

# SPECIFICATION SHEET

## Lens

### Lens Mount

E-mount

### Lens compatibility

Sony E-mount lenses

## Sensor

### Sensor type

35 mm

### Sensor

35 mm full frame (35.6 x 23.8 mm), Exmor™ CMOS sensor

### Number Of Pixels (Effective)

Approx. 12.2 megapixels

### Number of Pixels (total)

Approx. 12.4 megapixels

### Image Sensor Aspect Ratio

3:2

### Anti-Dust System

Charge protection coating on optical filter and image sensor shift mechanism

## Recording (still images)

### Recording Format (Still images)

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

### Image Size (pixels), 3:2

35 mm full-frame L: 4240 x 2832 (12M), M: 2768 x 1848 (5.1M), S: 2128 x 1416 (3.0M), APS-C L: 2768 x 1848 (5.1M), M: 2128 x 1416 (3.0M), S: 1376 x 920 (1.3M)

### Image Size (pixels), 16:9

35 mm full-frame L: 4240 x 2384 (10M), M: 2768 x 1560 (4.3M), S: 2128 x 1200 (2.6M), APS-C L: 2768 x 1560 (4.3M), M: 2128 x 1200 (2.6M), S: 1376 x 776 (1.1M)

### Image Size (pixels), Sweep Panorama

Wide: horizontal 12416 x 1856 (23M), vertical 5536 x 2160 (12M), Standard: horizontal 8192 x 1856 (15M), vertical 3872 x 2160 (8.4M)

**Image Quality Modes**

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

**RAW Output**

14 bit

**Uncompressed RAW**

Yes

**Picture Effect**

13 modes: Posterisation (Color, B/W), Pop Color, Retro Photo, Partial Color (R, G, B, Y), High Contrast Monochrome, Toy Camera, Soft High-key, Soft Focus, HDR Painting, Rich-tone Monochrome, Miniature, WaterColor, Illustration

**Creative Style**

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

**Dynamic Range Functions**

Off, Dynamic Range Optimiser (Auto/Level (1-5)), Auto High Dynamic Range: Auto Exposure Difference, Exposure Difference Level (1.0-6.0 EV, 1.0 EV step)

**Colour Space**

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

## Recording (movie)

**Recording Format (Movie)**

XAVC S / AVCHD format Ver. 2.0 compliant / MP4

**Video Compression**

XAVC S: MPEG-4 AVC/H.264, AVCHD: MPEG-4 AVC/H.264, MP4: MPEG-4 AVC/H.264

**Audio Recording Format**

XAVC S: LPCM, 2ch, AVCHD: Dolby Digital (AC-3), 2ch, Dolby Digital Stereo Creator, MP4: MPEG-4 AAC-LC, 2ch

**Image Size (Pixels), NTSC**

XAVC S 4K: 3840 x 2160 (30p/100Mbps, 30p/60Mbps, 24p/100Mbps, 24p/60Mbps), XAVC S HD: 1920 x 1080 (60p/50Mbps, 30p/50Mbps, 24p/50Mbps, 120p/100Mbps, 120p/60Mbps), AVCHD: 1920 x 1080 (60p/28Mbps/PS, 60i/24Mbps/FX, 60i/17Mbps/FH, 24p/24Mbps/FX, 24p/17Mbps/FH), MP4: 1920 x 1080 (60p/28Mbps, 30p/16Mbps), 1280 x 720 (30p/6Mbps)

**Image Size (pixels), PAL**

XAVC S 4K: 3840 x 2160 (25p/100Mbps, 25p/60Mbps), XAVC S HD: 1920 x 1080 (50p/50Mbps, 25p/50Mbps, 100p/100Mbps, 100p/60Mbps), AVCHD: 1920 x 1080 (50p/28Mbps/PS, 50i/24Mbps/FX, 50i/17Mbps/FH, 25p/24Mbps/FX, 25p/17Mbps/FH), MP4: 1920 x 1080 (50p/28Mbps, 25p/16Mbps), 1280 x 720 (25p/6Mbps)

**High Frame Rate Recording**

NTSC: 1920 x 1080 (24p/12Mbps, 30p/16Mbps), PAL: 1920 x 1080 (25p/16Mbps)

## **Picture Profile**

Yes (Off / PP1-PP9) Parameters: Black level, Gamma (Movie, Still, Cine1-4, ITU709, ITU709 [800%], S-Log2, S-Log3), Black Gamma, Knee, Color Mode (Movie, Still, Cinema, Pro, ITU709 Matrix, White&Black, S-Gamut, S-Gamut3.Cine, S-Gamut3), Saturation, Color Phase, Color Depth, Detail, Copy, Reset

## **Movie Functions**

Audio Level Display, Audio Rec Level, Auto Slow Shutter, HDMI info. Display (On/Off selectable), Time Code/User Bit, Picture Profile, Creative Style, Picture Effect, Rec Control, Dual Video Rec, Marker Setting, PAL/NTSC Selector, Gamma Display Assist

## **Colour Space**

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

# **Clean HDMI Output**

## **Clean HDMI output**

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

# **Storage Media**

## **Compatible Recording Media**

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

## **Storage Media Slot**

Multi slot for Memory Stick Duo™/ SD 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 selectable

## **Multi Frame NR**

Auto/ISO 100 to 409600

# **White balance**

## **White Balance Modes**

Auto WB / Daylight / Shade / Cloudy / Incandescent / Fluorescent (Warm White / Cool White / Day White / Daylight) / Flash / Color Temperature (2500 to 9900K) & Color Filter (G7 to M7: 57 steps, A7 to B7: 29 steps) / Custom / Underwater

**AWB Micro Adjustment**

G7 to M7 (57 steps), A7 to B7 (29 steps)

**Bracketing**

3 frames, H/L selectable

## Focus

**Focus Type**

Contrast-detection AF

**Focus Sensor**

ExmorCMOS sensor

**Focus Point**

169 points

**Focus Sensitivity Range**

EV -4 to EV 20 (at ISO 100 equivalent with F2.0 lens attached)

**AF Mode**

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

**Focus Area**

Wide (169 points for contrast-detection AF) / Centre / Flexible Spot (S/M/L) / Zone / Expand Flexible Spot / Lock-on AF (Wide / Zone / Centre / Flexible Spot (S/M/L) / Expand Flexible Spot)

**Other Features**

Eye-Start AF and AF micro adjustment (both only available with optional LA-EA2 or LA-EA4 attached), AF illuminator (built-in, LED type, range: Approx. 0.30-3 m), AF ON, Lock-on AF, Eye AF, Focus lock

## Exposure

**Metering Type**

1200-zone evaluative metering

**Metering Sensor**

ExmorCMOS sensor

**Metering Sensitivity**

EV -3 to EV 20 (at ISO 100 equivalent with F2.0 lens attached)

**Metering Mode**

Multi-segment, Center-weighted, Spot

**Exposure Modes**

AUTO (iAUTO, Superior Auto), Programmed AE (P), Aperture priority (A), Shutter-speed priority (S), Manual (M), Scene Selection, Sweep Panorama, Movie / High Frame

Rate (Programmed AE (P) / Aperture priority (A) / Shutter-speed priority (S) / Manual (M) )

**Scene Selection**

Portrait, Landscape, Macro, Sports Action, Sunset, Night Portrait, Night Scene, Hand-held Twilight, Anti Motion Blur

**Exposure Compensation**

+/-5.0 EV (in 1/3 EV or 1/2 EV steps), with exposure compensation dial: +/-3.0 EV (in 1/3 EV steps)

**Auto (AE) Bracketing**

Bracket: Single/Bracket: Cont., 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**

Available with AE lock button. Locked when shutter button is pressed halfway. Can be disabled from the Menu.

**ISO Sensitivity (Recommended Exposure Index)**

Still images: ISO 100-102400 (expandable to ISO 50-409600), AUTO (ISO 100-12800, selectable lower limit and upper limit), Movies: ISO 100-102400 equivalent (expandable to ISO 100-409600), AUTO (ISO 100-12800 equivalent, selectable lower limit and upper limit)

## Viewfinder

**Viewfinder Type**

XGA OLED, 1.3 cm (0.5 type) electronic viewfinder (colour)

**Number of Dots**

2,359,296 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<sup>-1</sup>)

**Dioptr Adjustment**

-4.0 to +3.0 m<sup>-1</sup>

**Eye Point**

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

**Viewfinder Display**

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

**Real-time Image Adjustment Display**

On/Off

# LCD Screen

## Monitor Type

7.5 cm (3.0 type) TFT drive

## Total Number of Dots

1,228,800 dots

## Brightness Control (LCD)

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)

Auto/Manual

## LCD Display

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

## Real-time Image Adjustment Display (LCD)

On/Off

## Focus Magnifier

35 mm full frame: 4.2x, 8.3x, APS-C: 2.7x, 5.4x

## Zebra

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

## Quick Navi

Yes

## Peaking MF

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

# Other Features

## Face Detection

On / On (Regist. Faces) / Off, Face registration, Face selection (Max. number of detectable faces: 8)

## Auto Object Framing

Yes

## Clear Image Zoom

Still/Movie: Approx. 2x

## Smart zoom (Still Image)

35mm full frame: M: approx 1.5x, S: approx 2x, APS-C: M: approx 1.3x, S: approx 2x

## Digital zoom (Still Image)

35mm full frame: L: approx 4x, M: approx 6.1x, S :approx 8x, APS-C: L: approx 4x, M: approx 5.2x, S: approx 8x

## Digital zoom (Movie)

35mm full frame: approx 4x, APS-C: approx 4x

## PlayMemories Camera Apps™

Yes\*1

## Lens Compensation

Peripheral shading, chromatic aberration, distortion

**Zoom Ring Rotate**

Yes

**Image processor**

BIONZ X™

**Smile Shutter**

Smile shutter (selectable from 3 steps)

## Shutter

**Shutter Type**

Electronically controlled, vertical-traverse, focal-plane type

**Shutter Speed**

Still images: 1/8000 to 30 sec., Bulb, Movies: 1/8000 to 1/4 (1/3 step) NTSC: Up to 1/60 in AUTO mode (up to 1/30 in Auto Slow Shutter mode), PAL: Up to 1/50 in AUTO mode (up to 1/25 in Auto Slow Shutter mode)

**Flash Sync. Speed**

1/250 sec.\*2

**Electronic Front Shutter Curtain**

Yes (On/Off)

**Silent Shooting**

Yes (On/Off)

## Image stabilisation

**SteadyShot**

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

**Compensation Effect**

4.5 steps (Based on CIPA standard. Pitch/Yaw shake only. With Sonnar T\* FE 55 mm F1.8 ZA lens mounted. Long exposure NR off)

## Flash Control

**Flash Control**

Pre-flash TTL

**Flash Compensation**

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

**Flash Compensation**

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, Rear Sync., Slow Sync., Red-eye reduction (On/Off selectable), Hi-speed sync\*2, Wireless\*2

### **External Flash Compatibility**

Sony  $\alpha$  System Flash compatible with Multi Interface Shoe. Attach the shoe adaptor for flash compatible with Auto-lock Accessory Shoe.

### **FE Level Lock**

Yes

### **Flash Type**

Optional

## **Drive**

### **Drive Modes**

Single shooting, Continuous shooting, Speed Priority Continuous shooting, Self-timer, Self-timer (Cont.), Bracketing (Cont., Single, White Balance, DRO)

### **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 (Off/2 sec. delay/5 sec. delay/10 sec. delay)

### **Speed (approx. max.)**

Speed Priority Continuous shooting: Max. 5fps, Continuous shooting: Max. 2.5fps\*3

### **No. of recordable frames (approx.)**

Speed Priority Continuous shooting: 64 frames (JPEG Extra Fine L), 200 frames (JPEG Fine L), 200 frames (JPEG Standard L), 31 frames (RAW), 26 frames (RAW & JPEG), 24 frames (RAW (Uncompressed)), 24 frames (RAW (Uncompressed) & JPEG)  
Continuous shooting: 100 frames (JPEG Extra Fine L), 200 frames (JPEG Fine L), 200 frames (JPEG Standard L), 59 frames (RAW), 34 frames (RAW & JPEG), 29 frames (RAW (Uncompressed)), 28 frames (RAW (Uncompressed) & JPEG)\*3

## **Playback**

### **Playback Modes**

Single (with or without shooting information, Y RGB histogram & highlight/shadow warning), 9/25-frame index view, Enlarged display mode (Maximum magnification L: 13.3x, M: 8.7x, S: 6.7x), Auto Review (10/5/2 sec, off), Image orientation (Auto/Manual/Off selectable), Slideshow, Panorama scrolling, Folder selection (Still / Date / MP4 / AVCHD / XAVC S HD / XAVC S 4K), Forward/Rewind (Movie), Delete, Protect

## **Interface**

### **PC Interface**



Mass-storage, MTP, PC remote

**Multi / Micro USB Terminal**

Yes\*5

**Wireless LAN (Built-In)**

Wi-Fi Compatible, IEEE802.11b/g/n (2.4GHz band)\*4, Playback of still images and movies on smartphones, PCs and TVs

**NFC™**

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

**HD Output**

HDMI micro connector (Type-D), BRAVIA™ Sync (link menu), PhotoTV HD, 4K movie output, 4K still image playback

**Multi Interface Shoe**

Yes

**Others**

Auto-lock Accessory Shoe compatible with supplied shoe adaptor, Microphone terminal (3.5 mm Stereo minijack), Headphone terminal (3.5 mm Stereo minijack), Vertical Grip Connector

## Audio

**Microphone**

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

**Speaker**

Built-in, monaural

## Print

**Compatible Standards**

Exif Print, Print Image Matching III, DPOF setting

## Custom function

**Custom Function Type**

Custom key settings, Programmable setting

**Memory Function**

Yes (2 sets)

## Power

**Supplied Battery**

NP-FW50 W-series Rechargeable Battery Pack

**Battery Life (Still Images)**

Approx. 310 shots (viewfinder) / approx. 370 shots (LCD screen) (CIPA standard)\*9

**Battery Life (CIPA, Movies)**

Actual\*6\*7: Approx. 55 min. (viewfinder) / Approx. 60 min. (LCD screen) (CIPA standard), Continuous\*6\*8: Approx. 95 min. (viewfinder) / Approx. 95 min. (LCD screen) (CIPA standard)

**External Power**

AC-PW20 AC Adaptor (optional)

**Internal Battery Charge**

Yes

## Size & Weight

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

Approx. 126.9 x 95.7 x 60.3 mm

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

Approx. 584 g (Body Only) / Approx. 627 g (With battery and Memory Stick PRO Duo™)

## Others

**Operating Temperature**

0–40 °C/32 °–104 °F

## Operating temperature

**Range**

0–40 °C/32–104 °F

## Wi-Fi®

**Wireless and network capabilities**

NFC One-touch functionality