



<http://www.sony.net/SonyInfo/Support/>

α9

SONY®

4-692-676-41(2)



"Help Guide" (Web manual)
Refer to "Help Guide" for in-depth instructions on the many functions of the camera.

« Manuel d'aide » (Manuel en ligne)
Consultez le « Manuel d'aide » pour obtenir des instructions détaillées au sujet des nombreuses fonctions de l'appareil.

http://rd1.sony.net/help/ilc/1650/h_zz/

E-mount

Interchangeable Lens Digital Camera/Instruction Manual	GB
Appareil photo à objectif interchangeable/Mode d'emploi	FR
Digitalkamera mit Wechselobjektiv/Gebrauchsanleitung	DE
Cámara Digital de Lentes Intercambiables/Manual de instrucciones	ES
Fotocamera digitale con obiettivo intercambiabile/Istruzioni per l'uso	IT
Câmara Digital de Objetivas intercambiáveis/Manual de instruções	PT
Digitale camera met verwisselbare lens/Gebruiksaanwijzing	NL
Aparat cyfrowy z wymiennymi obiektywami/Instrukcja obsługi	PL
Цифровой фотоаппарат со сменным объективом/Инструкция по эксплуатации	RU
Цифровий фотоапарат зі змінним об'єктивом/Посібник з експлуатації	UA
Digitalkamera med utbytbart objektiv/Handledning	SE
Digitaalinen kamera vaihdettavalla objektiivilla/Käyttööopas	FI
Digitalkamera med utskiftbart objektiv/Bruksanvisning	NO
Digitalkamera med udskifteligt objektiv/Betjeningsvejledning	DK

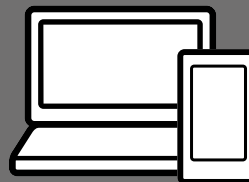
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ILCE-9

Check out the Help Guide!



The “Help Guide” is an on-line manual that you can read on your computer or smartphone. Refer to it for details on menu items, advanced usage, and the latest information on the camera.



Scan here

http://rd1.sony.net/help/ilc/1650/h_zz/

ILCE-9 Help Guide



Instruction Manual (this book)



This manual introduces some basic functions.

For the quick start guide, see “Startup guide” (page 27). The “Startup guide” introduces the initial procedures from when you open the package until you release the shutter for the first shot.

In-Camera Guide



The [In-Camera Guide] shows explanations of the menu items on the monitor of the camera.

You can quickly pull up information during shooting.

To use the [In-Camera Guide] function, some settings must be made beforehand. For details, search “In-Camera Guide” in the Help Guide.

Owner's Record

Record the model and serial number (which are located on the product) in the space provided below. Refer to these numbers whenever you call your Sony dealer regarding this product.

Model No. ILCE-

Serial No. _____

WARNING

To reduce fire or shock hazard, do not expose the unit to rain or moisture.



IMPORTANT SAFETY INSTRUCTIONS -SAVE THESE INSTRUCTIONS DANGER TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, CAREFULLY FOLLOW THESE INSTRUCTIONS

If the shape of the plug does not fit the power outlet, use an attachment plug adaptor of the proper configuration for the power outlet.

CAUTION

Battery pack

If the battery pack is mishandled, the battery pack can burst, cause a fire or even chemical burns. Observe the following cautions.

- Do not disassemble.
- Do not crush and do not expose the battery pack to any shock or force such as hammering, dropping or stepping on it.
- Do not short circuit and do not allow metal objects to come into contact with the battery terminals.
- Do not expose to high temperature above 60°C (140°F) such as in direct sunlight or in a car parked in the sun.
- Do not incinerate or dispose of in fire.
- Do not handle damaged or leaking lithium ion batteries.
- Be sure to charge the battery pack using a genuine Sony battery charger or a device that can charge the battery pack.
- Keep the battery pack out of the reach of small children.
- Keep the battery pack dry.
- Replace only with the same or equivalent type recommended by Sony.
- Dispose of used battery packs promptly as described in the instructions.
- Do not expose to extremely low temperatures of -20°C (-4°F) or lower or extremely low pressures of 11.6 kPa or lower.

GB

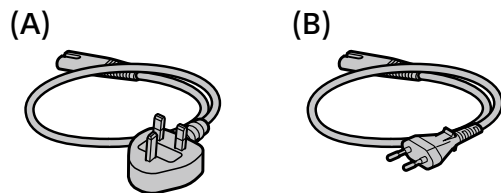
Use a nearby wall outlet (wall socket) when using the AC Adaptor/battery charger. If any malfunction occurs, disconnect the plug from the wall outlet (wall socket) immediately to disconnect from the power source. If you use the product with a charge lamp, note that the product is not disconnected from the power source even when the lamp turns off.

For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to LAN terminal. Follow the instructions for LAN terminal.

The power cord (mains lead), if supplied, is designed specifically for use with this equipment only, and should not be used with other electrical equipment.

Power Cord

For the customers in the UK, Ireland, Malta, Cyprus and Saudi Arabia Use the power cord (A). For safety reasons, the power cord (B) is not intended for above countries/regions and shall therefore not be used there. For the customers in other EU countries/regions Use the power cord (B).



Notice

If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the communication cable (USB, etc.) again.

This product has been tested and found compliant with the limits set out in the EMC regulation for using connection cables shorter than 3 meters (9.8 feet) except LAN cable.

LAN cable

Use a Category 5e or higher Shielded Twisted Pair (STP) cable with high shielding performance.

The electromagnetic fields at the specific frequencies may influence the picture and sound of this unit.

For Customers in the U.S.A. and Canada

RECYCLING LITHIUM-ION BATTERIES

Lithium-Ion batteries are recyclable. You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you.



For more information regarding recycling of rechargeable batteries, call toll free 1-800-822-8837, or visit <http://www.call2recycle.org/>

Caution: Do not handle damaged or leaking Lithium-Ion batteries.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment has very low levels of RF energy that is deemed to comply without testing of specific absorption rate(SAR). The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power Wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure of low-level RF that does not produce heating effects causes no known adverse health effects. Many studies of low-level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research. This equipment has been tested and found to comply with IC radiation exposure limits set forth for an uncontrolled environment and meets RSS-102 of the IC radio frequency (RF) Exposure rules.

For Customers in the U.S.A.

If you have any questions about this product, you may call:

Sony Customer Information Center
1-800-222-SONY (7669).

The number below is for the FCC related matters only.

Regulatory Information

Declaration of Conformity

Trade Name: SONY

Model No.: WW361847

Responsible Party: Sony Electronics
Inc.

Address: 16535 Via Esprillo, San
Diego, CA 92127 U.S.A.

Telephone No.: 858-942-2230

This device complies with Part15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment must not be co-located or operated in conjunction with any other antenna or transmitter.

GB

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For Customers in Canada

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

CAN ICES-3 B/NMB-3 B

For Customers in Europe

Manufacturer: Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan

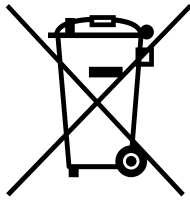
For EU product compliance: Sony Belgium, bijkantoor van Sony Europe Limited, Da Vincilaan 7-D1, 1935 Zaventem, Belgium



Hereby, Sony Corporation, declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. For details, please access the following URL:

<http://www.compliance.sony.de/>

Disposal of waste batteries and electrical and electronic equipment (applicable in the European Union and other European countries with separate collection systems)



This symbol on the product, the battery or on the packaging indicates that the product and the battery shall not

be treated as household waste. On certain batteries this symbol might be used in combination with a chemical symbol. The chemical symbols for mercury (Hg) or lead (Pb) are added if the battery contains more than 0.0005% mercury or 0.004% lead. By ensuring these products and batteries are disposed of correctly, you will help prevent potentially negative consequences for the environment and human health which could otherwise be caused by inappropriate waste handling. The recycling of the materials will help to conserve natural resources.

In case of products that for safety, performance or data integrity reasons require a permanent connection with an incorporated battery, this battery should be replaced by qualified service staff only. To ensure that the battery and the electrical and electronic equipment will be treated properly, hand over these products at end-of-life to the applicable collection point for the recycling of electrical and electronic equipment.

For all other batteries, please view the section on how to remove the battery from the product safely. Hand the battery over to the applicable collection point for the recycling of waste batteries.

For more detailed information about recycling of this product or battery, please contact your local Civic Office, your household waste disposal service or the shop where you purchased the product or battery.

For Customers in Singapore

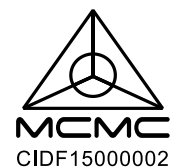
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Complies with
IMDA Standards
DB00353

For Customers in U.A.E.

TRA
REGISTERED No:
ER42682/15
DEALER No:
DA0073692/11

For Customers in Malaysia



For details on the Wi-Fi functions and NFC One-touch functions, refer to the "Help Guide" (page 2).

Notes on using your camera

Along with this section, also see “Precautions” in the Help Guide (page 2).

Screen language

You can select the language displayed on the screen using the menu (page 80).

Notes on recording/playback

- Once you format the memory card, all the data recorded on the memory card will be deleted and cannot be restored. Before formatting, copy the data to a computer or other device.
- Before you start recording, make a trial recording to make sure that the camera is working correctly.

Notes on handling the product

- This camera is designed to be dust and moisture-resistant, but is not waterproof or splash-proof.
- Do not leave the camera, the supplied accessories, or memory cards within the reach of infants. They may be accidentally swallowed. If this occurs, consult a doctor immediately.

No compensation for damaged content or recording failure

Sony can provide no guarantees in the event of failure to record or loss or damage of recorded images or audio data due to a malfunction of the camera or recording media, etc. We recommend backing up important data.

Notes on the monitor, electronic viewfinder, lens, and image sensor

- The monitor and electronic viewfinder are manufactured using extremely high-precision technology, and over 99.99% of the pixels are operational for effective use. However, there may be some small black dots and/or bright dots (white, red, blue or green in color) that constantly appear on the monitor and electronic viewfinder. These dots are normal due to the manufacturing process and do not affect the images in any way.
- Do not hold the camera by the monitor.
- When using the power zoom lens, be careful not to get your fingers or any other objects caught in the lens.
- Do not leave the lens or the viewfinder exposed to a strong light source such as sunlight. Because of the lens’s condensing function, doing so may cause smoke, fire, or a malfunction inside the camera body or the lens. If you have to leave the camera exposed to a light source such as sunlight, attach the lens cap to the lens.
- When you shoot with backlighting, keep the sun sufficiently far away from the angle of view. Otherwise, the sunlight may enter the focus inside the camera and cause smoke or fire. Even if the sun is slightly away from the angle of view, it may still cause smoke or fire.

- Do not directly expose the lens to beams such as laser beams. That may damage the image sensor and cause the camera to malfunction.
- Do not look at sunlight or a strong light source through the lens when it is detached. This may result in unrecoverable damage to the eyes or cause a malfunction.
- Do not use the camera in areas where strong radio waves or radiation are being emitted. Recording and playback may not function correctly.
- Images may trail across on the screen in a cold location. This is not a malfunction.
- The recorded image may be different from the image you monitored before recording.

Notes on using lenses and accessories

It is recommended that you use Sony lenses/accessories designed to suit the characteristics of this camera. Using this camera with products from other manufacturers may affect its performance, leading to accidents or malfunction. Sony bears no responsibility for such accidents or malfunction.

Notes on the Multi Interface Shoe

- When attaching or detaching accessories such as an external flash to the Multi Interface Shoe, first turn the power to OFF. When attaching the accessory, confirm that it is firmly fastened to the camera.
- Do not use the Multi Interface Shoe with a commercially available flash that applies voltages of 250 V or more or has the opposite polarity of the camera. It may cause a malfunction.

Notes on shooting with an external flash

When shooting with an external flash, light and dark stripes may appear on the image if the shutter speed is set to faster than 1/4000 seconds.

Notes on shooting with the viewfinder

- The image may be slightly distorted near the corners of the viewfinder. This is not a malfunction. When you want to see the full composition with all its details, you can also use the monitor.
- If you pan the camera while looking into the viewfinder or move your eyes around, the image in the viewfinder may be distorted or the color of the image may change. This is a characteristic of the lens or display device and is not a malfunction. When you shoot an image, we recommend that you look at the center area of the viewfinder.



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- When shooting with the viewfinder, you may experience symptoms such as eyestrain, fatigue, travel sickness, or nausea. We recommend that you take a break at regular intervals when you are shooting with the viewfinder. In case you may feel uncomfortable, refrain from using the viewfinder until your condition recovers, and consult your doctor as necessary.

Notes on continuous shooting

During continuous shooting, the monitor or viewfinder may flash between the shooting screen and a black screen. If you keep watching the screen in this situation, you may experience uncomfortable symptoms such as feeling of unwellness. If you experience uncomfortable symptoms, stop using the camera, and consult your doctor as necessary.

Notes on recording for long periods of time or recording 4K movies

- Depending on the camera and battery temperature, you may be unable to record movies or the power may turn off automatically to protect the camera. A message will be displayed on the screen before the power turns off or you can no longer record movies. In this case, leave the power off and wait until the camera and battery temperature goes down. If you turn on the power without letting the camera and battery cool enough, the power may turn off again or you may be unable to record movies.
- Under high ambient temperatures, the temperature of the camera rises quickly.
- When the temperature of the camera rises, the image quality may deteriorate. It is recommended that you wait until the temperature of the camera drops before continuing to shoot.
- The surface of the camera may get warm. This is not a malfunction.
- If the same part of your skin touches the camera for a long period of time while using the camera, even if the camera does not feel hot to you, it may cause symptoms of a low-temperature burn such as redness or blistering.

Pay special attention in the following situations and use a tripod, etc.

- When using the camera in a high-temperature environment
- When someone with poor circulation or impaired skin sensation uses the camera
- When using the camera with the [Auto Pwr OFF Temp.] set to [High].

- Especially during 4K movie shooting, the recording time may be shorter under low temperature conditions. Warm up the battery pack or replace it with a new battery.

Notes on playing back movies on other devices

Movies recorded with this camera may not be played back correctly on other devices. Also, movies recorded with other devices may not be played back correctly on this camera.

Warning on copyright


Television programs, films, videotapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provisions of the copyright laws.


On the data specifications described in this manual

The data on performance and specifications are defined under the following conditions, except as described in this manual: at an ordinary ambient temperature of 25°C (77°F), and using a battery pack that has been fully charged until the charge lamp has turned off.

How to turn off wireless network functions (Wi-Fi, NFC and Bluetooth function, etc.) temporarily

When you board an airplane, etc., you can turn off all wireless network functions temporarily.

Select MENU button →  (Network) → [Airplane Mode] → [On].

If you set [Airplane Mode] to [On], an  (airplane) mark will be displayed on the screen.

Notes on wireless LAN

If your camera is lost or stolen, Sony bears no responsibility for the loss or damage caused by illegal access or use of the registered access point on the camera.

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Notes on security when using wireless LAN products

- Always make sure that you are using a secure wireless LAN to avoid hacking, access by malicious third parties, or other vulnerabilities.
- It is important that you set the security settings when using a wireless LAN.
- If a security problem arises because no security precautions are in place or due to any inevitable circumstances when using a wireless LAN, Sony bears no responsibility for the loss or damage.

Notes on discarding or transferring this product to others

When discarding or transferring this product to others, make sure to perform the following operation to protect private information.

- Select [Setting Reset] → [Initialize] → [OK] → [OK].

Notes on discarding or transferring a memory card to others

Executing [Format] or [Delete] on the camera or a computer may not completely delete the data on the memory card. When transferring a memory card to others, we recommend that you delete the data completely using data deletion software. When discarding a memory card, we recommend that you physically destroy it.

Notes on location information

If you upload and share an image tagged with a location, you may accidentally reveal the information to a third party. To prevent third parties from obtaining your location information, set [Loc. Info. Link Set.] to [Off] before shooting images.

Preparations for shooting

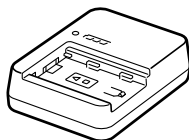
Checking the camera and the supplied items

The number in parentheses indicates the number of pieces.

- Camera (1)
- AC Adaptor (1)

The shape of the AC Adaptor may differ depending on the country/region.

- Battery charger (1)

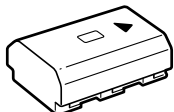


- Power cord (mains lead) (1)*

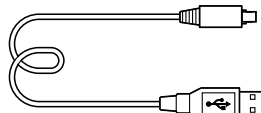


* Multiple power cords may be supplied with your camera. Use the appropriate one that matches your country/region. See page 4.

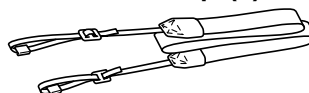
- Rechargeable battery pack NP-FZ100 (1)



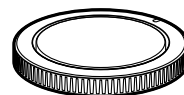
- Micro USB cable (1)



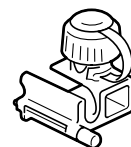
- Shoulder strap (1)



- Body cap (1) (Attached to the camera)



- Cable protector (1)



- Shoe cap (1) (Attached to the camera)

- Eyepiece cup (1) (Attached to the camera)

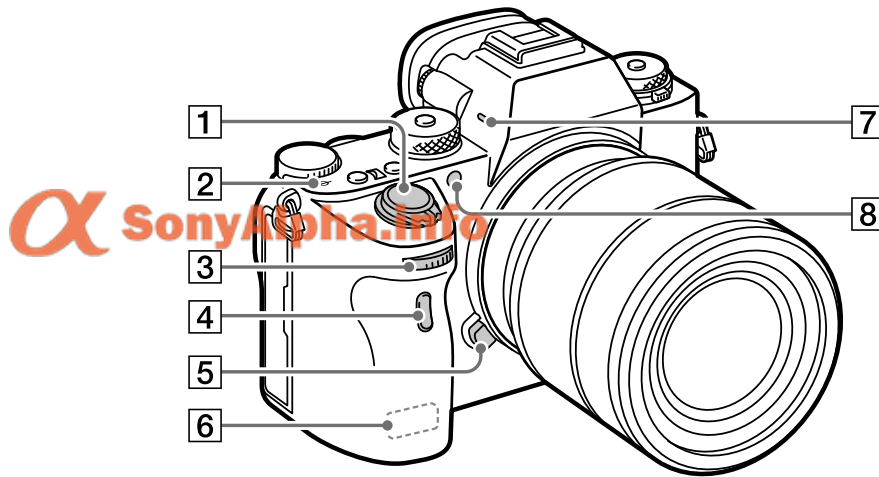
- Instruction Manual (1) (this manual)

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Identifying parts


See the pages in parentheses for details.

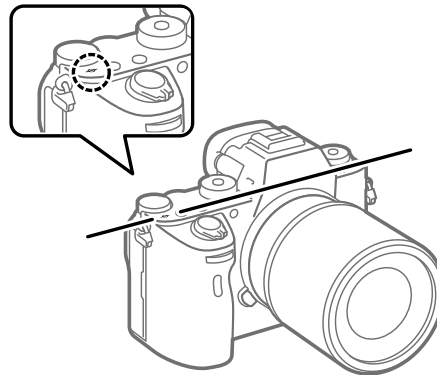
Front side



1 ON/OFF (Power) switch (34)/Shutter button (35)

2  Image sensor position mark

- The image sensor is the sensor that converts light into an electric signal. The  mark shows the location of the image sensor. When you measure the exact distance between the camera and the subject, refer to the position of the horizontal line.

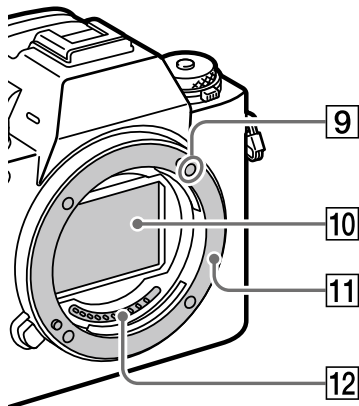


- If the subject is closer than the minimum shooting distance of the lens, the focus cannot be confirmed. Make sure you put enough distance between the subject and the camera.

- 3 Front dial**
You can quickly adjust the settings for each shooting mode.
- 4 Remote sensor**
- 5 Lens release button (33)**
- 6 Wi-Fi antenna (built-in)**
- 7 Microphone***
- 8 AF illuminator (69)/Self-timer lamp**

Alpha SonyAlpha.info
When the lens is removed

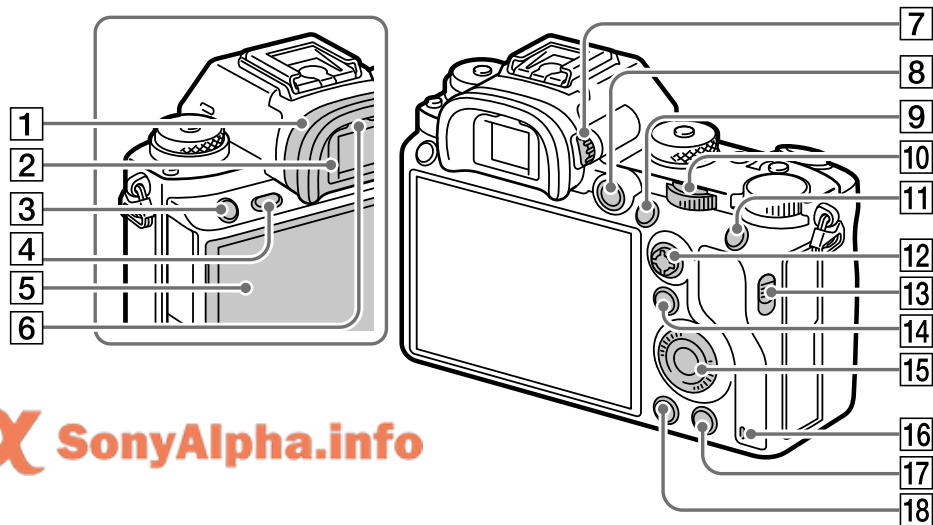
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- 9 Mounting index (32)**
- 10 Image sensor****
- 11 Mount**
- 12 Lens contacts ****

* Do not cover this part during movie recording. Doing so may cause noise or lower the volume.
** Do not directly touch these parts.

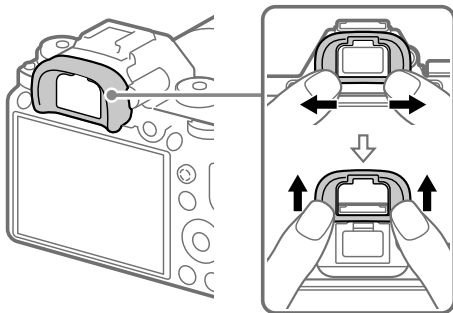
Rear side




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1 Eyepiece cup

To remove the eyepiece cup
Push the grips at the bottom of the eyepiece cup to the left and right and lift up the cup.



Remove the eyepiece cup when attaching an angle viewfinder (sold separately). Also, select MENU →  2 (Camera Settings 2) → [FINDER/MONITOR], and then switch [Viewfinder (Manual)] and [Monitor (Manual)].

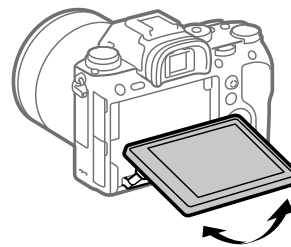
2 Viewfinder

3 C3 button (Custom button 3) (76)

4 MENU button (67)

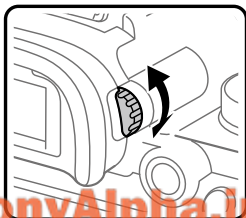
5 Monitor/Touch panel (51)

You can adjust the monitor to an easily viewable angle and shoot from any position.








6 Eye sensor

- 7 Diopter-adjustment dial**
Adjust the diopter-adjustment dial according to your eyesight until the display appears clearly in the viewfinder. If it is hard to operate the diopter-adjustment dial, remove the eyepiece cup before operating the dial.



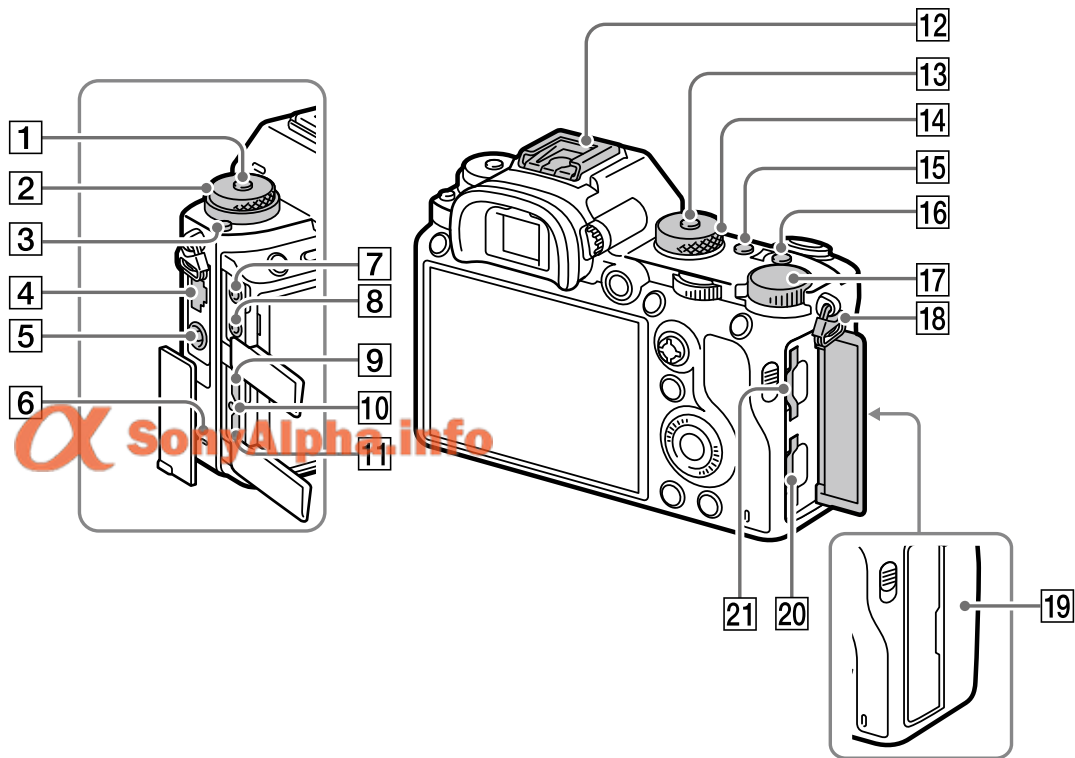
 SonyAlpha.info

- 8 MOVIE (Movie) button (36)**
- 9 For shooting: AF-ON (AF On) button**
For viewing:  (Enlarge) button
- 10 Rear dial**
You can quickly adjust the settings for each shooting mode.
- 11 For shooting: AEL button**
For viewing:  (Image index) button
- 12 Multi-selector (23)**
- 13 Media slot cover switch**
- 14 For shooting: Fn (Function) button (23, 76)**
For viewing:
 (Send to Smartphone) button
You can display the screen for [Send to Smartphone] by pressing this button.
- 15 Control wheel**

- 16 Access lamp**
- 17 For shooting: C4 button (Custom button 4) (76)**
For viewing:  (Delete) button (36)
- 18  (Playback) button (36)**

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Top side/Side view



- 1 Drive mode dial lock release button
- 2 Upper: Drive mode dial
Lower: Focus mode dial (37)
- 3 Focus mode dial lock release button
- 4 LAN terminal
- 5 ⚡ (Flash sync) terminal
- 6 Speaker
- 7 (Microphone) jack
When an external microphone is connected, the built-in microphone turns off automatically. When the external microphone is a plugin-power type, the power of the microphone is supplied by the camera.
- 8 (Headphones) jack
- 9 HDMI micro jack
- 10 Charge lamp
- 11 Multi/Micro USB Terminal* (63)
This terminal supports Micro USB-compatible devices.
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21

12 Multi Interface Shoe*
Some accessories may not go in all the way and protrude backward from the Multi interface shoe. However, when the accessory reaches the front end of the shoe, the connection is completed.

13 Mode dial lock release button

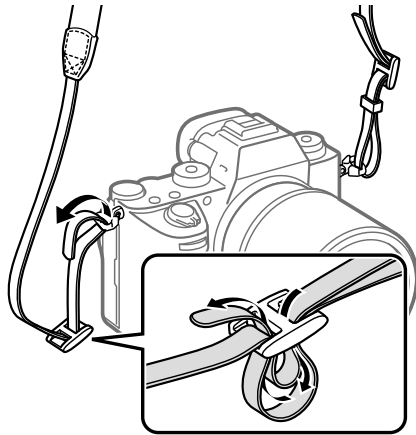
14 Mode dial (36)

15 C2 button (Custom button 2)
(76)

16 C1 button (Custom button 1)
(76)

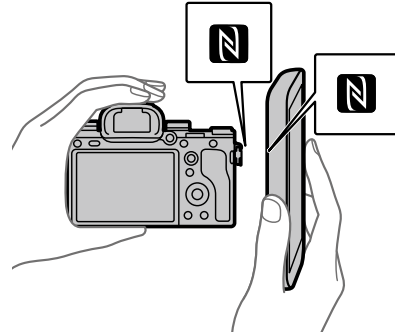
17 Exposure compensation dial

18 Hooks for shoulder strap
Attach both ends of the strap onto the camera.



19 N (N mark) (60)

- This mark indicates the touch point for connecting the camera and an NFC-enabled Smartphone.



- NFC (Near Field Communication) is an international standard of short-range wireless communication technology.

20 SLOT 1 (Memory card slot 1)
(29)

Supports SD cards only
(compatible with UHS-I and UHS-II)

21 SLOT 2 (Memory card slot 2)
(31)

Supports SD cards
(compatible with UHS-I) and
Memory Stick PRO Duo media

GB

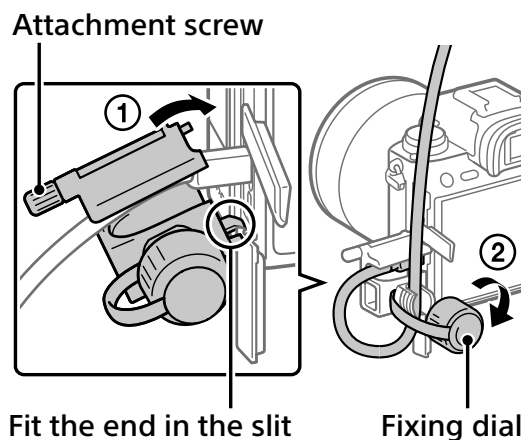
* For details on compatible accessories for the multi interface shoe and the Multi/Micro USB Terminal, visit the Sony website, or consult your Sony dealer or local authorized Sony service facility. Accessories for the Accessory Shoe can also be used. Operations with other manufactures' accessories are not guaranteed.

ni Multi
Interface Shoe

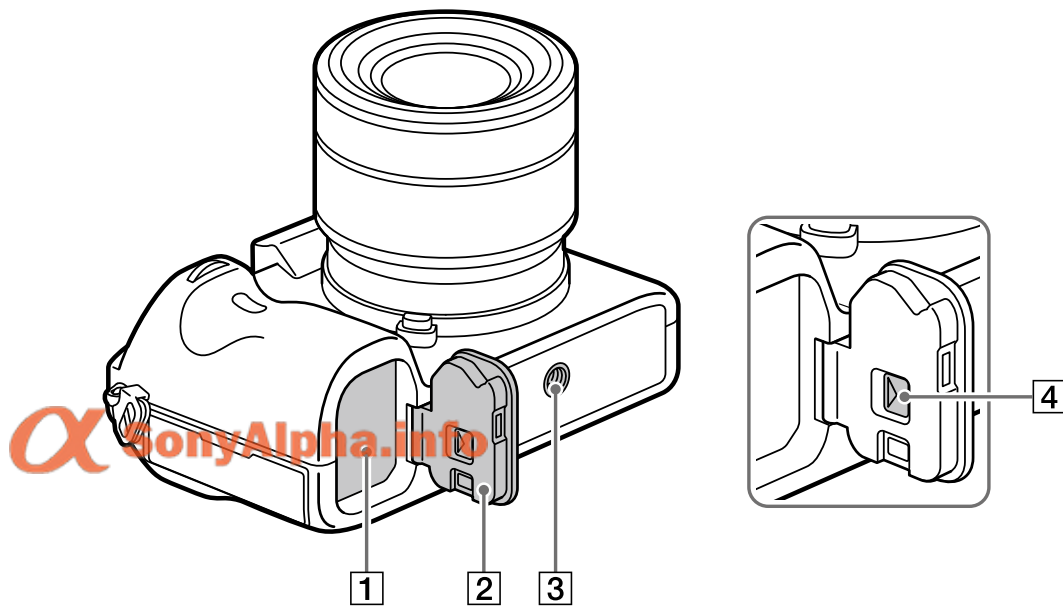
Accessory Shoe Alpha.info

To attach the cable protector

Use the cable protector to prevent the HDMI cable from being disconnected when shooting images connected by the HDMI cable. Open both of the jack covers and insert an HDMI cable into the camera. Swing the HDMI micro jack cover downward and attach the cable protector as illustrated so that the end of the cable protector fits in the slit under the Multi/Micro USB Terminal. Secure the cable protector with the attachment screw. Then secure the HDMI cable with the fixing dial.



Bottom

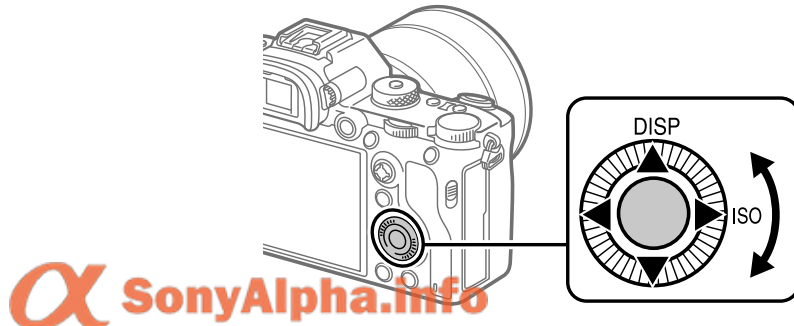


- 1** Battery insertion slot (28)
- 2** Battery cover (28)
- 3** Tripod socket hole
Use a tripod with a screw less than 5.5 mm (7/32 inches) long. Otherwise, you cannot firmly secure the camera, and damage to the camera may occur.
- 4** Battery cover release lever

GB

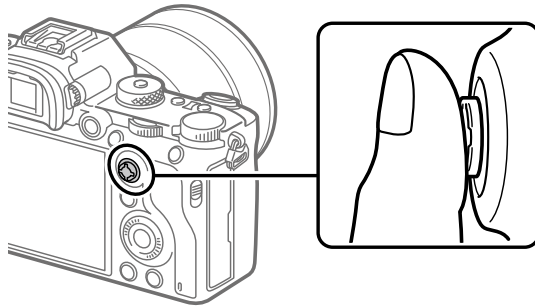
Basic operations

Using the control wheel



- You can select setting items by turning or pressing the top/bottom/left/right side of the control wheel. Your selection is determined when you press the center of the control wheel.
- The DISP (Display Setting) and ISO (ISO) functions are assigned to the top/right side of the control wheel. In addition, you can assign selected functions to the left/right/bottom side and the center of the control wheel, and to the rotation of the control wheel.
- During playback, you can display the next/previous image by pressing the right/left side of the control wheel or by turning the control wheel.

Using the multi-selector



- Put your finger right on top of the multi-selector to manipulate it more precisely.
- When [Focus Area] is set to [Zone], [Flexible Spot], or [Expand Flexible Spot], you can move the focus area by pressing the multi-selector up/down/left/right.
- The [Focus Standard] function is assigned to the center of the multi-selector in the default settings.

GB

Using the Fn (Function) button

You can register frequently used functions to the Fn (function) button and recall them while shooting. Up to 12 frequently used functions can be registered to the Fn (Function) button.

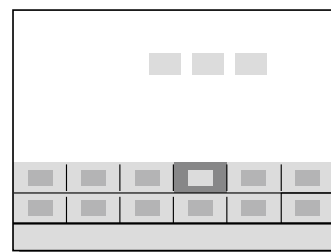
- 1 Press the DISP on the control wheel repeatedly to display a screen mode other than [For viewfinder], and then press the Fn (Function) button.**



- 2 Select the desired function by pressing the top/bottom/left/right side of the control wheel.**

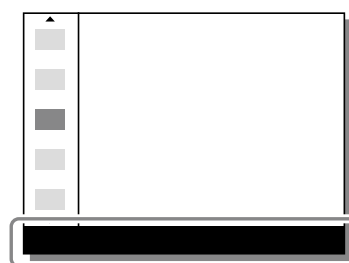
3 Select the desired setting by turning the front dial, and press the center of the control wheel.

- Some functions can be fine-tuned using the rear dial.



■ To adjust settings from the dedicated setting screens

Select the desired function in step 2, then press the center of the control wheel. The dedicated setting screen for the function will appear. Follow the operating guide to adjust settings.



Operation guide

How to use the Quick Navi screen

The Quick Navi screen is a function optimized for shooting with the viewfinder, that lets you control settings directly.

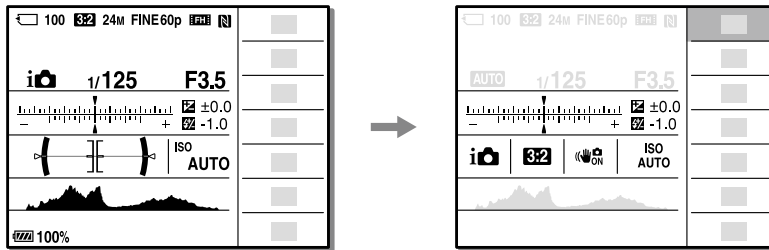
1 Select **MENU** → **2 (Camera Settings 2)** → **[DISP Button]** → **[Monitor]** → place a ✓ mark on **[For viewfinder]** and then select **[Enter]**.

2 Press the **DISP** on the control wheel to set the screen mode to **[For viewfinder]**.

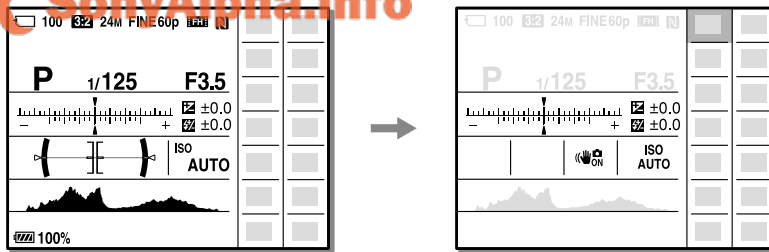
3 Press the Fn button to switch to the Quick Navi screen.

- The displayed contents and their positions in the illustrations are just guidelines, and may differ from the actual displays.

Auto mode



P/A/S/M mode



GB

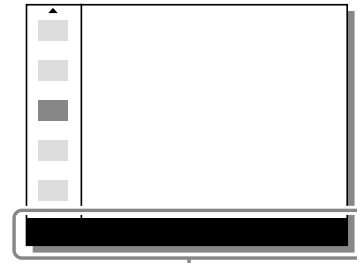
4 Select a function to set by pressing the top/bottom/left/right side of the control wheel.

5 Select the desired setting by turning the front dial.

- Some functions can be fine-tuned using the rear dial.
-

■ To adjust settings from the dedicated setting screens

Select the desired function in step 4, then press the center of the control wheel. The dedicated setting screen for the function will appear. Follow the operating guide to adjust settings.



Operation guide

Note

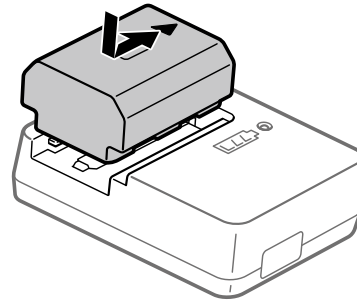
- Items that are gray on the Quick Navi screen are not adjustable.
- When using [Creative Style], some settings can only be controlled from the dedicated screen.


Startup guide

Step 1: Charging the battery pack

1 Insert the battery pack into the battery charger.

- Place the battery pack on the battery charger in the direction of the ▲.
- Slide the battery pack in the direction of the arrow as far as it will go.



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GB

2 Connect the power cord (supplied) to the battery charger, and connect the battery charger to the wall outlet (wall socket).

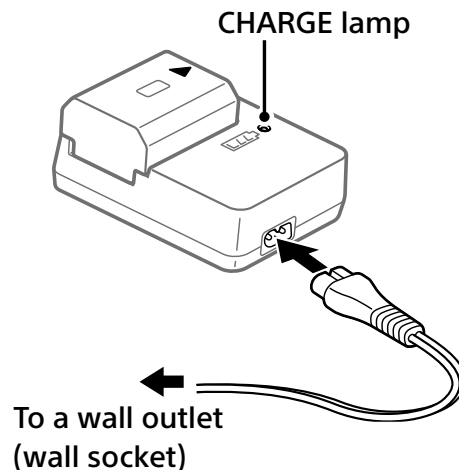
The CHARGE lamp on the battery charger will light up in orange and charging will start.

CHARGE lamp (orange)

Lit: Charging

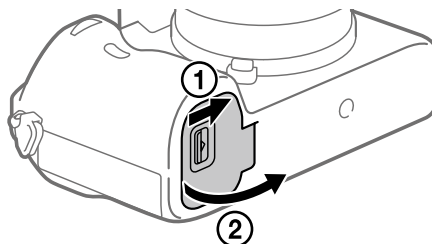
Flashing: Charging error or charging paused temporarily because the camera is not within the proper temperature range

- When charging is finished, the CHARGE lamp and all indicators turn off.
- Charging time (full charge): approximately 150 min. (when charging a fully depleted battery pack at a temperature of 25°C (77°F))
- When you use a completely new battery pack or a battery pack that has not been used for a long time, the CHARGE lamp may flash quickly when the battery is charged for the first time. If this happens, remove the battery pack and then re-insert it to recharge.
- Be sure to use only genuine Sony brand battery packs.

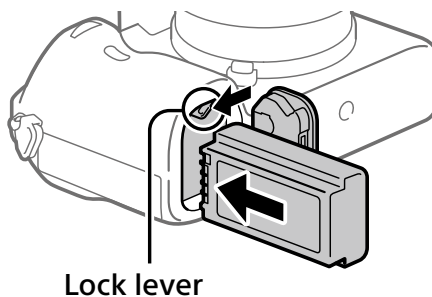


Step 2: Inserting the battery pack into the camera

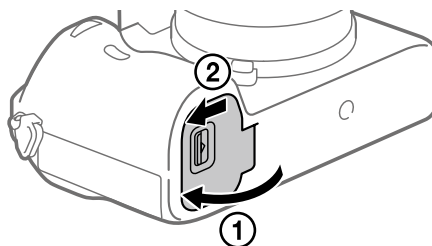
1 Open the battery cover.



2 Insert the battery pack while pressing the lock lever with the tip of the battery until the battery locks into place.



3 Close the cover.



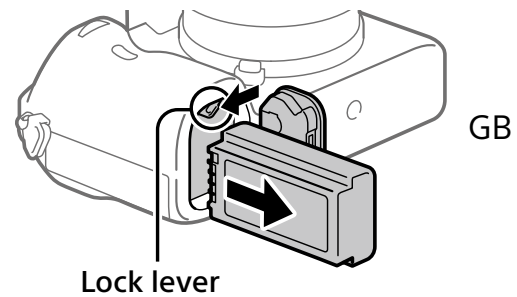
■ To charge the battery pack while it is inserted in the camera

Turn the camera off and connect it to the AC Adaptor (supplied) using the micro USB cable (supplied), then connect the AC Adaptor to the wall outlet (wall socket).

If you turn on the camera, power will be supplied from the wall outlet (wall socket) and you will be able to operate the camera. However, the battery pack will not be charged.

■ To remove the battery pack

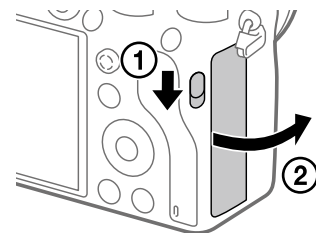
Make sure that the access lamp (page 17) is not lit, and turn off the camera. Then, slide the lock lever and remove the battery pack. Be careful not to drop the battery pack.



Step 3: Inserting a memory card

For details on memory cards that can be used with this camera, refer to page 89.


1 Open the memory card cover.

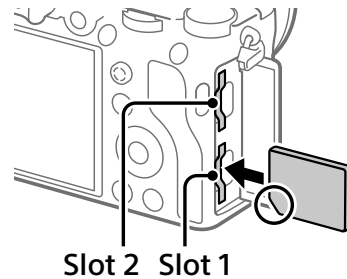


2 Insert the SD card into the slot 1.

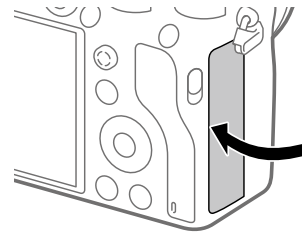
Slot 1 (lower): Supports SD cards (compatible with UHS-I and UHS-II)

Slot 2 (upper): Supports SD cards (compatible with UHS-I) and Memory Stick PRO Duo media

- With the notched corner facing in the direction illustrated, insert the memory card until it clicks into place.
- You can change which memory card slot to use by selecting MENU →  (Setup) → [Select Rec. Media]. The slot 1 is used in the default settings.
- Use the slot 1 when you are only using one SD card.
- Use the slot 2 when you are using Memory Stick media. In this case, set [Select Rec. Media] to [Slot 2].



3 Close the cover.



Hint

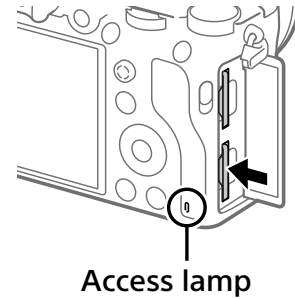
- When you use a memory card with the camera for the first time, it is recommended that you format the card on the camera for more stable performance of the memory card (page 80).

Note

- Do not insert a Memory Stick media into the slot 1. It may cause a malfunction.

■ To remove the memory card

Open the memory card cover.
Make sure that the access lamp
(page 17) is not lit, and then push
in the memory card once to remove
it.



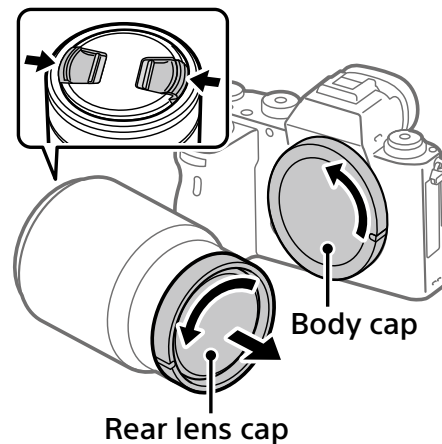
■ To record to memory cards in two slots

The slot 1 is used in the default settings. If you do not intend to change the settings and will only use one memory card, use the slot 1. By inserting another memory card into the slot 2, you can record the same GB images to two memory cards simultaneously or record a different type of image (still images/movies) to each memory card ([Recording Mode] (page 81)).

Step 4: Attaching a lens

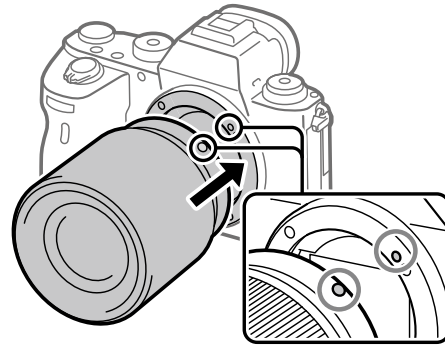
1 Remove the body cap from the camera and the rear lens cap from the rear of the lens.

- When changing the lens, work quickly in a dust-free environment to keep dust or debris from getting inside the camera.

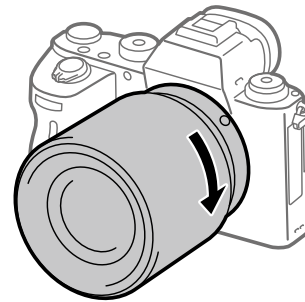


2 Mount the lens by aligning the two white index marks (mounting indexes) on the lens and camera.

- Hold the camera with the lens facing down to prevent dust or debris from entering the camera.



3 While pushing the lens lightly toward the camera, turn the lens slowly in the direction of the arrow until it clicks into the locked position.

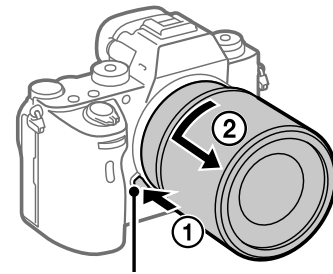


Note

- Be sure to hold the lens straight and do not use force when attaching a lens.
- Do not press the lens release button when attaching a lens.
- The Mount Adaptor (sold separately) is required to use an A-mount lens (sold separately). For details, refer to the operating manual supplied with the Mount Adaptor.
- If you want to shoot full-frame images, use a full-frame size compatible lens.
- When carrying the camera with a lens attached, hold both the camera and the lens firmly.
- Do not hold the part of the lens that is extended for zoom or focus adjustment.

■ To remove the lens

Keep pressing the lens release button and turn the lens in the direction of the arrow until it stops.



Lens release button

■ Compatible lenses

Lenses compatible with this camera are as follows:

Lens		Compatibility with the camera
A-mount lens	Lens compatible with 35 mm full-frame format	✓ (A Mount Adaptor (sold separately) compatible with full-frame format is required)
	APS-C size dedicated lens	✓* (A Mount Adaptor (sold separately) is required)
E-mount lens	Lens compatible with 35 mm full-frame format	✓
	APS-C size dedicated lens	✓*

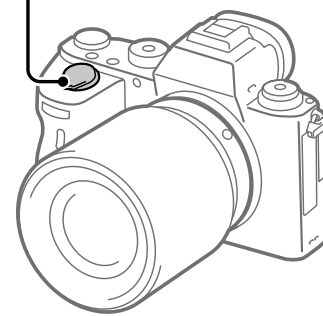
GB

* Images will be recorded in APS-C size. The angle of view will correspond to approximately 1.5 times the focal length indicated on the lens. (For example, the angle of view will correspond to 75 mm when a 50 mm-lens is attached.)

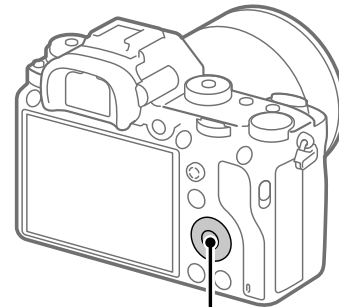
Step 5: Setting the language and the clock

- 1 Set the ON/OFF (Power) switch to "ON" to turn on the camera.

ON/OFF (Power) switch



- 2 Select the desired language and then press the center of the control wheel.



Control wheel

- 3 Make sure that [Enter] is selected on the screen and then press the center.
- 4 Select the desired geographic location and then press the center.
- 5 Select [Date/Time] using the top/bottom of the control wheel or by turning the control wheel, and then press the center.
- 6 Select the desired item by pressing the top/bottom/left/right side of the control wheel, and then press the center.

7 Repeat steps 5 and 6 to set other items, then select [Enter] and press the center.

Hint

- To reset the date and time setting, use MENU (page 80).

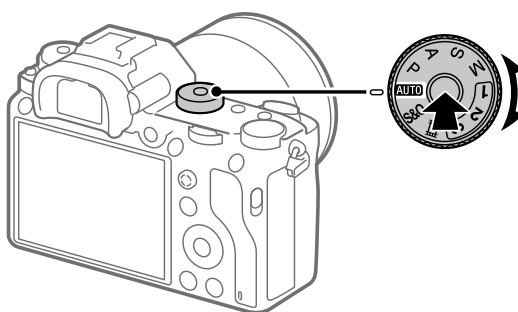
Note

- This camera does not have a function for inserting the date into images. You can insert the date into images and then save and print them using PlayMemories Home (for Windows only).



Step 6: Shooting images in auto mode

GB



1 Press and hold the lock release button in the center of the mode dial, then turn the mode dial to set to **AUTO.**

The shooting mode will be set to **i** (Intelligent Auto).

2 Look through the viewfinder and hold the camera.

3 Set the size of the subject by rotating the zoom ring of the lens when a zoom lens is attached.

4 Press the shutter button halfway down to focus.


- When the image is in focus, an indicator (such as ●) will light up.

5 Press the shutter button all the way down.


■ To shoot movies

Press the MOVIE button to start/stop recording.

■ To play back images

Press the  (Playback) button to play back images. You can select the desired image using the control wheel.

■ To delete displayed image

Press the  (Delete) button while an image is displayed to delete it. Select [Delete] using the control wheel on the confirmation screen, and then press the center of the control wheel to delete the image.

■ To shoot images in various shooting modes

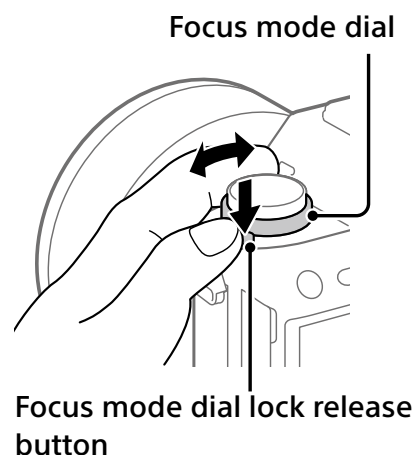
Set the mode dial to the desired mode depending on the subject or the functions you want to use.

Focusing

Focus Mode

Selects the focus method to suit the movement of the subject.

Turn the focus mode dial while pressing the focus mode dial lock release button and select the desired mode.



AF-S (Single-shot AF): The product locks the focus once focusing is complete. Use this when the subject is motionless.

AF-C (Continuous AF): The product continues to focus while the shutter button is pressed and held halfway down. Use this when the subject is in motion. In [Continuous AF] mode, there is no beep when the camera focuses.

DMF (DMF): You can make fine adjustments manually after performing auto focusing, letting you focus on a subject more quickly than when using the manual focus from the beginning. This is convenient in situations such as macro shooting.

MF (Manual Focus): Adjusts the focus manually. If you cannot focus on the intended subject using auto focus, use manual focus.

Focus indicator

- **(lit)**: The subject is in focus and the focus is locked.
- **(flashing)**: The subject is not in focus.
- ⦿ **(lit)**: The subject is in focus. The focus will be adjusted continuously according to the movements of the subject.
- ⦿ **(lit)**: Focusing is in progress.

Subjects on which it is difficult to focus using auto focus

- Dark and distant subjects
- Subjects with poor contrast
- Subjects seen through glass
- Fast-moving subjects
- Reflective light or shiny surfaces
- Flashing light
- Back-lit subjects
- Continuously repetitive patterns, such as the facades of buildings
- Subjects in the focusing area with different focal distances

Note

- When [Continuous AF] is set, the angle of view may change little by little while focusing. This does not affect the actual recorded images.
- Even if the focus mode dial is set to AF-S or DMF, the focus mode will switch to [Continuous AF] when shooting movies or when the mode dial is set to S&Q.

Hint


- In [Continuous AF] mode, you can lock the focus by pressing and holding the button that has been assigned the [Focus Hold] function (page 76).

Auto focus


Focus Area


Selects the focusing area. Use this function when it is difficult to focus properly in the auto focus mode.


MENU →  **(Camera Settings 1)** → **[Focus Area]** → **desired setting.**


 **Wide:** Focuses on a subject covering the whole range of the screen automatically. When you press the shutter button halfway down in the still image shooting mode, a green frame is displayed around the area that is in focus.






GB

 **Zone:** Select a zone on the monitor on which to focus, and the product will automatically select a focus area.

 **Center:** Focuses automatically on a subject in the center of the image. Use together with the focus-lock function to create the composition you want.

 **Flexible Spot:** Allows you to move the focusing frame to a desired point on the screen and focus on an extremely small subject in a narrow area.

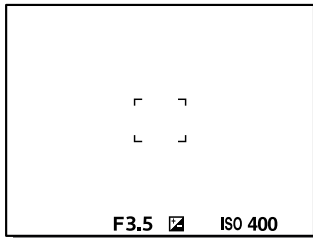
 **Expand Flexible Spot:** If the product cannot focus on a single selected point, it uses focus points around the flexible spot as a secondary priority area for focusing.

     **Lock-on AF:** When the shutter button is pressed and held halfway down, the product tracks the subject within the selected autofocus area. This setting is available only when the [Focus Mode] is set to [Continuous AF]. Point the cursor at [Lock-on AF] on the [Focus Area] setting screen, and then adjust the desired area to start tracking using the left/right sides of the control wheel. You can also move the tracking start area to the desired point by designating the area as a zone, flexible spot or expand flexible spot.

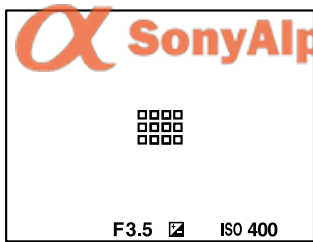
Examples of the focusing frame display

The focusing frame differs as follows depending on the shooting mode.

When focusing with the contrast AF or phase detection AF

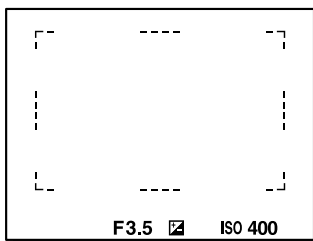


When focusing with the phase detection AF



- When you attach an A-mount lens with a Mount Adaptor (LA-EA1 or LA-EA3) (sold separately) and [AF System] is set to [Phase Detection AF], the focusing frame for "When focusing with the phase detection AF" may be displayed.

When focus is achieved automatically based on the whole range of the monitor



- When you use a zoom function other than the optical zoom, the [Focus Area] setting is disabled and the focusing frame is shown by the dotted line. The AF operates with priority on and around the center area.

■ To move the focus area


- You can move the focus area in [Flexible Spot], [Expand Flexible Spot], or [Zone] by operating the multi-selector. If you assign [Focus Standard] to the center of the multi-selector beforehand, you can move the focusing frame back to the center of the monitor by pressing the center of the multi-selector.
- You can move the focusing frame quickly by touching and dragging it on the monitor. Set [Touch Operation] to [On] beforehand.

Hint

- In the default settings, [Focus Area] is assigned to the C2 button.

Note



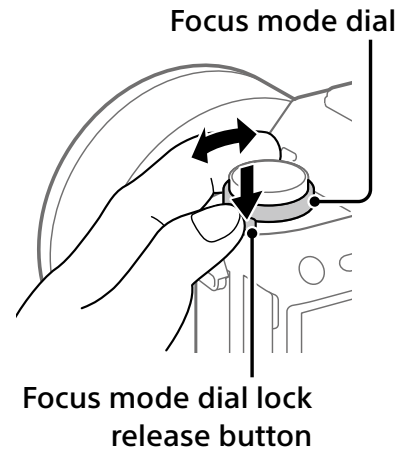
- [Focus Area] is locked to [Wide] in the following situations:
 - [Intelligent Auto]
- The focus area may not light up during continuous shooting or when the shutter button is pressed all the way down at once.
- When the mode dial is set to  (Movie) or **S&Q**, or during movie shooting, [Lock-on AF] cannot be selected as the [Focus Area].

GB

Manual Focus

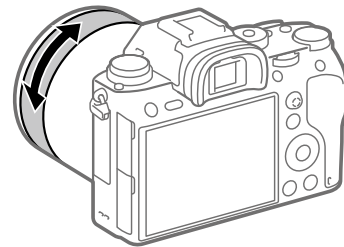
When it is difficult to focus properly in the autofocus mode, you can adjust the focus manually.

- 1 Turn the focus mode dial while pressing the focus mode dial lock release button and select MF.**



- 2 Rotate the focusing ring to achieve sharp focus.**

- When you rotate the focusing ring, the focus distance is displayed on the screen. The focus distance is not displayed when the Mount Adaptor (sold separately) is attached.



- 3 Press the shutter button fully down to shoot an image.**

Note

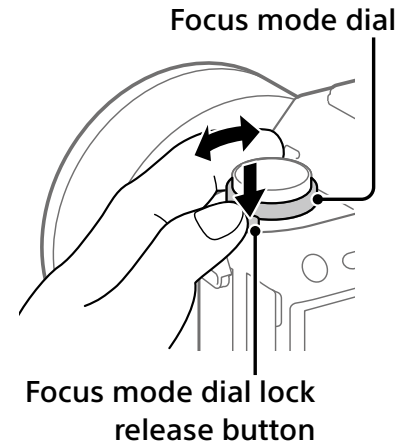
- When you use the viewfinder, adjust the diopter level to obtain the correct focus on the viewfinder (page 17).

Direct manual focus (DMF)

You can make fine adjustments manually after performing auto focusing, letting you focus on a subject more quickly than when using the manual focus from the beginning. This is convenient in situations such as macro shooting.

- 1 Turn the focus mode dial while pressing the focus mode dial lock release button and select DMF.**

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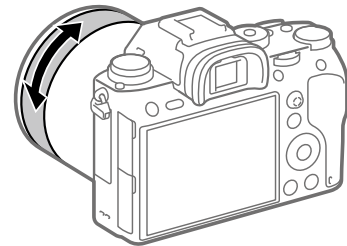


GB

- 2 Press the shutter button halfway down to focus automatically.**

- 3 Keep the shutter button pressed halfway down, and then rotate the focusing ring to achieve a sharper focus.**

- When you rotate the focusing ring, the focus distance is displayed on the screen. The focus distance is not displayed when the Mount Adaptor (sold separately) is attached.





- 4 Press the shutter button fully down to shoot an image.**

Shutter setting

Shutter Type

You can set whether to shoot with a mechanical shutter or an electronic shutter.


MENU →  2 (Camera Settings 2) → [ Shutter Type] → **desired setting.**

Auto: The shutter type is automatically switched based on the shooting conditions and shutter speed.





Mechanical Shut.: Shoot with the mechanical shutter only.

Electronic Shut.: Shoot with the electronic shutter only.

Hint

- In the following situations, set the [ Shutter Type] to [Auto] or [Electronic Shut.].
 - When shooting with a high-speed shutter in a bright environment such as outside in bright sunlight, the beach, or snowy mountains.
 - When you want to increase the speed of continuous shooting.

Note

- In rare cases, the shutter sound may be produced when the power is turned off even if the [ Shutter Type] is set to [Electronic Shut.]. However, this is not a malfunction.
- In the following situations, the mechanical shutter will be activated even if the [ Shutter Type] is set to [Electronic Shut.].
 - When capturing a basic white color in [Custom Setup] for [White Balance]
 - [Face Registration]
- The following functions are unavailable when the [ Shutter Type] is set to [Electronic Shut.].
 - Flash shooting
 -  Long Exposure NR
 - Bulb shooting




Using the electronic shutter

Using the electronic shutter lets you perform various kinds of shooting that are difficult to achieve using the mechanical shutter, such as shooting without sounds or shaking, shooting with a super-fast shutter, and blackout-free shooting*.

* During blackout-free shooting, the screen does not black out or drop frames and you can keep looking at the subject through the viewfinder or monitor while shooting images.

Shutter types and camera performance

The camera's shutter speed range, shutter sound, occurrence of blackout, and availability of the flash for each setting are as follows:

	Shutter Type		
	 Auto	 Mechanical Shut.	 Electronic Shut.
Shutter speed	Single shooting: BULB – 1/32000 ^{*1*2} Continuous shooting: 1/8 – 1/32000 ^{*1*2}	Single shooting: BULB – 1/8000 Continuous shooting: 30 – 1/8000	Single shooting: 30 – 1/32000 ^{*1*2} Continuous shooting: 1/8 – 1/32000 ^{*1*2}
Shutter sound	Single shooting: Mechanical shutter sound Continuous shooting: Electronic shutter sound	Mechanical shutter sound	Electronic shutter sound
Blackout	Single shooting: Occurs Continuous shooting: Blackout-free ^{*3}	Occurs	Blackout-free ^{*3}
Flash	Available	Available	Unavailable

*1 The maximum shutter speed is 1/16000 second when the shooting mode is not set to S (Shutter Priority) or M (Manual Exposure), or during bracket shooting with a setting other than [WB bracket] or [DRO Bracket].




*2 The next value after 1/16000 second is 1/32000 second when the shooting mode is set to S (Shutter Priority) or M (Manual Exposure).

*3 When [Shoot. Start Disp.] is set to [On], blackout occurs only when the first image is shot (page 48).

GB






■ Advanced shooting using the electronic shutter: Shooting without shutter sound

You can use the electronic shutter to shoot without shutter sound.


- ① **MENU** → 2 (Camera Settings 2) →  Shutter Type] → [Electronic Shut.].
 - Select [Electronic Shut.] or [Auto] for continuous shooting.
- ② **MENU** → 2 (Camera Settings 2) → [Audio signals] → [Off] or [On: other than e-shut].

■ Advanced shooting using the electronic shutter: Blackout-free continuous shooting

You can use the electronic shutter to perform continuous shooting with focus and exposure tracking, without the screen blacking out.

- ① **MENU** → 2 (Camera Settings 2) →  Shutter Type] → [Auto] or [Electronic Shut.].
- ② Turn the mode dial and select **P (Program Auto)**, **A (Aperture Priority)**, **S (Shutter Priority)**, or **M (Manual Exposure)**, then set the shutter speed and aperture value. (For example: shutter speed of 1/250 second and aperture value of F2.8)
 - The product will not adjust the exposure in manual exposure mode when [ISO] is set to other than [ISO AUTO].
- ③ Turn the drive mode dial and select  H (Continuous Shooting: Hi),  M (Continuous Shooting: Mid), or  L (Continuous Shooting: Lo).
- ④ Turn the focus mode dial and select **AF-C (Continuous AF)**, then start shooting images.

Hint

- If you want to display the timing of shooting on the screen during blackout-free shooting, adjust the setting using MENU →  2 (Camera Settings 2) → [Shoot. Timing Disp.].
- To take advantage of the performance of the camera, we recommend that you use a UHS-II memory card. When using a UHS-II memory card, insert it into the memory card slot 1.

Note

- When shooting without the shutter sound, do so on your own responsibility, with sufficient consideration to the privacy and portrait rights of the subject.
- Even if you set the camera to shoot without the shutter sound, it will not be completely silent.
- Even if you set the camera to shoot without the shutter sound, the aperture and focus will make sounds.
- If you set [Audio signals] to [Off], the camera will not beep when the subject comes into focus or when the self-timer is in operation.
- During blackout-free shooting, the slower the shutter speed, the lower the refresh rate of the screen. If you want the screen display to be smooth in order to track the subject, set a shutter speed faster than 1/125 second.
- The electronic shutter operates differently when a Mount Adaptor is attached to the camera.

Displaying the release timing (Shoot. Timing Disp.)

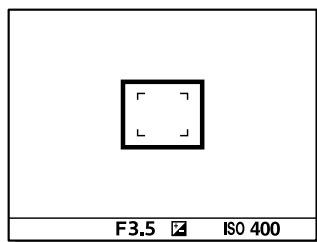
Sets the method for displaying the shutter release timing on the screen during blackout-free shooting.

MENU →  2 (Camera Settings 2) → [Shoot. Timing Disp.] → **desired setting.**

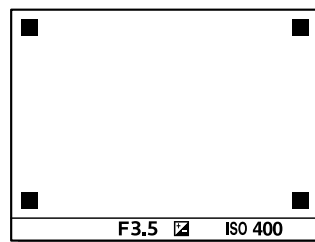
On: Type 1/On: Type 2: Displays a frame around the focusing frame.

On: Type 3/On: Type 4: Displays  in the four corners of the screen.

Off: Does not display the shutter release timing during blackout-free shooting.



[On: Type 1]/[On: Type 2] (Example)



[On: Type 3]/[On: Type 4]

Shoot. Start Disp.

Sets whether to let the screen black out when shooting the first image during blackout-free shooting.

MENU →  2 (Camera Settings 2) → [Shoot. Start Disp.] → **desired setting.**

On: The screen blacks out when shooting the first image during blackout-free shooting.

Off: The screen does not black out when shooting the first image during blackout-free shooting.




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Continuous shooting


Shoots images continuously while you press and hold down the shutter button.

Turn the drive mode dial and select the desired mode.

- Turn the drive mode dial while pressing the drive mode dial lock release button.

 **Continuous Shooting: Hi** /  **Continuous Shooting: Mid** /
 **Continuous Shooting: Lo**




	 Shutter Type	
	Mechanical Shut.	Auto/Electronic Shut.
Continuous Shooting: Hi	5 images per second at maximum* ¹	20 images per second at maximum * ¹ * ² * ³
Continuous Shooting: Mid	5 images per second at maximum* ¹	10 images per second at maximum* ¹
Continuous Shooting: Lo	2.5 images per second at maximum	5 images per second at maximum* ¹

GB

- *¹ When the F-value is greater than F11, the focus is locked to the setting in the first shot.
- *² When the Focus Mode is set to AF-C (Continuous AF), the speed of continuous shooting varies depending on the attached lens. For details, check the support page on compatible lenses.
- *³ During uncompressed RAW shooting, 12 images are shot per second at maximum.

Hint

- To continuously adjust the focus and exposure during continuous shooting, set as follows:
 - [Focus Mode]: [Continuous AF]
 - [ AEL w/ shutter]: [Off] or [Auto]

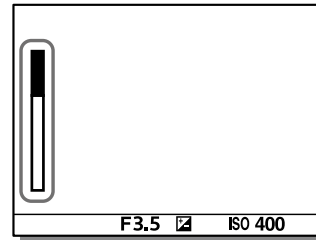
Note

- Continuous shooting is unavailable in the following situations:
 - [Picture Effect] is set to [Rich-tone Mono.].
 - [DRO/Auto HDR] is set to [Auto HDR].

■ Displaying continuous shooting remaining time indicator (Cont. Shoot. Length)

Sets whether to display an indicator of the remaining time for which continuous shooting can be performed at the same shooting speed.

MENU →  **2 (Camera Settings 2)** → **[Cont. Shoot. Length]** → **desired setting.**



Always Display: Always displays the indicator when the drive mode is set to [Cont. Shooting].

Shoot.-Only Display: Displays the indicator only while continuous shooting is performed.

Not Displayed: Does not display the indicator.

Hint

- When the internal camera memory for buffering is full, "SLOW" will be displayed and the continuous shooting speed will decrease.

Using touch function

Touch Operation

Sets whether to activate or not the touch operation of the monitor.

MENU →  (Setup) → [Touch Operation] → **desired setting.**

On: Activates the touch operation.


Off: Deactivates the touch operation.



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Touch Focus

You can select a subject on which to focus using touch operations in the still image and movie recording modes.

MENU →  (Setup) → [Touch Operation] → [On].



■ Specifying the position where you want to focus in the still image mode

You can focus on the desired position by touching the monitor.

- ① **Select a [Focus Area] other than [Flexible Spot] or [Expand Flexible Spot].**
- ② **MENU** →  1 (Camera Settings 1) → [Center Lock-on AF] → [Off].
- ③ **Touch the monitor.**
 - Touch the subject to focus.
 - When the shutter button is pressed halfway down, the camera focuses on the focusing frame. Press the shutter button all the way down to shoot images.
 - To cancel focusing with touch operations, touch  or press the center of the control wheel.

■ Specifying the position where you want to focus in the movie recording mode (spot focus)

The camera will focus on the touched subject.

- ① Select a [Focus Area] other than [Flexible Spot] or [Expand Flexible Spot].
- ② MENU →  1 (Camera Settings 1) → [Center Lock-on AF] → [Off].
- ③ Touch the subject on which you want to focus before or during recording.
 - When you touch the subject, the focus mode temporarily switches to manual focus and the focus can be adjusted using the focus ring.
 - To cancel spot focus, touch  or press the center of the control wheel.

Hint

- In addition to the touch focus function, touch operations such as the following are also available.
 - When [Focus Area] is set to [Flexible Spot] or [Expand Flexible Spot], the focusing frame can be moved using touch operations.
 - When the [Focus Mode] is set to [Manual Focus], the focus magnifier can be used by double-tapping the monitor.



Note

- The touch focus function is not available in the following situations:
 - When using the viewfinder
 - When [Focus Mode] is set to [Manual Focus].
 - When using the digital zoom
 - When using the LA-EA2 or LA-EA4
 - When using the LA-EA1 or LA-EA3, and the shooting mode is set to [Movie]

Selecting a still image size/image quality

Image Size

The larger the image size, the more detail will be reproduced when the image is printed on large-format paper. The smaller the image size, the more images can be recorded.

MENU →  1 (Camera Settings 1) → [ Image Size] → desired setting.




When [Aspect Ratio] is set to 3:2		When [Aspect Ratio] is set to 16:9	
L: 24M	6000×4000 pixels	L: 20M	6000×3376 pixels
M: 10M	3936×2624 pixels	M: 8.7M	3936×2216 pixels
S: 6.0M	3008×2000 pixels	S: 5.1M	3008×1688 pixels

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When [APS-C/Super 35mm] is set to [On]

When [Aspect Ratio] is set to 3:2		When [Aspect Ratio] is set to 16:9	
L: 10M	3936×2624 pixels	L: 8.7M	3936×2216 pixels
M: 6.0M	3008×2000 pixels	M: 5.1M	3008×1688 pixels
S: 2.6M	1968×1312 pixels	S: 2.2M	1968×1112 pixels

Note

- When [ Quality] is set to [RAW] or [RAW & JPEG], the image size for RAW images corresponds to "L."

Quality

MENU →  1 (Camera Settings 1) → [ Quality] → **desired setting.**

RAW: File format: RAW

Digital processing is not performed on this file format. Select this format to process images on a computer for professional purposes.

- The image size is fixed to the maximum size. The image size is not displayed on the screen.

RAW & JPEG: File format: RAW + JPEG

A RAW image and a JPEG image are created at the same time. This is suitable when you need two image files, a JPEG for viewing, and a RAW for editing. The JPEG image quality is set to [Fine].

Extra fine: File format: JPEG

The image is compressed in the JPEG format and recorded using a higher quality than with [Fine].

Fine: File format: JPEG

The image is compressed in the JPEG format when recorded.

Standard: File format: JPEG



The image is compressed in the JPEG format when recorded. Since the compression rate of [Standard] is higher than that of [Fine], the file size of [Standard] is smaller than that of [Fine]. This will allow more files to be recorded on one memory card, but the image quality will be lower.

Shooting movies

Changing settings for movie recording

File Format




Selects the movie file format.

MENU →  **2 (Camera Settings 2)** →  **File Format** → **desired setting.**




XAVC S 4K: Records 4K movies in the XAVC S format. This format supports GB a high bit rate.

Audio: LPCM

- One of the following kinds of memory cards is needed to record movies with  [File Format] set to [XAVC S 4K]:
 - Memory Stick PRO-HG Duo
 - Movies cannot be recorded at 100 Mbps or more.
 - SDHC/SDXC/microSDHC/microSDXC memory card (SD Speed Class 10, or UHS Speed Class U1 or faster)
 - UHS Speed Class U3 is required to record at 100 Mbps or more.
- [HDMI Info. Display] temporarily switches to [Off] when  [File Format] is set to [XAVC S 4K].
- Images will not appear on the monitor of the camera if you record movies while the camera is connected to an HDMI device with  [File Format] set to [XAVC S 4K].

XAVC S HD: Records HD movies in the XAVC S format. This format supports a high bit rate.

Audio: LPCM

- One of the following kinds of memory cards is needed to record movies with  [File Format] set to [XAVC S HD]:
 - Memory Stick PRO-HG Duo
 - Movies cannot be recorded at 100 Mbps or more.
 - SDHC/SDXC/microSDHC/microSDXC memory card (SD Speed Class 10, or UHS Speed Class U1 or faster)
 - UHS Speed Class U3 is required to record at 100 Mbps or more.

AVCHD: Records HD movies in the AVCHD format. This file format is suitable for high-definition TV.

Audio: Dolby Digital

MP4: Records MP4 (AVC) movies. This format is suitable for playback on smartphones or tablets, web uploads, email attachments, etc.

Audio: AAC

Hint

- You can save images to a computer or copy them to a disc compatible with your playback device using the PlayMemories Home software.

Note

- When [File Format] is set to [AVCHD], the file size of movies is limited to approx. 2 GB. If the movie file size reaches approx. 2 GB during recording, a new movie file will be created automatically.
- When [File Format] is set to [MP4], the file size of movies is limited to approx. 4 GB. If the movie file size reaches approx. 4 GB during recording, recording will stop automatically.

Record Setting

Selects the image size, frame rate, and image quality for movie recording. The higher the bit-rate, the higher the image quality.

MENU → **2 (Camera Settings 2)** → **Record Setting** → **desired setting.**

When [File Format] is set to [XAVC S 4K]

Records high-definition movies by converting them into the MP4 file format using the MPEG-4 AVC/H.264 codec.

Frame rate	Bit-rate	
	60 Mbps	100 Mbps
30p/25p	30p 60M/25p 60M	30p 100M/25p 100M
24p	24p 60M*	24p 100M*

* Only when [NTSC/PAL Selector] is set to NTSC

When [File Format] is set to [XAVC S HD]

Records high-definition movies by converting them into the MP4 file format using the MPEG-4 AVC/H.264 codec.

Frame rate	Bit-rate		
	50 Mbps	60 Mbps	100 Mbps
120p/100p	—	120p 60M/ 100p 60M	120p 100M/ 100p 100M
60p/50p	60p 50M/ 50p 50M	—	—
30p/25p	30p 50M/ 25p 50M	—	—
24p	24p 50M*	—	—

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* Only when [NTSC/PAL Selector] is set to NTSC

When [File Format] is set to [AVCHD]

60i/50i: Movies are recorded at approximately 60 fields/sec (for 1080 60i-compatible devices) or 50 fields/sec (for 1080 50i-compatible devices) in interlaced mode with Dolby Digital audio and in the AVCHD format.

24p/25p: Movies are recorded at approximately 24 frames/sec (for 1080 60i-compatible devices) or 25 frames/sec (for 1080 50i-compatible devices) in progressive mode with Dolby Digital audio and in the AVCHD format.

60p/50p: Movies are recorded at approximately 60 frames/sec (for 1080 60i-compatible devices) or 50 frames/sec (for 1080 50i-compatible devices) in progressive mode with Dolby Digital audio and in the AVCHD format.

Frame rate	Bit-rate		
	17 Mbps	24 Mbps	28 Mbps
60i/50i	60i 17M (FH)/ 50i 17M (FH)	60i 24M (FX)/ 50i 24M (FX)	—
60p/50p	—	—	60p 28M (PS)/ 50p 28M (PS)
24p/25p	24p 17M (FH)/ 25p 17M (FH)	24p 24M (FX)/ 25p 24M (FX)	—

When [File Format] is set to [MP4]

Movies are recorded in the MPEG-4 format, at approximately 60 frames/sec (for 1080 60i-compatible devices), approximately 50 frames/sec (for 1080 50i-compatible devices), approximately 30 frames/sec (for 1080 60i-compatible devices), or approximately 25 frames/sec (for 1080 50i-compatible devices), in progressive mode with AAC audio and in the MP4 format.

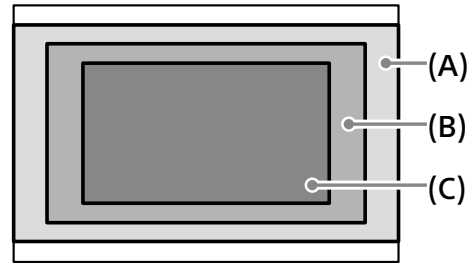
Frame rate	Bit-rate		
	6 Mbps	16 Mbps	28 Mbps
60p/50p	—	—	1920×1080 60p 28M/50p 28M
30p/25p	1280×720 30p 6M/25p 6M	1920×1080 30p 16M/25p 16M	—

Note

- Movies recorded with [60p 28M (PS)]/[50p 28M (PS)]/[60i 24M (FX)]/[50i 24M (FX)]/[24p 24M (FX)]/[25p 24M (FX)] as the [Record Setting] are converted by PlayMemories Home in order to create an AVCHD recording disc. You cannot create a disc in the original image quality. The conversion can take a long time. If you want to keep the original image quality, store your movies on a Blu-ray Disc.
- To play back 60p/50p/24p/25p movies on a TV, the TV must be compatible with the 60p/50p/24p/25p format. If the TV is not compatible with the 60p/50p/24p/25p format, 60p/50p/24p/25p movies will be output as 60i/50i movies.
- [120p]/[100p] cannot be selected for the following settings.
 - [Intelligent Auto]
- In full-frame shooting, the angle of view will be narrower under the following conditions:
 - When [File Format] is set to [XAVC S 4K] and [Record Setting] is set to [30p]

■ Angle of view during movie recording

The angle of view during movie recording depends on the settings for [File Format], [Record Setting], etc.



(A) Angle of view equivalent to full-frame

- When [File Format] is set to [XAVC S 4K] and [Record Setting] is set to [24p 60M]/[24p 100M]/[25p 60M]/[25p 100M]
- When [File Format] is set to [XAVC S HD], [AVCHD] or [MP4]
- When the mode dial is set to S&Q

(B) Angle of view equivalent to approx. 1.2 times the focal length indicated on the lens

- When [File Format] is set to [XAVC S 4K] and [Record Setting] is set to [30p 60M] or [30p 100M]

(C) Angle of view equivalent to approx. 1.5 times the focal length indicated on the lens

- When [APS-C/Super 35mm] is set to [On]
- When [APS-C/Super 35mm] is set to [Auto] and an APS-C size dedicated lens is attached

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Using network functions

Using the Wi-Fi/One-touch (NFC)/Bluetooth/wired LAN functions

You can perform the following operations using the camera's Wi-Fi, NFC One-touch, and Bluetooth functions.

- Saving images to a computer
- Transferring images from the camera to a smartphone
- Using a smartphone as a remote control for the camera
- Viewing still images on a TV
- Recording location information from a smartphone to images

For details, refer to the "Help Guide" (page 2).

Installing PlayMemories Mobile

PlayMemories Mobile is required to connect the camera and a smartphone. If PlayMemories Mobile is already installed on your smartphone, be sure to update it to the latest version.

For details on PlayMemories Mobile, refer to the support page (<http://www.sony.net/pmm/>).



Note

- To use the camera's NFC One-touch function, an NFC-enabled Android smartphone or tablet is required.
- The Wi-Fi functions introduced in this manual are not guaranteed to operate on all smartphones or tablets.
- The Wi-Fi functions of this camera are not available when connected to a public wireless LAN.
- Depending on future version upgrades, the operational procedures or screen displays are subject to change without notice.

Recording location information to captured images



By using PlayMemories Mobile, you can obtain location information from a connected smartphone (via Bluetooth communication) and record it to captured images.

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Transferring images to the FTP server

You can use the camera's Wi-Fi function or wired LAN to transfer images to the FTP server.

For details, refer to the "FTP Help Guide."


http://rd1.sony.net/help/di/ftp/h_zz/



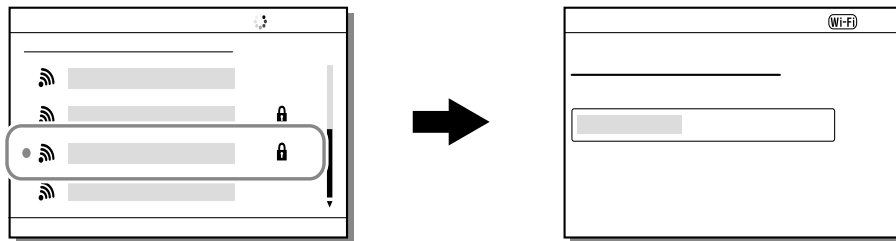
- Basic knowledge of FTP servers is required.

Connecting the camera to a wireless access point

Connect the camera to your wireless access point. Before starting the procedure, make sure you have the SSID (name of the access point) and password of your wireless access point with you.

1 MENU →  (Network) → [Wi-Fi Settings] → [Access Point Set.].

2 Use the control wheel to select the access point to which you want to connect. Press the center of the control wheel and enter the password for the wireless access point, then select [OK].



Note

- If a connection is not established, see the wireless access point operating instructions or contact the administrator of the access point.
To save images to a computer, install PlayMemories Home on your computer.

PlayMemories Home
<http://www.sony.net/pm/>

Using a computer

Connecting the camera to a computer

Connecting to a computer

1 Insert a fully charged battery pack into the camera.

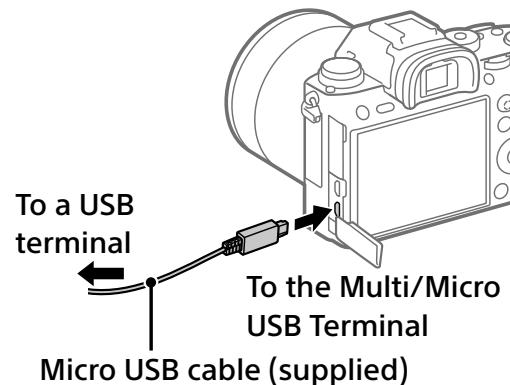
2 Turn on the camera and the computer.

3 Check that [USB Connection] under  (Setup) is set to [Mass Storage].

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4 Connect the camera to the computer using the micro USB cable (supplied).

- When you connect the camera to the computer for the first time, the procedure for recognizing the camera may start automatically on the computer. Wait until the procedure is finished.
- If you connect the product to your computer using the micro USB cable when [USB Power Supply] is set to [On], power is supplied from your computer. (Default setting: [On])



Disconnecting the camera from the computer

Perform steps 1 and 2 below before performing the following operations:

- Disconnecting the micro USB cable.
- Removing a memory card.
- Turning off the product.

1 Click  (Safely Remove Hardware and Eject Media) in the taskbar.

2 Click the displayed message.



Note

- On Mac computers, drag and drop the memory card icon or the drive icon into the "Trash" icon. The camera will be disconnected from the computer.
- On Windows 7/Windows 8 computers, the disconnection icon may not appear. In that case, you can skip the steps above.
- Do not remove the micro USB cable from the camera while the access lamp is lit. The data may be damaged.

Introduction to computer software

We offer the following computer software to enhance your enjoyment of photos/movies. Access one of the following URLs using your Internet browser and then download the software by following the onscreen instructions.

If one of these software is already installed on your computer, update it to the latest version before use.

Windows:

<http://www.sony.co.jp/imsoft/Win/>



<http://www.sony.co.jp/imsoft/Mac/>

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You can check the recommended operating environment for the software from the following URL:

<http://www.sony.net/pcenv/>

PlayMemories Home

PlayMemories Home allows you to import still images and movies to your computer and view or use them.

You need to install PlayMemories Home to import XAVC S movies or AVCHD movies to your computer.

You can access the download website directly from the following URL:

<http://www.sony.net/pm/>


- When you connect the camera to your computer, new functions may be added to PlayMemories Home. Connecting the camera to your computer is therefore recommended even if PlayMemories Home has already been installed on the computer.

Image Data Converter

You can develop and edit RAW images using various adjustment functions like tone curve and sharpness.

Remote Camera Control

With Remote Camera Control, you can change the camera settings or release the shutter from a computer connected via a USB cable.

To use Remote Camera Control, first select MENU →  (Setup) → [USB Connection] → [PC Remote], then connect the camera to a computer via a USB cable.



MENU items/List of icons

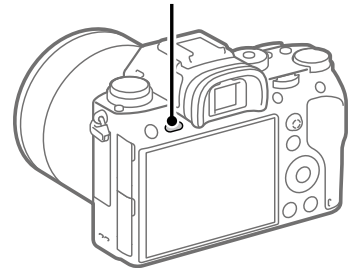
Using MENU items

You can change settings related to all the camera operations including shooting, playback, and operating method. You can also execute camera functions from the MENU.

- 1 Press the MENU button to display the menu screen.**

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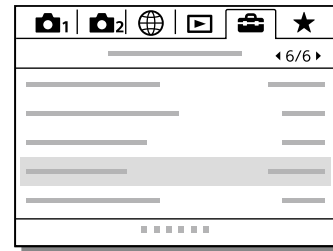
MENU button



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- 2 Select the desired setting you want to adjust using the top/bottom/left/right sides of the control wheel or by turning the control wheel, and then press the center of the control wheel.**

- Select an icon at the top of the screen and press the left/right side of the control wheel to move to another MENU item.










- 3 Select the desired setting value, and press the center to confirm your selection.**











List of MENU items

For details on each MENU items, refer to the reference page in the last column or the Help Guide.

1 (Camera Settings 1)








Red tab


Quality/Image Size		
 Quality	Sets the image quality for still images. ([RAW] / [Fine], etc.)	54
 RAW File Type	Selects the file type for RAW images.	Help Guide
 Image Size	Selects the size of still images. (L / M / S)	53
 Aspect Ratio	Selects the aspect ratio for still images.	Help Guide
APS-C/Super 35mm	Sets whether to record in APS-C-equivalent size for still images and Super 35 mm-equivalent size for movies.	Help Guide
 Long Exposure NR	Sets noise reduction processing for shots with a shutter speed of 1 second or longer.	Help Guide
 High ISO NR	Sets noise reduction processing for high-sensitivity shooting.	Help Guide
 Color Space	Changes the color space (range of reproducible colors).	Help Guide
Lens Comp.	Selects the type of lens compensation.	Help Guide
Shoot Mode/Drive		
Self-timer Type	When shooting with the self-timer, sets how many seconds elapse from when you press the shutter button until when the image is recorded and how many images are recorded.	Help Guide

Bracket Settings	Sets self-timer shooting in bracket mode, bracket type, shooting order for exposure bracketing, and white balance bracketing.	Help Guide
  Recall	Calls up settings pre-registered to [  Memory].	Help Guide
  Memory	Registers the desired modes and camera settings.	Help Guide
Reg Cust Shoot Set	Assign functions to the custom key to recall when shooting.	Help Guide
AF		
 Priority Set in AF-S	Sets the timing of the shutter release when [Focus Mode] is set to [Single-shot AF] or [DMF] with a still subject.	Help Guide
Priority Set in AF-C	Sets the timing of the shutter release when [Focus Mode] is set to [Continuous AF] with a moving subject.	Help Guide
Focus Area	Selects the area of focus. ([Wide] / [Flexible Spot], etc.)	39
Focus Settings	Allows you to focus using the front dial, rear dial or control wheel.	Help Guide
 Swt. V/H AF Area	Sets whether to adjust the [Focus Area] and the position of the focusing frame based on the camera's position (horizontal or vertical).	Help Guide
 AF Illuminator	Sets the AF illuminator, which provides light to aid focusing in dark scenes.	Help Guide
Center Lock-on AF	Sets the function to track a subject and continue focusing when pressing the center of the control wheel in the shooting screen.	Help Guide
 AF Track Sens	Sets the AF tracking sensitivity for the still image mode.	Help Guide






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 AF System	Sets the auto focus method when an LA-EA1/LA-EA3 Mount Adaptor (sold separately) is attached.	Help Guide
 AF w/ shutter	Sets whether to perform auto focusing when the shutter button is pressed halfway down. This is useful when you want to adjust the focus and exposure separately.	Help Guide
 Pre-AF	Sets whether or not to perform auto focus before the shutter button is half pressed.	Help Guide
 Eye-Start AF	Sets whether to use auto focus when you look through the viewfinder if an LA-EA2/LA-EA4 Mount Adaptor (sold separately) is attached.	Help Guide
 AF Area Regist.	Sets whether to move the focusing frame to a preassigned position when shooting still images.	Help Guide
 Del. Reg. AF Area	Deletes the focusing frame position information that was registered using [ AF Area Regist.].	Help Guide
AF Area Auto Clear	Sets whether the focus area is displayed all the time or disappears automatically shortly after focusing.	Help Guide
Disp. cont. AF area	Sets whether or not to display the focus area in [Continuous AF] mode.	Help Guide
AF Micro Adj.	Finely adjusts the autofocused position, when using the LA-EA2 or LA-EA4 Mount Adaptor (sold separately).	Help Guide
Exposure		
Exposure Comp.	Compensates for the brightness of the entire image.	Help Guide
Reset EV Comp.	Sets whether to maintain the exposure value set using [Exposure Comp.] when you turn off the power when the exposure compensation dial position is set to "0."	Help Guide

ISO	Sets the ISO sensitivity. ([ISO AUTO], etc.)	Help Guide
ISO AUTO Min. SS	Sets the slowest shutter speed at which ISO sensitivity will start to change in [ISO AUTO] mode.	Help Guide
Metering Mode	Selects the method for measuring brightness. ([Multi] / [Spot], etc.)	Help Guide
Spot Metering Point	Sets whether to coordinate the spot metering point with the focus area when [Focus Area] is set to [Flexible Spot] or [Expand Flexible Spot].	Help Guide
Exposure step	Selects the size of the increment step for shutter speed, aperture, and exposure compensation values.	Help Guide
 AEL w/ shutter	Sets whether to lock the exposure when the shutter button is pressed halfway down. This is useful when you want to adjust the focus and exposure separately.	Help Guide
Exposure Std. Adjust	Adjusts the standard for the correct exposure value for each metering modes.	Help Guide
Flash		
Flash Mode	Sets the flash settings.	Help Guide
Flash Comp.	Adjusts the intensity of flash output.	Help Guide
Exp. comp. set	Sets whether to reflect exposure compensation value to flash compensation.	Help Guide
Red Eye Reduction	Reduces the red-eye phenomenon when using flash.	Help Guide

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Color/WB/Img. Processing		
White Balance	Corrects the tone effect of the ambient light to shoot whitish objects in a white tone. ([Auto] / [Daylight], etc.)	Help Guide
Priority Set in AWB	Selects which tone to prioritize when shooting under lighting conditions such as incandescent light with [White Balance] set to [Auto].	Help Guide
DRO/Auto HDR	Analyzes the contrast of light and shadow between the subject and the background by dividing the image into small areas, and creates an image with the optimal brightness and gradation.	Help Guide
Creative Style	Selects the desired image processing. You can also adjust contrast, saturation, and sharpness. ([Vivid] / [Portrait], etc.)	Help Guide
Picture Effect	Shoots images with a texture unique to the selected effect. ([Toy Camera] / [Rich-tone Mono.], etc.)	Help Guide
Focus Assist		
Focus Magnifier	Enlarges the image before shooting so that you can check the focus.	Help Guide
Focus Magnif. Time	Sets the length of time the image will be shown in an enlarged form.	Help Guide
 Initial Focus Mag.	Sets the initial magnification scale when using [Focus Magnifier].	Help Guide
 AF in Focus Mag.	Sets whether or not to autofocus when an enlarged image is being displayed. While the enlarged image is being displayed, you can focus within a smaller area than the flexible spot.	Help Guide
 MF Assist	Displays an enlarged image when focusing manually.	Help Guide





Peaking Level	Enhances the outline of in-focus areas with a specific color when focusing manually.	Help Guide
Peaking Color	Sets the color used for the peaking function.	Help Guide
Face Detection/Shoot Assist		
Face Detection	Sets whether to detect faces and automatically adjust various settings such as focus, exposure, image processing, and flash.	Help Guide
Face Registration	Registers or changes the person to be given priority when focusing.	Help Guide




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📷2 (Camera Settings 2) Purple tab

Movie		
📷 Exposure Mode	Selects the exposure mode to suit your subject or effect.	Help Guide
📷 S&Q Exposure Mode	Sets the exposure mode when shooting slow-motion/quick-motion movies.	Help Guide
📷 File Format	Selects the movie file format. ([XAVC S 4K] / [AVCHD], etc.)	55
📷 Record Setting	Selects the bit rate and frame rate for the movie size.	56
📷 S&Q S&Q Settings	Changes the settings for slow-motion and quick-motion movie shooting.	Help Guide
Dual Video REC	Sets whether to simultaneously record an XAVC S movie and MP4 movie or an AVCHD movie and MP4 movie.	Help Guide
📷 AF drive speed	Switches focusing speed when using autofocus in movie mode.	Help Guide
📷 AF Track Sens	Sets the AF tracking sensitivity for the movie mode.	Help Guide

 Auto Slow Shut.	Sets the function that automatically adjusts the shutter speed following the brightness of the environment in movie mode.	Help Guide
Audio Recording	Sets whether to record audio when shooting a movie.	Help Guide
Audio Rec Level	Adjusts the audio recording level during movie recording.	Help Guide
Audio Level Display	Sets whether to display the audio level.	Help Guide
Audio Out Timing	Sets the timing of audio output during the movie recording.	Help Guide
Wind Noise Reduct.	Reduces wind noise during movie recording.	Help Guide
 Marker Display	Sets whether to display markers on the monitor when recording movies.	Help Guide
 Marker Settings	Sets which markers to display on the monitor when recording movies.	Help Guide
Video Light Mode	Sets the illumination setting for the HVL-LBPC LED light (sold separately).	Help Guide
Movie w/ shutter	Records movies using the shutter button.	Help Guide
Shutter/SteadyShot		
 Shutter Type	Sets whether to shoot with a mechanical shutter or an electronic shutter.	44
e-Front Curtain Shut.	Sets whether to use the electronic front curtain shutter function.	Help Guide
Release w/o Lens	Sets whether to release the shutter when the lens is not attached.	Help Guide
Release w/o Card	Sets whether to release the shutter when a memory card is not inserted.	Help Guide
SteadyShot	Sets whether to activate SteadyShot for shooting.	Help Guide
SteadyShot Settings	Sets SteadyShot settings.	Help Guide

Zoom		
Zoom	Sets the zoom scale for zoom functions other than the optical zoom.	Help Guide
Zoom Setting	Sets whether to use the Clear Image Zoom and Digital Zoom when zooming.	Help Guide
Zoom Ring Rotate	Assigns the zoom in/out to the rotational direction of the zoom lens. This function is only available with a power zoom lens that is compatible with this function.	Help Guide
Display/Auto Review		
DISP Button	Sets the type of information to be displayed on the monitor or in the viewfinder when the DISP button is pressed.	Help Guide
FINDER/MONITOR	Sets the method for switching the display between the electronic viewfinder and the monitor.	Help Guide
 Finder Frame Rate	Sets the frame rate for the viewfinder when shooting still images.	Help Guide
Zebra	Displays stripes to adjust brightness.	Help Guide
Grid Line	Displays grid lines for adjusting the image composition.	Help Guide
Exposure Set. Guide	Sets the guide displayed when exposure settings are changed in the shooting screen.	Help Guide
Live View Display	Sets whether to reflect settings such as exposure compensation in screen display.	Help Guide
Shoot. Start Disp.	Sets whether to let the screen black out when shooting the first image during blackout-free shooting.	48
Shoot. Timing Disp.	Sets the method for displaying the shutter release timing on the screen during blackout-free shooting.	47


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Cont. Shoot. Length	Sets whether to display an indicator of the remaining time for which continuous shooting can be performed at the same shooting speed.	50
Auto Review	Sets auto review to display the captured image after shooting.	Help Guide
Custom Operation		
Custom Key (Shoot.)	Assigns functions to the various keys so that you can perform operations more quickly by pressing the keys when shooting images.	Help Guide
Custom Key (PB)	Assigns functions to the keys so that you can perform operations more quickly by pressing the keys when playing back images.	Help Guide
Function Menu Set.	Customizes the functions displayed when the Fn (Function) button is pressed.	Help Guide
Dial Setup	Sets the functions of the front and rear control dials when the exposure mode is set to M. Dials can be used for adjusting shutter speed and aperture.	Help Guide
Dial Ev Comp	Sets whether to compensate the exposure with the front or rear dial.	Help Guide
MOVIE Button	Enables or disables for the MOVIE button.	Help Guide
Lock Operation Parts	Sets whether to disable the multi-selector, control wheel, or front and rear dials temporarily when the Fn button is pressed and held down.	Help Guide
Audio signals	Selects whether the electronic shutter makes a sound or the camera beeps during auto focus and self-timer operations.	Help Guide

 **(Network)**

Green tab

Send to Smartphone	Transfers images to display on a smartphone.	Help Guide
Send to Computer	Backs up images by transferring them to a computer connected to a network.	Help Guide
FTP Transfer Func.	Sets image transfer using FTP and executes it. * Basic knowledge of FTP server is required.	61
View on TV	Allows you to view images on a network-enabled TV.	Help Guide
Ctrl w/ Smartphone	Allows you to use a smartphone as the remote controller for the camera and shoot still images/movies. Still images/movies shot via remote control are sent to the smartphone from the camera.	Help Guide
Airplane Mode	Disables wireless communications from the device such as Wi-Fi, NFC, and Bluetooth function.	Help Guide
Wi-Fi Settings	Allows you to register your access point and check or change the Wi-Fi connection information.	Help Guide
Bluetooth Settings	Controls the settings for connecting the camera with a smartphone via a Bluetooth connection.	Help Guide
 Loc. Info. Link Set.	Obtains location information from the paired smartphone and records it to captured images.	Help Guide
Wired LAN Setting	Sets the wired LAN.	Help Guide
Edit Device Name	Changes the device name under Wi-Fi Direct, etc.	Help Guide
Imp Root Certificate	Imports a root certificate to the camera.	Help Guide



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Reset Network Set.	Resets all the network settings.	Help Guide
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▶ (Playback)

Blue tab

Delete	Deletes an image.	Help Guide
View Mode	Plays back images from a specified date or specified folder of still images and movies.	Help Guide
Image Index	Displays multiple images at the same time.	Help Guide
Display Rotation	Sets the playback orientation for images shot vertically.	Help Guide
Select PB Media	Selects the memory card slot of the memory card to be played back.	Help Guide
Copy	Allows you to copy images from the memory card in the memory card slot designated in [Select PB Media] to the memory card in the other slot.	Help Guide
Slide Show	Plays a slide show.	Help Guide
Rotate	Rotates the image.	Help Guide
⊕ Enlarge Image	Enlarges the playback images.	Help Guide
⊕ Enlarge Init. Mag.	Sets the initial magnification scale when playing back enlarged images.	Help Guide
⊕ Enlarge Initial Pos.	Sets the initial magnification area when playing back enlarged images.	Help Guide
Protect	Protects recorded images against accidental erasure.	Help Guide
Specify Printing	Specifies in advance on the memory card which still images to print out later.	Help Guide




Photo Capture	Captures a chosen scene in a movie to save as a still image.	Help Guide
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(Setup)

Yellow tab

Monitor Brightness	Adjusts the brightness of the screen.	Help Guide
Viewfinder Bright.	Sets the brightness of the electronic viewfinder.	Help Guide
Finder Color Temp.	Sets the color temperature of the viewfinder.	Help Guide
Volume Settings	Sets the volume for movie playback.	Help Guide
Delete confirm.	Sets whether [Delete] or [Cancel] is preselected in the delete confirmation screen.	Help Guide
Pwr Save Start Time	Sets the time intervals to automatically switch to power save mode.	Help Guide
Auto Pwr OFF Temp.	Sets the camera temperature at which the camera turns off automatically during shooting. When shooting in hand-held mode, set to [Standard].	Help Guide
NTSC/PAL Selector¹	Changes the TV format of the device so that you can shoot in a different movie format.	Help Guide
Cleaning Mode	Starts the cleaning mode to clean the image sensor.	Help Guide
Touch Operation	Sets whether or not to activate the touch operation of the monitor.	51
Demo Mode	Sets demonstration playback of movies to on or off.	Help Guide

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TC/UB Settings	Sets the time code (TC) and user bit (UB). * This function is for skilled movie creators.	Help Guide
Remote Ctrl	Sets whether to use the infrared remote control.	Help Guide
HDMI Settings	Sets the HDMI settings.	Help Guide
 4K Output Sel.	Sets how to record and output 4K movies via HDMI when the camera is connected to an external recorder/ player that supports 4K.	Help Guide
 USB Connection	Sets the USB connection method.	Help Guide
USB LUN Setting	Enhances compatibility by limiting the functions of USB connection. Set to [Multi] in normal conditions and to [Single] only when the connection cannot be established.	Help Guide
USB Power Supply	Sets whether to supply power via USB connection when the camera is connected to a computer or USB device using a micro USB cable.	Help Guide
PC Remote Settings	Controls the PC remote shooting settings.	Help Guide
 Language	Selects the language.	34
Date/Time Setup	Sets the date, time, and daylight savings.	34
Area Setting	Sets the location of use.	Help Guide
Copyright Info	Sets copyright information for still images.	Help Guide
Format	Formats the memory card.	Help Guide
File Number	Sets the method used to assign file numbers.	Help Guide

Set File Name	Changes the first 3 characters of the file names for still images.	Help Guide
Select Rec. Media	Selects the memory card slot of the memory card on which to record.	29, Help Guide
Recording Mode	Sets the method for recording images to two memory card slots.	Help Guide
Select REC Folder	Changes the folder selected for storing still images and movies (MP4).	Help Guide
New Folder	Creates a new folder for storing still images and movies (MP4).	Help Guide
Folder Name	Sets the folder format for still images.	Help Guide
Recover Image DB	Recovers the image database file and enables recording and playback.	Help Guide
Display Media Info.	Displays the remaining recording time of movies and the recordable number of still images on the memory card.	Help Guide
Version	Displays the camera software version.	Help Guide
Certification Logo^{*2}	Displays certification information for the camera (only some of the certification logos are displayed).	Help Guide
Setting Reset	Restores settings to their defaults. Select [Initialize] to restore all settings to their default values.	Help Guide

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★ (My Menu)

Gray tab

Add Item	Adds desired MENU items to ★ (My Menu).	Help Guide
Sort Item	Sorts the MENU items added to ★ (My Menu).	Help Guide
Delete Item	Deletes MENU items added to ★ (My Menu).	Help Guide
Delete Page	Deletes all the MENU items on a page in ★ (My Menu).	Help Guide
Delete All	Deletes all the MENU items added to ★ (My Menu).	Help Guide

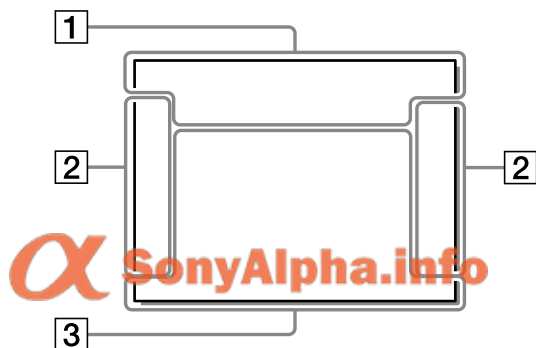
*1 If you change this item, you will need to format the memory card for compatibility with the PAL or NTSC system. Also, note that it may not be possible to play back movies recorded for the NTSC system on PAL system TVs.

*2 Overseas models only.

List of icons on the monitor

The displayed contents and their positions in the illustrations are just guidelines, and may differ from the actual displays.

Monitor mode



For playback

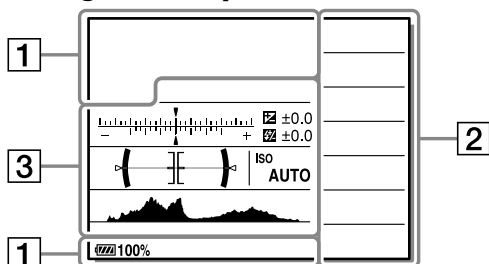
Basic information display



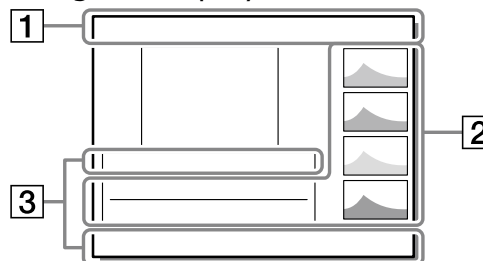
GB

Viewfinder mode

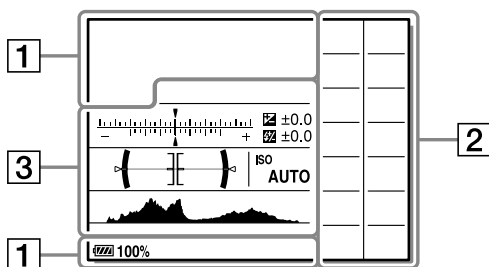
[Intelligent Auto] mode



Histogram display

















P/A/S/M mode










1

Display	Indication
	Shooting mode (35)
	Register number (69)
	Scene Recognition icons
	Memory card status (29, 89)
100	Remaining number of recordable images (90)
3:2 16:9	Aspect ratio of still images (68)
24M 20M 10M 8.7M 6.0M 5.1M 2.6M 2.2M	Image size of still images (53)
RAW RAW+J RAW RAW+J X.FINE FINE STD	Image quality of still images (54)
120p 60p 60i 30p 24p 100p 50p 50i 25p	Frame rate of movies (56)

Display	Indication
	Record setting of movies (56)
	Bluetooth connection available / Bluetooth connection unavailable (77)
	Connected to smartphone / Not connected to smartphone
	Remaining battery (27)
	Remaining battery warning
	USB power supply (80)
	Flash charge in progress
	APS-C/Super 35mm (68)
VIEW	Setting Effect OFF (75)
	AF Illuminator (69)
	NFC active (60)
	Airplane Mode (77)
	No audio recording of movies (74)
	Wind Noise Reduct. (74)
	SteadyShot off/on, Camera shake warning (74)

Display	Indication
	SteadyS. Focal Len./ Camera shake warning (74)
	Obtaining location information/ Location information cannot be obtained (77)
	Overheating warning
	Database file full/ Database file error
	Smart Zoom / Clear Image Zoom / Digital Zoom (75)
    	View Mode (78)
100-0003	Folder number – File number (80)
	Protect (78)
XAVCS 4K XAVCS HD AVCHD MP4	File format of movies (55)
DPOF	DPOF set (78)
  	Dual Video REC (73)
—PC—	PC remote (80)

Display	Indication
	Shooting without shutter sound (46)
	Bright Monitoring
	Copyright information writing on (80)
120fps 60fps 30fps 15fps 8fps 4fps 100fps 50fps 25fps 12fps 6fps 3fps 2fps 1fps	Frame rate for slow/quick motion shooting (73)
	Writing data / Number of images left to write
	Focus Cancel (51)
	Lock-on AF Cancel (51)
Spot Focus	Performing Spot Focus (52)
	Infrared remote control

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Display	Indication
STBY	Movie recording standby
REC 1:00:12	Actual movie recording time (hours: minutes: seconds)
● (●) (●)	Focus indicator (38)
1/250	Shutter speed
F3.5	Aperture value
ISO 400 ISO AUTO	ISO sensitivity (71)
320 400 500 5.0 5.6 6.3	Exposure Setting Guide (75)
*L	AE lock/ FEL lock
	Shutter speed indicator
	Aperture indicator
	Histogram
	Location information (77)
90°44'55"N 233°44'55"W	Latitude/longitude information (77)
	Digital level gauge
CH1 CH2	Audio Level Display (74)
D-R OFF DRO HDR HDR !	DRO/ Auto HDR/Auto HDR image warning (72)
	Picture Effect error
2017 - 1 - 1 10:37AM	Date of recording (34)

Display	Indication
3/7	File number/Number of images in the view mode
REC STBY	REC Control (80)
	Spot metering area (71)
00:00:00:00	Time code (hours: minutes: seconds: frames) (80)
00 00 00 00	User Bit (80)

GB

About this product

Specifications


Battery life and number of recordable images

		Battery life	Number of images
Shooting (still images)	Screen mode	—	Approx. 650
	Viewfinder mode	—	Approx. 480
Actual shooting (movies)	Screen mode	Approx. 120 min.	—
	Viewfinder mode	Approx. 105 min.	—
Continuous shooting (movies)	Screen mode	Approx. 195 min.	—
	Viewfinder mode	Approx. 185 min.	—

- The above estimates for battery life and number of recordable images apply when the battery pack has been fully charged. The battery life and number of images may decrease depending on the conditions of use.
- The battery life and number of recordable images are estimates based on shooting with the default settings under the following conditions:
 - Using the battery pack at an ambient temperature of 25°C (77°F).
 - Using a Sony SDXC memory card of UHS-I Speed Class 3 (U3) (sold separately)
 - Using a lens FE 28-70 mm F3.5-5.6 OSS (sold separately)
- The numbers for “Shooting (still images)” are based on the CIPA standard and shooting under the following conditions: (CIPA: Camera & Imaging Products Association)
 - One picture is taken every 30 seconds.
 - The power is turned on and off once every ten times.

- The number of minutes for movie shooting is based on the CIPA standard and shooting under the following conditions:
 - The image quality is set to XAVC S HD 60p 50M / 50p 50M.
 - Actual shooting (movies): Battery life based on repeatedly shooting, zooming, shooting stand-by, turning on/off, etc.
 - Continuous shooting (movies): Battery life based on non-stop shooting until the limit (29 minutes) has been reached, and then continued by pressing the MOVIE (Movie) button again. Other functions, such as zooming, are not operated.

Memory cards that can be used

You can use the following types of memory cards with this camera. The  mark indicates that these memory cards can be used for shooting still images or movies.

When using Memory Stick Micro media or microSD memory cards with this camera, make sure to use with the appropriate adaptor.

Memory card	For still images	For movies		
		MP4	AVCHD	XAVC S
Memory Stick PRO Duo	✓	✓ (Mark2 only)	✓ (Mark2 only)	—
Memory Stick PRO-HG Duo	✓	✓	✓	✓*1
Memory Stick Micro (M2)	✓	✓ (Mark2 only)	✓ (Mark2 only)	—
SD memory card	✓	✓*2	✓*2	—
SDHC memory card	✓	✓*3	✓*3	✓*4
SDXC memory card	✓	✓*3	✓*3	✓*4
microSD memory card	✓	✓*2	✓*2	—
microSDHC memory card	✓	✓*3	✓*3	✓*4
microSDXC memory card	✓	✓*3	✓*3	✓*4

*1 Movies cannot be recorded in 100 Mbps or more.

*2 Memory card compatible with SD Speed Class 4 (**CLASS 4**) or faster

*3 Memory card compatible with SD Speed Class 4 (**CLASS 4**) or faster, or with UHS-I or UHS-II

*4 Memory card compatible with SD Speed Class 10 (**CLASS 10**), or with UHS-I or UHS-II

When recording at 100 Mbps or more, a UHS-I U3 or UHS-II U3 memory card is required.

GB

Note

- Use the slot 1 when you are using a UHS-II memory card. Also, set [Select Rec. Media] to [Slot 1].
- Memory Stick PRO Duo media cannot be used in the slot 1.
- When an SDHC memory card is used to record an XAVC S movie over extended periods of time, the recorded movies will be divided into files 4 GB in size. The divided files can be handled as a single file by importing them to a computer using PlayMemories Home.
- When recording a movie on memory cards in both the slot 1 and the slot 2 with following camera settings, insert two memory cards with the same file system. XAVC S movies cannot be recorded simultaneously when using a combination of the exFAT file system and FAT32 file system.
 - [File Format] is set to [XAVC S 4K] or [XAVC S HD]
 - [Recording Mode] is set to [Simult. (□□)] or [Simult. (◀/□□)]

Memory card	File system
SDXC memory card	exFAT
Memory Stick PRO Duo (Mark2) Memory Stick PRO-HG Duo SDHC memory card	FAT32

Number of recordable images

When you insert a memory card into the camera and set the ON/OFF (Power) switch to "ON," the number of images that can be recorded (should you continue to shoot using the current settings) is displayed on the screen.

Note

- When "0" (the number of recordable images) flashes in orange, the memory card is full. Replace the memory card with another one, or delete images from the current memory card.
- When "NO CARD" flashes in orange, it means no memory card has been inserted. Insert a memory card.

■ The number of images that can be recorded on a memory card

The table below shows the approximate number of images that can be recorded on a memory card formatted with this camera. The values are defined using Sony standard memory cards for testing. The values may vary depending on the shooting conditions and the type of memory card used.

[📷 Image Size]: [L: 24M]

[📷 Aspect Ratio]: [3:2]*

(Units: Images)

Quality	8 GB	16 GB	32 GB	64 GB
Standard	1100	2300	4600	9200
Fine	790	1600	3200	6400
Extra fine	435	870	1750	3500
RAW & JPEG (Compressed RAW)	215	435	870	1750
RAW (Compressed RAW)	295	600	1200	2400
RAW & JPEG (Uncompressed RAW)	125	255	510	1000
RAW (Uncompressed RAW)	150	305	610	1200

* When [📷 Aspect Ratio] is set to other than [3:2], you can record more images than the numbers shown in the table above (except when [RAW] is selected).

Note

- Even if the number of recordable images is higher than 9999 images, "9999" will appear.
- When an image shot with another product is played back on this camera, the image may not appear in its actual size.
- The numbers shown are when using a Sony memory card.

GB

Recordable movie times

The table below shows the approximate total recording times using a memory card formatted with this camera. The values may vary depending on the shooting conditions and the type of memory card used. The recording times for when [File Format] is set to [XAVC S 4K], [XAVC S HD], and [AVCHD] are recording times when shooting with [Dual Video REC] set to [Off].

(h (hour), m (minute))

File Format	Record Setting	8 GB	16 GB	32 GB	64 GB
XAVC S 4K	30p 100M/ 25p 100M	9 m	15 m	35 m	1 h 15 m
	30p 60M/ 25p 60M	15 m	30 m	1 h	2 h 5 m
	24p 100M*	9 m	15 m	35 m	1 h 15 m
	24p 60M*	15 m	30 m	1 h	2 h 5 m
XAVC S HD	120p 100M/ 100p 100M	9 m	15 m	35 m	1 h 15 m
	120p 60M/ 100p 60M	15 m	30 m	1 h	2 h 5 m
	60p 50M/ 50p 50M	15 m	35 m	1 h 15 m	2 h 35 m
	30p 50M/ 25p 50M	15 m	35 m	1 h 15 m	2 h 35 m
	24p 50M*	15 m	35 m	1 h 15 m	2 h 35 m
AVCHD	60i 24M (FX)/ 50i 24M (FX)	40 m	1 h 25 m	3 h	6 h
	60i 17M (FH)/ 50i 17M (FH)	55 m	2 h	4 h 5 m	8 h 15 m
	60p 28M (PS)/ 50p 28M (PS)	35 m	1 h 15 m	2 h 30 m	5 h 5 m
	24p 24M (FX)/ 25p 24M (FX)	40 m	1 h 25 m	3 h	6 h
	24p 17M (FH)/ 25p 17M (FH)	55 m	2 h	4 h 5 m	8 h 15 m

File Format	Record Setting	8 GB	16 GB	32 GB	64 GB
MP4	1920×1080 60p 28M/50p 28M	35 m	1 h 15 m	2 h 35 m	5 h 20 m
	1920×1080 30p 16M/25p 16M	1 h	2 h	4 h 10 m	8 h 25 m
	1280×720 30p 6M/25p 6M	2 h 35 m	5 h 20 m	10 h 55 m	22 h

* Only when [NTSC/PAL Selector] is set to NTSC

- Continuous shooting is possible for approximately 29 minutes (a product specification limit). The continuous recordable time may differ in the following situations:

– When the file format is set to MP4 (28M): Approximately 20 minutes (limited by file size of 4 GB).

- When shooting slow-motion/quick-motion movies: Recording will automatically stop when the recorded file reaches approximately 29 minutes (the played back movie reaches approximately 29 minutes).

(Recording will automatically stop when the recorded file reaches approximately 15 minutes if [S&Q Record Setting] is set to [60p/50p] and [S&Q Frame Rate] is set to [30fps/25fps].)

- The times for slow-motion/quick-motion movies are playback times, not recording times.

Note

- The recordable time of movies varies because the camera is equipped with VBR (Variable Bit-Rate), which automatically adjusts image quality depending on the shooting scene. When you record a fast-moving subject, the image is clearer but the recordable time is shorter because more memory is required for recording. The recordable time also varies depending on the shooting conditions, the subject or the image quality/size settings.
- The times shown are recordable times using a Sony memory card.

Notes on continuous movie recording

- High-quality movie recording and high-speed continuous shooting require large amounts of power. Therefore, if you continue to shoot, the temperature inside the camera will rise, especially that of the image sensor. In such cases, the camera will turn off automatically because the surface of the camera is heated to a high temperature or the high temperature affects the quality of the images or the internal mechanism of the camera.

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- The duration of time available for continuous movie recording when the camera records with the default settings after the power has been turned off for a while is as follows. The values indicate the continuous time from when the camera starts recording until the camera stops recording.

Ambient temperature	Continuous recording time for movies (HD)	Continuous recording time for movies (4K)
20°C (68°F)	Approx. 29 min.	Approx. 29 min.
30°C (86°F)	Approx. 29 min.	Approx. 29 min.
40°C (104°F)	Approx. 29 min.	Approx. 29 min.

[Auto Pwr OFF Temp.]: [Standard]

HD: XAVC S HD (60p 50M/50p 50M, not connected via Wi-Fi)

4K: XAVC S 4K (24p 60M/25p 60M, not connected via Wi-Fi)

- The duration of time available for movie recording varies with the temperature, file format/record setting for movies, Wi-Fi network environment, or condition of the camera before you start recording. If you frequently recompose or shoot images after the power is turned on, the temperature inside the camera will rise and the recording time available will be shorter.
- When  is indicated, the temperature of the camera is too high.
- If the camera stops movie recording due to a high temperature, leave it for some time with the power turned off. Start recording after the temperature inside the camera drops fully.
- If you observe the following points, you will be able to record movies for longer periods of time.
 - Keep the camera out of direct sunlight.
 - Turn the camera off when it is not being used.
- When  File Format] is set to [AVCHD], the file size of movies is limited to approx. 2 GB. If the movie file size reaches approx. 2 GB during recording, a new movie file will be created automatically.
- When  File Format] is set to [MP4], the file size of movies is limited to approx. 4 GB. If the movie file size reaches approx. 4 GB during recording, recording will stop automatically.

Specifications

Camera

[System]

Camera Type

Interchangeable Lens Digital Camera

Lens

Sony E-mount lens

[Image sensor]

Image format

35 mm full frame (35.6 mm × 23.8 mm), CMOS image sensor

Effective pixel number of camera

Approx. 24 200 000 pixels

Total pixel number of camera

Approx. 28 300 000 pixels

[SteadyShot]

System

In-camera sensor shift image stabilization system

[Anti-Dust]

System

Charge protection coating on optical filter and image sensor shift mechanism

[Auto focus system]

Detection system

Phase detection system/Contrast detection system

Sensitivity Range

-3 EV to +20 EV (at ISO 100 equivalent, F2.0)

AF illuminator

Approx. 0.3 m to 3 m (0.99 ft. to 9.8 ft.) (When using an FE 28-70 mm F3.5-5.6 OSS)

[Electronic viewfinder]

Type

Electronic viewfinder

Total number of dots

3 686 400 dots

Frame coverage

100%

Magnification

Approx. 0.78× with 50 mm lens at infinity, -1 m⁻¹

Eye Point

Approx. 23 mm from the eyepiece and approx. 18.5 mm from the eyepiece frame at -1 m⁻¹ (CIPA standard compliant)

Diopter Adjustment

-4.0 m⁻¹ to +3.0 m⁻¹

[Monitor]

LCD monitor

7.5 cm (3.0 type) TFT drive, touch panel

Total number of dots

1 440 000 dots

[Exposure control]

Metering method

1 200-zone evaluative metering

Metering Range

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

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ISO sensitivity (Recommended exposure index)

Still images: ISO 100 to ISO 51 200 (Extended ISO: Minimum ISO 50, maximum ISO 204 800), [ISO AUTO] (ISO 100 to ISO 6 400, Maximum/Minimum can be set.)

Movies: ISO 100 to ISO 51 200 equivalent (Extended ISO: Minimum ISO 100, maximum ISO 102 400), [ISO AUTO] (ISO 100 to ISO 6 400 equivalent, Maximum/Minimum can be set.)

Exposure compensation

±5.0 EV (switchable between 1/3 EV and 1/2 EV steps)

When using exposure compensation dial: ±3.0 EV (1/3 EV step)

[Shutter]

Type

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

Speed range

Still images (when shooting with the electronic shutter): 1/32 000 second* to 30 seconds (up to 1/8 second in continuous shooting)

* Available only in the M (Manual Exposure) and S (Shutter Priority) modes. For details, refer to the "Help Guide."

Still images (when shooting with the mechanical shutter): 1/8 000 second to 30 seconds, BULB

Movies: 1/8 000 second to 1/4 second (1/3 EV step)




- 1080 60i-compatible devices:
up to 1/60 second in AUTO mode (up to 1/30 second in Auto slow shutter mode)
- 1080 50i-compatible devices:
up to 1/50 second in AUTO mode (up to 1/25 second in Auto slow shutter mode)

Flash sync speed

1/250 second (when using a flash manufactured by Sony)

[Continuous shooting]

Continuous shooting speed (when shooting with the electronic shutter)

 Hi: Maximum of approx. 20 images per second/
 MD: Maximum of approx. 10 images per second/
 Lo: Maximum of approx. 5 images per second

- Based on our measurement conditions. The speed of continuous shooting can be slower, depending on the shooting conditions.

[Recording format]

File format

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

Movie (XAVC S format)

MPEG-4 AVC/H.264 XAVC S ver.1.0 format compliant

Video: MPEG-4 AVC/H.264

Audio: LPCM 2ch (48 kHz 16 bit)

Movie (AVCHD format)

AVCHD format Ver. 2.0 compatible

Video: MPEG-4 AVC/H.264

Audio: Dolby Digital 2ch, equipped with Dolby Digital Stereo Creator

- Manufactured under license from Dolby Laboratories.

Movie (MP4 format)

Video: MPEG-4 AVC/H.264

Audio: MPEG-4 AAC-LC 2ch

[Recording media]

Memory Stick media, SD cards

- For details, see "Memory cards that can be used" (page 89).

[Slot]

SLOT 1

Slot for SD cards (UHS-I and UHS-II compatible)

SLOT 2

Multi-slot for Memory Stick PRO Duo media and SD cards (UHS-I compatible)
Supports operations between two memory cards.

[Input/output terminals]

Multi/Micro USB Terminal*

Hi-Speed USB (USB 2.0)

* Supports Micro USB compatible devices.

HDMI

HDMI type D micro jack

🎤 (Microphone) terminal

∅ 3.5 mm Stereo mini jack

🎧 (Headphones) terminal

∅ 3.5 mm Stereo mini jack

LAN terminal

⚡ (Flash sync) terminal

[Power, general]

Battery pack

Rechargeable battery pack NP-FZ100

Power consumption (while shooting)

Using an FE 28-70 mm F3.5-5.6 OSS

When using the viewfinder:

Approx. 4.1 W

When using the monitor:

Approx. 3.0 W

[Others]

Microphone

Stereo

Speaker

Monaural

Exif Print

Compatible

DPOF

Compatible

PRINT Image Matching III

Compatible

Dimensions

Approx. 126.9 mm × 95.6 mm × 63.0 mm

(Approx. 5 inches × 3 7/8 inches × 2 1/2 inches) (W/H/D, excluding protrusions)

Mass

Approx. 673 g (1 lb 7.7 oz) (including battery pack and SD card)

Approx. 588 g (1 lb 4.7 oz) (body only)

Operating temperature

0°C to 40°C (32°F to 104°F)

Storage temperature

-20°C to +60°C (-4°F to +140°F)

[Wireless LAN]

Supported format

IEEE 802.11 b/g/n

Frequency band

2.4 GHz

Security

WEP/WPA-PSK/WPA2-PSK

Connection method

Wi-Fi Protected Setup™ (WPS)/
Manual

Access method

Infrastructure mode

[NFC]

Tag type

NFC Forum Type 3 Tag compliant

[Bluetooth communications]

Bluetooth standard Ver. 4.1

Frequency band

2.4 GHz

Model No. WW361847

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Battery charger BC-QZ1

Input rating

AC 100 V to 240 V, 50 Hz/60 Hz,
0.38 A

Output rating

DC 8.4 V, 1.6 A

AC Adaptor AC-UUD12/AC-UUE12

Power requirements

AC 100 V to 240 V, 50 Hz/60 Hz, 0.2 A

Output voltage

DC 5 V, 1.5 A

Rechargeable battery pack NP-FZ100

Nominal voltage



DC 7.2 V

Design and specifications are subject to change without notice.

On image data compatibility

- This camera conforms with DCF (Design rule for Camera File system) universal standard established by JEITA (Japan Electronics and Information Technology Industries Association).
- Playback of images recorded with your camera on other equipment and playback of images recorded or edited with other equipment on your camera are not guaranteed.

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