

# Full Specifications and Features

## Lens

### Lens compatibility

Sony E-mount lenses

### Lens Mount

E-mount

## Image Sensor

### Aspect Ratio

3:2

### Number Of Pixels (Effective)

Approx. 42.4 megapixels

### Number of Pixels (total)

Approx. 43.6 megapixels

### Sensor type

35 mm full frame (35.9 x 24.0 mm), Exmor R® CMOS sensor

### Anti-Dust System

Charge protection coating on optical filter and image sensor shift mechanism

## Recording (still images)

### Recording Format

JPEG (DCF Ver. 2.0, Exif Ver.2.31, MPF Baseline compliant), RAW (Sony ARW 2.3 format)

### Image Size (pixels) [3:2]

35 mm full-frame L: 7952 x 5304 (42M), M: 5168 x 3448 (18M), S: 3984 x 2656 (11M), APS-C L: 5168 x 3448 (18M), M: 3984 x 2656 (11M), S: 2592 x 1728 (4.5M)

### Image Size (pixels) [16:9]

35 mm full-frame L: 7952 x 4472 (36M), M: 5168 x 2912 (15M), S: 3984 x 2240 (8.9M), APS-C L: 5168 x 2912 (15M), M: 3984 x 2240 (8.9M), S: 2592 x 1456 (3.8M)

### Image Quality Modes

RAW, RAW & JPEG (Extra fine, Fine, Standard), JPEG (Extra fine, Fine, Standard)

### Picture Effect

Posterization (Colour), Posterization (B/W), Pop Colour, Retro Photo, Partial Colour (R/G/B/Y), High Contrast Monochrome, Toy Camera (Normal/Cool/Warm/Green/Magenta), Soft High-key

### Creative Style

Standard, Vivid, Neutral, Clear, Deep, Light, Portrait, Landscape, Sunset, Night Scene, Autumn leaves, Black & White, Sepia, Style Box (1–6), (Contrast (–3 to +3 steps), Saturation (–3 to +3 steps), Sharpness (–3 to +3 steps))

#### **Picture Profile**

Yes (Off/PP1-PP10) Parameters: Black level, Gamma (Movie, Still, Cine1-4, ITU709, ITU709 [800%], S-Log2, S-Log3, HLG, HLG1-3), Black Gamma, Knee, Colour Mode, Saturation, Colour Phase, Colour Depth, Detail, Copy, Reset

#### **Dynamic Range Functions**

Off, Dynamic Range Optimiser (Auto/Level (1-5)), Auto High Dynamic Range (Auto Exposure Difference, Exposure Difference Level (1-6 EV, 1.0 EV step))

#### **Colour Space**

sRGB standard (with sYCC gamut) and Adobe RGB standard compatible with TRILUMINOS Colour

#### **14bit RAW**

Yes

#### **Uncompressed RAW**

Yes

## **Recording (movie)**

#### **Recording Format**

XAVC S, AVCHD format Ver. 2.0 compliant

#### **Video Compression**

XAVC S: MPEG-4 AVC/H.264, AVCHD: MPEG-4 AVC/H.264

#### **Audio Recording Format**

XAVC S: LPCM 2ch, AVCHD: Dolby Digital (AC-3) 2ch, Dolby Digital Stereo Creator

#### **Colour Space**

xvYCC standard (x.v.Colour when connected via HDMI cable) compatible with TRILUMINOS Colour

#### **Picture Effect**

8 types: Posterization (Colour), Posterization (B/W), Pop Colour, Retro Photo, Partial Colour (R/G/B/Y), High Contrast Monochrome, Toy Camera (Normal/Cool/Warm/Green/Magenta), Soft High-key, Rich-tone Monochrome

#### **Creative Style**

Standard, Vivid, Neutral, Clear, Deep, Light, Portrait, Landscape, Sunset, Night Scene, Autumn leaves, Black & White, Sepia, Style Box (1-6), (Contrast (-3 to +3 steps), Saturation (-3 to +3 steps), Sharpness (-3 to +3 steps))

#### **Picture Profile**

Yes (Off/PP1-PP10) Parameters: Black level, Gamma (Movie, Still, Cine1-4, ITU709, ITU709 [800%], S-Log2, S-Log3, HLG, HLG1-3), Black Gamma, Knee, Colour Mode, Saturation, Colour Phase, Colour Depth, Detail, Copy, Reset

#### **Image Size (pixels), NTSC**

XAVC S 4K: 3840 x 2160 (30p, 100 M), 3840 x 2160 (24p, 100 M), 3840 x 2160 (30p, 60 M), 3840 x 2160 (24p, 60 M), XAVC S HD: 1920 x 1080 (120p, 100 M), 1920 x 1080 (120p, 60 M), 1920 x 1080 (60p, 50 M), 1920 x 1080 (30p, 50 M), 1920 x 1080 (24p, 50 M)

M), 1920 x 1080 (60p, 25 M), 1920 x 1080 (30p, 16 M) AVCHD: 1920 x 1080 (60i, 24 M, FX), 1920 x 1080 (60i, 17 M, FH)

**Image Size (pixels), PAL**

XAVC S 4K: 3840 x 2160 (25p, 100 M), 3840 x 2160 (25p, 60 M) XAVC S HD: 1920 x 1080 (100p, 100 M), 1920 x 1080 (100p, 60 M), 1920 x 1080 (50p, 50 M), 1920 x 1080 (25p, 50 M), 1920 x 1080 (50p, 25 M), 1920 x 1080 (25p, 16 M) AVCHD: 1920 x 1080 (50i, 24 M, FX), 1920 x 1080 (50i, 17 M, FH)

**Image frame rate**

NTSC mode: 1fps,2fps,4fps,8fps,15fps,30fps,60fps,120fps, PAL mode: 1fps,2fps,3fps,6fps,12fps,25fps,50fps,100fps

**Image size (frame rate)**

NTSC mode: 1920 x 1080 (60p, 30p, 24p), PAL mode: 1920x1080 (50p, 25p)

**Movie Functions**

Audio Level Display, Audio Rec Level, PAL/NTSC Selector, Yes (1280 x 720 (9 Mbps)), TC/UB, (TC Preset/UB Preset/TC Format/TC Run/TC Make/UB Time Rec), Auto Slow Shutter, REC Control, Clean HDMI Info.(ON/OFF selectable), Gamma Disp. Assist

**HDMI Output**

3840 x 2160 (25p), 1920 x 1080 (50p), 1920 x 1080 (50i), 1920 x 1080 (24p), 1920 x 1080 (60p), 1920 x 1080 (60i), 3840 x 2160 (30p), 3840 x 2160 (24p), YCbCr 4:2:2 8bit / RGB 8bit

## Recording System

**Location information Link from smartphone**

Yes

**Media**

Memory Stick PRO Duo™, Memory Stick PRO-HG Duo™, Memory Stick Micro™ (M2), SD memory card, SDHC memory card (UHS-I/II compliant), SDXC memory card (UHS-I/II compliant), microSD memory card, microSDHC memory card, microSDXC memory card

**Memory Card Slot**

SLOT1: Slot for SD (UHS-I/II compliant) memory card, SLOT2: Multi slot for Memory Stick Duo/SD (UHS-I compliant) memory card

## Noise Reduction

**Noise Reduction**

Long exposure NR: On/Off, available at shutter speeds longer than 1 sec. High ISO NR: Normal/Low/Off

**Multi Frame NR**

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# White balance

## White Balance Modes

Auto / Daylight / Shade / Cloudy / Incandescent / Fluorescent Warm White / Cool White / Day White / Daylight/ Flash / Underwater/ Colour Temperature 2500 to 9900K & colour filter G7 to M7 (57-step), A7 to B7 (29-step)/ Custom

## AWB Micro Adjustment

Yes G7 to M7, 57-step A7 to B7, 29-step

## Priority Set in AWB

Yes

## Bracketing

3 frames, H/L selectable

# Focus

## Focus Type

Fast Hybrid AF (phase-detection AF/contrast-detection AF)<sup>2</sup>

## Focus Sensor

Exmor R<sup>®</sup> CMOS sensor

## Focus Point

35 mm full frame: 399 points (phase-detection AF), APS-C mode with full frame lens: 323 points (phase-detection AF), with APS-C lens: 255 points (phase-detection AF) / 425 points (contrast-detection AF)

## Focus Sensitivity Range

EV-3 to EV20 (ISO100 equivalent with F2.0 lens attached)

## Focus Mode

AF-A (Automatic AF), AF-S (Single-shot AF), AF-C (Continuous AF), DMF (Direct Manual Focus), Manual Focus

## Focus Area

Wide (399 points (phase-detection AF), 425 points (contrast-detection AF)) / Zone / Centre / Flexible Spot (S/M/L) / Expanded Flexible Spot / Lock-on AF ( Wide / Zone / Centre / Flexible Spot (S/M/L)/Expanded Flexible Spot)

## Other Features

Eye-start AF (only with LA-EA2 or LA-EA4 attached (Sold separately)), Lock-on AF, Eye AF, AF micro adjustment (Sold separately), with LA-EA2 or LA-EA4, Predictive control, Focus lock, AF Track Sens, Swt.V/H AF Area, AF Area Regist.

## AF Illuminator

Yes (with Built-in LED type)

## AF Illuminator range

Approx. 0.3 m–approx. 3.0 m (with FE 28–70 mm F3.5–5.6 OSS attached)

## Focus type with LA-EA3 (Sold separately)

Selectable (phase-detection, contrast-detection)

# Exposure

## **Metering Type**

1200-zone evaluative metering

## **Metering Sensor**

Exmor R® CMOS sensor

## **Metering Sensitivity**

EV -3 to EV 20 (at ISO100 equivalent with F2.0 lens attached)

## **Metering Mode**

Multi-segment, Centre-weighted, Spot, Spot Standard/Large, Entire Screen Avg.,

Highlight

## **Exposure Compensation**

+/- 5.0EV (1/3 EV, 1/2 EV steps selectable), (with exposure compensation dial: +/- 3EV (1/3 EV steps))

## **Exposure Bracketing**

Bracket: Cont., Bracket: Single, 3/5/9 frames selectable. With 3 or 5 frames, in 1/3, 1/2, 2/3, 1.0, 2.0 or 3.0 EV increments, with 9 frames, in 1/3, 1/2, 2/3 or 1.0 EV increments.

## **AE Lock**

Locked when shutter button is pressed halfway. Available with AE lock button.

(On/Off/Auto)

## **Exposure Modes**

AUTO (iAuto), Programmed AE (P), Aperture priority (A), Shutter-speed priority (S), Manual (M), Movie (Programmed AE (P) / Aperture priority (A) / Shutter-speed priority (S) / Manual (M) ), Slow & Quick Motion (Programmed AE (P) / Aperture priority (A) / Shutter-speed priority (S) / Manual (M) )

## **ISO Sensitivity (Recommended Exposure Index)**

Still images: ISO 100-32000 (Expandable to ISO 50 to 102400), AUTO (ISO 100-12800, selectable lower limit and upper limit), Movies: ISO 100-32000 equivalent, AUTO (ISO 100-12800, selectable lower limit and upper limit)

## **Anti-Flicker Shoot.**

Yes

# Viewfinder

## **Viewfinder Type**

1.3 cm (0.5-type) electronic viewfinder (colour), Quad-VGA OLED

## **Number of Dots**

3 686 400 dots

## **Brightness Control (Viewfinder)**

Auto/Manual (5 steps between -2 and +2)

## **Colour Temperature Control**

Manual (5 steps)

## **Field Coverage**

100%

**Magnification**

approx. 0.78 x (with 50 mm lens at infinity, -1 m-1)

**Dioptr Adjustment**

-4.0 to +3.0m-1

**Eye Point**

Approx. 23 mm from the eyepiece lens, 18.5 mm from the eyepiece frame at -1m-1 (CIPA standard)

**Finder Frame Rate Selection**

NTSC: Std 60fps, Hi 12fps; PAL: Std 50fps, Hi 100fps

**Display Contents**

Graphic Display, Display All Info., No Disp. Info., Digital Level Gauge, Histogram

## LCD Screen

**Monitor Type**

7.5 cm (3.0-type) type TFT

**Number of Dots**

14,40,000 dots

**Touch Panel**

Yes

**Brightness Control**

Manual (5 steps between -2 and +2), Sunny Weather mode

**Adjustable Angle**

Up by approx. 107 degrees, Down by approx. 41 degrees

**Display Selector (Finder/LCD)**

Yes (Auto/Manual)

**Real-time Image Adjustment Display (LCD)**

On/Off

**Quick Navi**

Yes

**Focus Magnifier**

Yes (35 mm full frame: 6.2x, 12.4x, APS-C: 4.0x, 8.0x)

**Zebra**

Yes, (selectable level + range or lower limit as custom setting)

**Peaking MF**

Yes (Level setting: High/Mid/Low/Off, Colour: White/Red/Yellow)

**Others**

(Rule of 3rds Grid/Square Grid/Diag. + Square Grid/Off), Movie Marker, (Centre/Aspect/Safety Zone/Guideframe), WhiteMagic™, Grid Line

**Display Content**

Graphic Display, Display All Info., No Disp. Info., Digital Level Gauge, Histogram, For viewfinder, Monitor Off

## Other Features

## PlayMemories Camera Apps™

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### Clear Image Zoom

Still images: Approx. 2x, Movies: Approx. 1.5x (4K), Approx. 2x (HD)

### Digital zoom

Smart zoom (Still images): 35 mm full frame: M: approx. 1.5x, S: approx. 2x, APS-C: M: approx. 1.3x, S: approx. 2x, Digital zoom (Still images): 35 mm full frame: L: approx. 4x, M: approx. 6.2x, S: approx. 8x, APS-C: L: approx. 4x, M: approx. 5.2x, S: approx. 8x, Digital zoom (Movie): 35 mm full frame: approx. 4x, APS-C: approx 4x

### Face Detection

Modes: Face Priority in AF(On/Off), Face Priority in Multi Metering(On/Off), Regist. Faces Priority (On/Off), Face registration, Max. number detectable: 8

### Others

Touch Focus: Yes (Available with LCD monitor or Viewfinder operation), ISO AUTO Min. SS, Bright Monitoring, Set File Name, Copyright Info, FTP Transfer Func., Help guide, Area Setting, Shop Front Mode, Video Light Mode, Zoom Ring Rotate

### Eye-Fi ready

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## Shutter

### Type

Electronically-controlled, vertical-traverse, focal-plane type

### Shutter Speed

Still images: 1/8000 to 30 seconds, Bulb, Movies: 1/8000 to 1/4 (1/3 steps); up to 1/60 in AUTO mode (up to 1/30 in Auto slow shutter mode);

### Flash Sync. Speed

1/250 sec.<sup>3</sup>

### Electronic Front Curtain Shutter

Yes (ON/OFF)

### Silent Shooting

Yes (ON/OFF)

## Image stabilisation

### Type

Image Sensor-Shift mechanism with 5-axis compensation (Compensation depends on lens specifications)

### Compensation Effect

5.5 stops (based on CIPA standard. Pitch/yaw shake only. With Planar T\* FE 50 mm F1.4 ZA lens mounted. Long exposure NR off.)

## Flash Control

## Control

Pre-flash TTL

## Flash Compensation

+/- 3.0 EV (switchable between 1/3 and 1/2 EV steps)

## Flash Bracketing

3/5/9 frames selectable. With 3 or 5 frames, in 1/3, 1/2, 2/3, 1.0, 2.0, 3.0 EV increments, with 9 frames, in 1/3, 1/2, 2/3, 1.0 EV increments.

## Flash Modes

Flash off, Autoflash, Fill-flash, Slow Sync., Rear Sync., Red-eye reduction (on/off selectable), Wireless<sup>4</sup>, Hi-speed sync.<sup>4</sup>

## External Flash Compatibility

Sony  $\alpha$  System Flash compatible with Multi Interface Shoe, attach the shoe adaptor for flash compatibility with the Auto-lock accessory shoe

## FE Level Lock

Yes

## Wireless Control

Yes (Light signal: Available with Fill-flash, Slow Sync., Hi-speed sync. /Radio signal: Available with Fill-flash, Rear Sync., Slow Sync., Hi-speed sync.)

# Drive

## Drive Modes

Single Shooting, Continuous shooting (Hi+/Hi/Mid/Lo selectable), Self-timer, Self-timer (Cont.), Bracket: Single, Bracket: Cont., White Balance bracket, DRO bracket

## Continuous Drive Speed (approx. max.)

Continuous shooting: Hi+: max. 10 fps, Hi: max. 8 fps, Mid: max. 6fps, Lo: max. 3 fps <sup>5</sup>

## No. of recordable frames (approx.)

JPEG Extra fine L: 76 frames, JPEG Fine L: 76 frames, JPEG Standard L: 76 frames, RAW: 76 frames, RAW & JPG: 76 frames, RAW (Uncompressed): 28 frames, RAW (Uncompressed) and JPG: 28 frames, <sup>5</sup>

## Self-Timer

10 sec. delay/5 sec. delay/2 sec. delay/Continuous self-timer (3 frames after 10 sec. delay/5 frames after 10 sec. delay/3 frames after 5 sec. delay/5 frames after 5 sec. delay/3 frames after 2 sec. delay/5 frames after 2 sec. delay)/Bracketing self-timer

## Self-Timer

Yes <sup>6</sup>

# Playback

## Photo Capture

Yes

## Modes

Single (with or without shooting information Y RGB histogram & highlight/shadow warning), 9/25-frame index view, Enlarged display mode (L: 19.9x, M: 12.9x, S: 10.0x),

Auto Review (10/5/2 sec, Off), Image orientation (Auto/Manual/Off selectable), Slideshow, Folder selection (Date/ Still/ AVCHD/XAVC S HD/XAVC S 4K), Forward/Rewind (movie), Delete, Protect, Rating, Disp Cont Shoot Grp

## Interface

### PC Interface

Mass-storage, MTP, PC remote

### Multi/Micro USB Terminal

Yes<sup>7</sup>

### USB Type-C™ Terminal

Yes (SuperSpeed USB (USB 3.1 Gen 1) compatible)

### NFC™

Yes (NFC forum Type 3 Tag compatible), One-touch remote, One-touch sharing

### Wireless LAN (Built-In)

Wi-Fi Compatible, IEEE 802.11b/g/n(2.4GHz band), View on Smartphone: Yes, Send to Computer: Yes, View on TV <sup>8</sup>

### Bluetooth®

Yes (Bluetooth® Standard Ver. 4.1 [2.4GHz band])

### HD Output

4K movie output/4K still image PB, BRAVIA Sync (Control for HDMI), HDMI micro connector (Type-D), PhotoTV HD

### Multi Interface Shoe

Yes<sup>2</sup>

### Mic Terminal

Yes (3.5 mm Stereo minijack)

### Sync Terminal

Yes

### Headphone Terminal

Yes (3.5 mm Stereo minijack)

### Vertical Grip Connector

Yes

### PC Remote

Yes

### LAN Terminal

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## Audio

### Microphone

Built-in stereo microphone or XLR-K2M/XLR-K1M/ECM-XYST1M (sold separately)

### Speaker

Built-in, monaural

# Print

## Compatible Standards

Exif Print, Print Image Matching III, DPOF setting

# Custom function

## Type

Custom key settings, Programmable Setting (Body 3 sets /memory card 4 sets), My Menu, Reg Cust Shoot Set

# Lens Compensation

## Setting

Peripheral Shading, Chromatic Aberration, Distortion

# Power

## Supplied Battery

One rechargeable battery pack NP-FZ100

## Battery Life (Still Images)

Approx. 530 shots (Viewfinder) / approx. 650 shots (LCD monitor) (CIPA standard)<sup>10</sup>

## Battery Life (Movie, actual recording)

Approx. 100 min (Viewfinder) / Approx. 115 min (LCD monitor), (CIPA standard)<sup>1112</sup>

## Battery Life (Movie, continuous recording)

Approx. 180 min (Viewfinder) / Approx. 190 min (LCD monitor), (CIPA standard)<sup>1113</sup>

## Internal Battery Charge

Yes (Available with Multi/Micro USB Terminal or USB Type-C™ Terminal)

## Power consumption with Viewfinder

Still images: approx. 3.7 W (with FE 28-70 mm F3.5-5.6 OSS lens attached), Movies: approx. 5.5 W (with FE 28-70mm F3.5-5.6 OSS lens attached)

## Power consumption with LCD screen

Still images: approx. 3.0 W (with FE 28-70 mm F3.5-5.6 OSS lens attached), Movies: approx. 5.2 W (with FE 28-70 mm F3.5-5.6 OSS lens attached)

## USB Power Supply

Yes (Available with Multi/Micro USB Terminal or USB Type-C™ Terminal)

# Others

## Operating Temperature

32 - 104 degrees F / 0 - 40 degrees C

# Size & Weight

## **Weight (with battery and memory card included)**

657 g / 1 lb 7.2 oz

## **Dimensions (W x H x D)**

Approx. 126.9 mm x 95.6 mm x 73.7 mm, Approx. 126.9 mm x 95.6 mm x 62.7 mm  
(from grip to monitor)/Approx. 5 x 3 7/8 x 3, Approx. 5 x 3 7/8 x 2 1/2 (from grip to  
monitor)