. 24 W (while recording XAVC HD 60p, EVF Off, LCD monitor Off, HD-SDI On)  | Approx. 24 W (while recording XAVC HD 60p, EVF Off, LCD monitor Off, HD-SDI On)  |
| Operating Temperature                    | 0°C to 40°C (32°F to 104°F)  | 0°C to 40°C (32°F to 104°F)  | 0°C to 40°C (32°F to 104°F)  | 0°C to 40°C (32°F to 104°F)  |
| Storage Temperature                      | -20°C to +60°C (-4°F to +140°F)  | -20°C to +60°C (-4°F to +140°F)  | -20°C to +60°C (-4°F to +140°F)  | -20°C to +60°C (-4°F to +140°F)  |
| Mass                                     | 5.0 kg (11 lb) (6.5 kg (14 lb 5 oz) with accessories)  | 2.2 kg (4 lb 14 oz) (without lens, handle, audio box and accessories)  | 2.2 kg (4 lb 14 oz) (without lens, handle, audio box and accessories)  | 2.2 kg (4 lb 14 oz) (without lens, handle, audio box and accessories)  |
| Dimensions (W x H x D)                   | 227 x 203 x 255 mm (9 x 8 x 10 1/8 inches) (without protrusions)   | 130 x 125 x 191 mm (5 1/8 x 5 x 7 5/8 inches) (without protrusions)  | 130 x 125 x 191 mm (5 1/8 x 5 x 7 5/8 inches) (without protrusions)  | 130 x 125 x 191 mm (5 1/8 x 5 x 7 5/8 inches) (without protrusions)  |
| Camera Section                           |  |  |  |  |
| Imaging Device (Type)                    | Super 35mm equivalent Single-chip CMOS   | Super 35mm equivalent Single-chip CMOS   | Super 35mm equivalent Single-chip CMOS   | Super 35mm equivalent Single-chip CMOS   |
| Imaging Device (Pixel Count)             | 20 M (total), 19 M (effective)   | 11.6 M (total), 8.9 M (effective)  | 11.6 M (total), 8.9 M (effective)  | 11.6 M (total), 8.9 M (effective)  |
| Aspect Ratio                             | 17:9   | 17:9   | 17:9   | 17:9   |
| Built-in Filters                         | Clear, ND0.9 (1/8ND), ND1.2 (1/16ND), ND1.5 (1/32ND), ND1.8 (1/64ND)   | Clear, 0.9 (1/8ND), 1.8 (1/64ND)   | Clear, 0.9 (1/8ND), 1.8 (1/64ND)   | Clear, 0.9 (1/8ND), 1.8 (1/64ND)   |
| Sensitivity (2000 lx, 89.9% reflectance) |  | Video Gamma: T12@24p (3200K light source)  | Video Gamma: T14 @24p (3200K light source)   | Video Gamma: T14 @24p (3200K light source)   |
| ISO Sensitivity                          | ISO800   | S-Log2 Gamma: ISO 1250 (D55 light source)  | S-Log2 Gamma: ISO 2000 (D55 light source)  | S-Log2 Gamma: ISO 2000 (D55 light source)  |
| Lens Mount                               | PL mount   | PL mount (with supplied lens mount adapter)<br>FZ mount (without supplied lens mount adapter)  | PL mount (with supplied lens mount adapter)<br>FZ mount (without supplied lens mount adapter)  | PL mount (with supplied lens mount adapter)<br>FZ mount (without supplied lens mount adapter)  |
| Latitude                                 | 14-stop  | 14-stop  | 14-stop  | 14-stop  |
| Shutter Speed (23.98PsF)                 | 1/24s to 1/6,000s  | 1/24s to 1/6,000s  | 1/24s to 1/6,000s  | 1/24s to 1/6,000s  |
| Shutter Angle                            | 4.2° to 360° (electrical shutter), 11.2° to 180° (mechanical rotary shutter)   | 4.2° to 360° (electrical shutter)  | 4.2° to 360° (electrical shutter)  | 4.2° to 360° (electrical shutter)  |
| Slow Shutter (SLS)                       |  | 2, 3, 4, 5, 6, 7, 8-frame accumulation   | 2, 3, 4, 5, 6, 7, 8-frame accumulation   | 2, 3, 4, 5, 6, 7, 8-frame accumulation   |
| White Balance                            | 3200K, 4300K, 5500K  | Preset (3200K, 4300K, 5500K), Memory   | Preset (3200K, 4300K, 5500K), Memory   | Preset (3200K, 4300K, 5500K), Memory   |
| Gain                                     | -6, -3, 0, 3, 6, 9, 12 dB  | -3, 0, 3, 6, 9, 12, 18 dB, AGC   | -3, 0, 3, 6, 9, 12, 18 dB, AGC   | -3, 0, 3, 6, 9, 12, 18 dB, AGC   |
| Gamma Curve                              | HG7, HG8, S-Log2 Gamma, User   | Standard (x6), HG1, HG2, HG3, HG4, HG7, HG8, S-Log2 Gamma  | Standard (x6), HG1, HG2, HG3, HG4, HG7, HG8, S-Log2 Gamma  | Standard (x6), HG1, HG2, HG3, HG4, HG7, HG8, S-Log2 Gamma  |
| Input/Output                             |  |  |  |  |
| Audio Input                              | CH-1/CH-2: XLR-type 3-pin (female) (x2), Line/Mic/Mic +48V switchable with SR-R4   | CH-1/CH-2: XLR-type 3-pin (female) (x2), Line/Mic/Mic +48V (AES/EBU) switchable  | CH-1/CH-2: XLR-type 3-pin (female) (x2), Line/Mic/Mic +48V (AES/EBU) switchable  | CH-1/CH-2: XLR-type 3-pin (female) (x2), Line/Mic/Mic +48V (AES/EBU) switchable  |
| TEST Output                              | BNC (x1), 75 Ω, HD-Y, 1.0 Vp-p   | BNC (x1), HD-Y or HD Sync (tri-level) V1.0   | BNC (x1), HD-Y or HD Sync (tri-level) V1.0   | BNC (x1), HD-Y or HD Sync (tri-level) V1.0   |
| DC Input                                 | Lemo 8-pin (male) (x1), DC 10.5 V to 17 V, DC 20 V to 30 V   | XLR-type 4-pin (male) (x1), 11 V to 17 V DC  | XLR-type 4-pin (male) (x1), 11 V to 17 V DC  | XLR-type 4-pin (male) (x1), 11 V to 17 V DC  |
| DC Output                                | DC 12 V: 11-pin (x1), max. 4 A, DC 24 V: 3-pin (x1), max. 4 A  | 4-pin (x2), 11 V to 17 V DC (max. 1.8 A) with battery adapter  | 4-pin (x2), 11 V to 17 V DC (max. 1.8 A) with battery adapter  | 4-pin (x2), 11 V to 17 V DC (max. 1.8 A) with battery adapter  |
| Viewfinder                               | 20-pin (x1), Digital viewfinder interface (x1)*  | Digital viewfinder interface (x1)  | Digital viewfinder interface (x1)  | Digital viewfinder interface (x1)  |
| Lens                                     | 12-pin (x1)  |  |  |  |
| SDI Output                               | BNC (x2), HD-SDI (4:2:2)   | BNC (x4), HD mode: SDI 1/2 Line Output, SDI 3/4 Monitor Output, 4K mode: SDI 1/2/3/4 Line Output, Display On/Off switchable  | BNC (x4), SDI 1/2 Line Output, SDI 3/4 Monitor Output  | BNC (x4), SDI 1/2 Line Output, SDI 3/4 Monitor Output  |
| Timecode Input/Output                    | TC IN (x1), TC OUT (x1) with SR-R4   | TC IN/OUT (x1) switchable  | TC IN/OUT (x1) switchable  | TC IN/OUT (x1) switchable  |
| Genlock Input                            | BNC (x1), 75 Ω, HD 3-level sync, 0.6 Vp-p  | BNC (x1)   | BNC (x1)   | BNC (x1)   |
| Remote                                   | 8-pin (x1)   | 8-pin (x1)   | 8-pin (x1)   | 8-pin (x1)   |
| HDMI Output                              |  | A Type (x1)  | A Type (x1)  | A Type (x1)  |
| External Input/Output                    | Lemo 5-pin (female) (x1)   |  |  |  |
| Ethernet                                 | RJ-45 type (x1), 10BASE-T/100BASE-TX   |  |  |  |
| USB                                      | Type A, USB2.0 Hi-Speed (x1)   | USB device, Mini-B (x1), USB host, type-A (x1)   | USB device, Mini-B (x1), USB host, type-A (x1)   | USB device, Mini-B (x1), USB host, type-A (x1)   |
| Headphone Output                         | Stereo mini jack (x1)  | Stereo mini jack (x1)  | Stereo mini jack (x1)  | Stereo mini jack (x1)  |
| Speaker Output                           |  | Monaural   | Monaural   | Monaural   |
| Supplied Accessories                     | Belt bracket (1), Cable clamp belt (1), 19mm dia carbon rod (1), +B3 x 5 screws (4), Center handle (1), Viewfinder mounting plate (1), Riser plate (1), Power cable connector (LEMO 8-pin) (1), Operation Manual (CD-ROM) (1), Operation Guide (1) | Lens mount adapter (1), Battery adapter (1), Audio input connector (1), Screws for the audio input connector (4), Tape measure hook (1), USB wireless LAN module IFU-WLM3 (1), Before Using this Unit (1), Operating Instructions (CD-ROM) (1) | Lens mount adapter (1), Battery adapter (1), Audio input connector (1), Screws for the audio input connector (4), Tape measure hook (1), USB wireless LAN module IFU-WLM3 (1), Before Using this Unit (1), Operating Instructions (CD-ROM) (1) | Lens mount adapter (1), Battery adapter (1), Audio input connector (1), Screws for the audio input connector (4), Tape measure hook (1), USB wireless LAN module IFU-WLM3 (1), Before Using this Unit (1), Operating Instructions (CD-ROM) (1) |

\* To be supported by CBK-65EL.



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**4K**