

Interchangeable Lens Digital Camera



E-mount

Instruction Manual

If your camera's system software version is earlier than Ver.5.0, refer to the Instruction Manual at the following URL.

http://helpguide.sony.net/ilc/ilce9/d832100911.pdf

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.





http://rd1.sony.net/help/ilc/1830/h zz/

ILCE-9 Help Guide



Instruction Manual (this book)





This manual introduces some basic functions.

For the quick start quide, see "Startup guide" (page 26). The "Startup guide" introduces the initial procedures from when you open the package until you release the shutter for the first shot.

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

You can quickly pull up information during shooting.

Select an item for which you want to view a description, and then press the m (Delete) button.

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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.

Notes on handling the product

- This camera is designed to be dust resistant and splash resistant, but it is not guaranteed to completely prevent the ingress of dust or water droplets.
- 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.
- 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 GB doctor immediately.

Notes on the monitor and electronic viewfinder

- 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.
- 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.
- If the monitor or electronic viewfinder is damaged, stop using the camera immediately. The damaged parts may harm your hands, face, etc.

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

- The camera body and battery may become warm with use – this is normal.
- 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 hightemperature environment
 - When someone with poor circulation or impaired skin sensation uses the camera
 - When using the camera with the [Auto Power OFF Temp.] set to [High].

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

Sony lenses/accessories

Using this unit with products from other manufacturers may affect its performance, leading to accidents or malfunction.

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.

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.

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

Location Info. Link Set.] to [Off] before shooting images.

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].

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.

Note on network functions

When you use network functions, unintended third parties on the network may access the camera, depending on the usage environment.

For example, unauthorized access to the camera may occur in network environments to which another network device is connected or can connect without permission. Sony bears no responsibility for any loss or damage caused by connecting to such network environments.

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

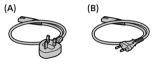
When you board an airplane, etc., you can turn off all wireless network functions temporarily using [Airplane Mode].

CALITION

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.

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).



LAN cable

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

For Customers in the U.S.A.

For question regarding your product or for the Sony Service Center nearest you, call 1-800-222-SONY (7669).

Declaration of Conformity

Trade Name: SONY Model No.: WW361847

undesired operation.

Responsible Party: Sony Electronics

Inc.

Address: 16535 Via Esprillo, San Diego, CA 92127 U.S.A. Telephone Number: 858-942-2230

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

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.

Checking the camera and the supplied items

The number in parentheses indicates the number of pieces.

- Camera (1)
- AC Adaptor (1)

The type 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 this equipment. Use the appropriate one that matches your country/region. See page 8.
- Rechargeable Battery Pack NP-FZ100 (1)



• Micro USB cable (1)



• Shoulder Strap (1)



• Body Cap (1) (Attached to the camera)



• Cable Protector (1)

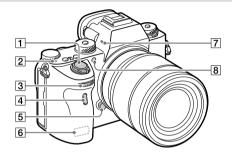


- Shoe Cap (1) (Attached to the camera)
- Eyepiece Cup (1) (Attached to the camera)
- Instruction Manual (1) (this manual)
- Reference Guide (1)

Identifying parts

See the pages in parentheses for details.

Front side



- ON/OFF (Power) switch (33)/Shutter button (34)
- - The image sensor is the sensor that converts light into an electric signal. The

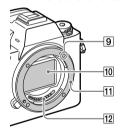
 mark shows the location of the image sensor. When you measure the exact distance between the camera and the subject, refer to the position of the horizontal line.



 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.

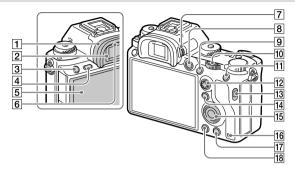
- 3 Front dial You can quickly adjust the settings for each shooting mode.
- 4 Infrared remote sensor
- 5 Lens release button (32)
- 6 Wi-Fi/Bluetooth antenna (built-in)
- 7 Microphone*
- 8 AF illuminator (71)/Selftimer lamp

When the lens is removed

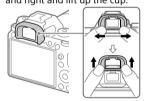


- 9 Mounting index (31)
- 10 Image sensor**
- 11 Mount
- 12 Lens contacts**
- Do not cover this part during movie recording. Doing so may cause noise or lower the volume.
- ** Do not directly touch these parts.

Rear side



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 →

- **1** 2 (Camera Settings 2) → [FINDER/MONITOR], and then switch [Viewfinder (Manual)] and [Monitor (Manual)].
- 2 Viewfinder

- 3 C3 button (Custom button 3) (20)
- 4 MENU button (68)
- (50) Monitor/Touch panel (50)
 You can adjust the monitor to an easily viewable angle and shoot from any position.



6 Eye sensor

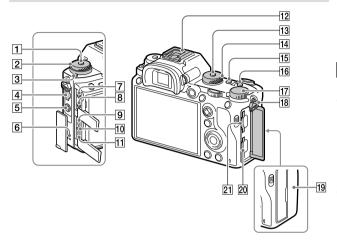
Diopter-adjustment dial
Adjust the diopter-adjustment
dial according to your eyesight
until the display appears clearly
in the viewfinder. If it is hard to
operate the diopter-adjustment
dial, remove the eyepiece cup
before operating the dial.



- 8 MOVIE (Movie) button (35)
- 10 Rear dial
 You can quickly adjust the settings for each shooting mode
- fil For shooting: AEL button For viewing: (Image Index) button
- 12 Multi-selector (19)
- 13 Media slot cover switch
- For shooting: Fn (Function) button (21)
 For viewing:
 ♠☐ (Send to Smartphone) button
 You can display the screen for [Send to Smartphone] by pressing this button.
- 15 Control wheel (19)

- 16 Access lamp
- ff For shooting: C4 button (Custom button 4) (20) For viewing: 何(Delete) button (35)
- 18 (Playback) button (35)

Top side/Side view



- Drive mode dial lock release button
- 2 Upper: Drive mode dial Lower: Focus mode dial (36)
- 3 Focus mode dial lock release button
- 4 LAN terminal
- 5 (Flash sync) terminal
- 6 Speaker

- (Microphone) jack
 When an external microphone
 is connected, the builtin 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* (65) This terminal supports Micro USB-compatible devices.

12 Multi Interface Shoe*

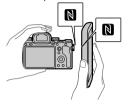
Some accessories may not go in all the way and protrude backward from the Multi interface shoe. However, when the accessory reaches the front end of the shoe, the connection is completed.

- 13 Mode dial lock release button
- 14 Mode dial (35)
- 15 C2 button (Custom button 2) (20)
- 16 C1 button (Custom button 1) (20)
- 17 Exposure compensation dial
- 18 Hooks for shoulder strap
 Attach both ends of the strap
 onto the camera.



19 N (N mark) (62)

 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) (28)

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

21 SLOT 2 (Memory card slot 2) (30)

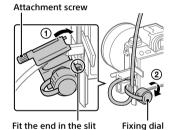
Supports SD cards (compatible with UHS-I) and Memory Stick PRO Duo media * For details on compatible accessories for the multi interface shoe and the Multi/Micro USB Terminal, visit the Sony website, or consult your Sony dealer or local authorized Sony service facility. Accessories for the Accessory Shoe can also be used. Operations with other manufactures' accessories are not guaranteed.

Multi Interface Shoe

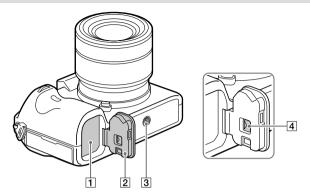
Accessory Shoe

To attach the cable protector

Use the cable protector to prevent the HDMI cable from being disconnected when shooting images with the HDMI cable connected. 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.



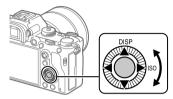
Bottom



- 1 Battery insertion slot (27)
- 2 Battery cover (27)
- 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

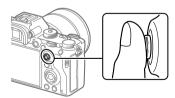
Basic operations

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 multiselector in the default settings.

Assigning frequently used functions to buttons (Custom Key)

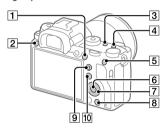
You can use the custom key function to assign the functions you use most frequently to easily operable keys. This lets you skip the process of selecting items from MENU, so you can recall the functions more quickly. You can also assign [Not set] to easily operable keys to prevent accidental operation.

You can separately assign functions to custom keys for the still image shooting mode (**四** Custom Key), movie shooting mode (**国** Custom Key), and playback mode (**D** Custom Key).

• Assignable functions vary depending on the keys.

You can assign functions to the following keys.

- 1 AF-ON Button
- 2 Custom Button 3
- 3 Custom Button 2
- 4 Custom Button 1
- 5 AEL Button
- 6 Center Button
- 7 Control Wheel / Left Button / Right Button / Down Button
- 8 Custom Button 4
- 9 Multi-Slc Center Btn
- 10 Fn/1 Button



Hint

 You can recall functions more quickly by using the Function menu (page 21) to configure each setting directly from the Fn button, along with the custom keys.

The following is the procedure for assigning the [Eye AF] function to the AEL button.

1 MENU $\rightarrow \triangle 2$ (Camera Settings 2) $\rightarrow [\ \bigcirc \]$ Custom Key].

• If you want to assign a function to recall while shooting movies, select [□ Custom Key]. If you want to assign a function to recall while playing back images, select [► Custom Key].

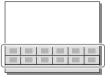
- 2 Move to the [Rear1] screen using the left/right side of the control wheel. Then, select [AEL Button] and press the center of the control wheel.
- 3 Press the left/right side of the control wheel until [Eye AF] is displayed. Select [Eye AF], and then press the center.
 - If you press the AEL button in the still image shooting mode and eyes are detected, [Eye AF] will activate, and the camera will focus on the eyes. Shoot images while holding down the AEL button.

Note

- You can also assign shooting functions to the focus hold button on the lens.
 However, some lenses do not have a focus hold button.
- If you assign [Follow Custom () to a custom key using [Custom Key], but the function is one that is unavailable in the movie shooting mode such as [JPEG Quality] or [Flash Mode], the function will not be recalled when you press the key in the movie shooting mode.

Using the Fn (Function) button (Function menu)

The Function menu is a menu of 12 functions that is displayed at the bottom of the screen when you press the Fn (Function) button in the shooting mode. You can access frequently used functions more quickly by registering them to the function menu.



Hint

 You can recall functions more quickly by using the custom key function (page 20) to assign frequently used functions to desired keys, along with the function menu. 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

To change the functions in the function menu (Function Menu Set.)

The following is the procedure for changing [Drive Mode] in the function menu to [Grid Line].

- ① MENU → 🗖 2 (Camera Settings 2) → [Function Menu Set.].
- ② Select ৩☐ (Drive Mode) from among the twelve functions in the function menu using the top/bottom/left/right side of the control wheel, and then press the center.
- ③ Press the left/right side of the control wheel until [Grid Line] is displayed. Select [Grid Line], and then press the center.
 - (Grid Line) will be displayed in the former location of

 □ (Drive Mode) in the function menu.

How to use the Quick Navi screen

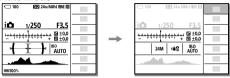
The Quick Navi screen is a function optimized for shooting with the viewfinder, that lets you control settings directly.

- 1 Select MENU → ♠2 (Camera Settings 2) → [DISP Button] → [Monitor].
- 2 Place a ♥ mark on [For viewfinder] and then select [Enter].
- 3 Press the DISP on the control wheel to set the screen mode to [For viewfinder].

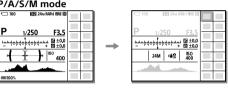
4 Press the Fn button to switch to the Quick Navi screen.

• 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



- **5** Select a function to set by pressing the top/bottom/left/right side of the control wheel.
- 6 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 5, 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 quide

Note

- Items that are gray on the Quick Navi screen are not adjustable.
- When using [Creative Style], etc., 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 A.
- Slide the battery pack in the direction of the arrow as far as it will go.

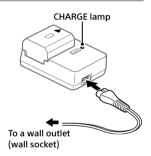


2 Connect the power cord (supplied) to the battery charger, and connect the battery charger to the wall outlet (wall socket).

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



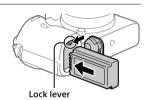
- When charging is finished, the CHARGE lamp and all indicators turn off.
- Charging time (full charge): approximately 150 min. (when charging a fully depleted battery pack at a temperature of 25°C (77°F))
- When you use a completely new battery pack or a battery pack that has not been used for a long 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

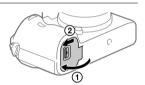
1 Open the battery cover.



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

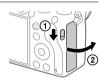
Make sure that the access lamp (page 14) is not lit, and turn off the camera. Then, slide the lock lever and remove the battery pack. Be careful not to drop the battery pack.



Step 3: Inserting a memory card

For details on memory cards that can be used with this camera, refer to page 93.

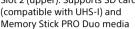
1 Open the memory card cover.



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





- 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 $\implies (Setup) \rightarrow [Rec. Media Settings] \rightarrow [Prioritize Rec. Media].$ 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 [Prioritize 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 83).

Note

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

■To remove the memory card

Make sure that the access lamp (page 14) is not lit, and then push in the memory card once to remove it



■To record to memory cards in two slots

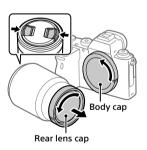
The slot 1 is used in the default settings. If you do not intend to change the settings and will only use one memory card, use the slot 1.

By inserting another memory card into the slot 2, you can record the same images to two memory cards simultaneously or record a different type of image (still images/movies) to each memory card ([Recording Mode] under [Rec. Media Settings]) (page 83).

Step 4: Attaching a lens

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.
- It is recommended that you attach the front lens cap when you have done shooting.



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
Lens compatible with 35 mm full-frame format	(An optional Mount Adaptor (sold separately) compatible with full-frame format is required)	
	APS-C size dedicated lens	(An optional Mount Adaptor (sold separately) is required)
E-mount lens	Lens compatible with 35 mm full- frame format	✓
	APS-C size dedicated lens	/ *

^{*} 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.



2 Select the desired language and then press the center of the 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.

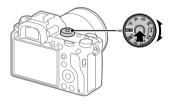
Hint

• To reset the date and time setting, use MENU (page 83).

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



- 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 into the viewfinder or the monitor 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.

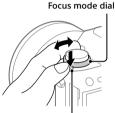
Shooting

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.



Focus mode dial lock release button

- **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.
- (it): 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 20).
- When you set the focus to infinity in the manual focus mode or the direct manual focus mode, make sure that the focus is on a sufficiently distant subject by checking the monitor or the viewfinder.

Auto focus

Focus Area

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

MENU $\rightarrow \Box$ 1(Camera Settings 1) \rightarrow [Focus Area] \rightarrow 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.
- Zone: Select a zone on the monitor on which to focus, and the product will automatically select a focus area.
- [3] **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.
- Heading the left/right sides of the control wheel. You can also move the tracking using the left/right sides of the control wheel. You can also move the tracking using the left/right sides of the control wheel. You can also move the 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.

When focusing on a larger area



When focusing on a smaller area



- When [Focus Area] is set to [Wide] or [Zone], the focusing frame may switch between "When focusing on a larger area" and "When focusing on a smaller area" depending on the subject or situation.
- When you attach an A-mount lens with a Mount Adaptor (LA-EA1 or LA-EA3) (sold separately), the focusing frame for "When focusing on a smaller area" 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 (page 50).

■To track the subject temporarily (Tracking On)

You can temporarily change the setting for [Focus Area] to [Tracking] while you press and hold down the custom key to which you have assigned [Tracking On] in advance. The [Focus Area] setting before you activated [Tracking On] will switch to the equivalent [Tracking] setting.

For example:

[Focus Area] before you activate [Tracking On]	[Focus Area] while [Tracking On] is active
[Wide]	[Tracking: Wide]
[Flexible Spot: S]	[Tracking: Flexible Spot S]
[Expand Flexible Spot]	[Tracking: Expand Flexible Spot]

Hint

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

- [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 **III** (Movie) or **S&Q**, or during movie shooting, [Tracking] cannot be selected as the [Focus Area].

Manual Focus

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

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



Focus mode dial lock release button

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 14).

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.



Focus mode dial lock release button

- 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 → \blacksquare 2 (Camera Settings 2) → [\bowtie 7 Shutter Type] → desired setting.

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

Mechanical Shutter: Shoot with the mechanical shutter only. **Electronic Shutter:** Shoot with the electronic shutter only.

Hint

- In the following situations, set the [Shutter Type] to [Auto] or [Electronic Shutter].
 - 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.

- In rare cases, the shutter sound may be produced when the power is turned off even if the [Shutter Type] is set to [Electronic Shutter]. 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 Shutter].
 - When capturing a standard white color for the custom white balance- [Face Registration]
- The following functions are unavailable when the [Shutter Type] is set to [Electronic Shutter].
 - 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		
		Mechanical Shutter	Electronic Shutter
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*4	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 47).
- *4 The maximum shutter speed is 1/8000 second when performing continuous shooting with the flash.

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 Shutter].
 - Select [Electronic Shutter] 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: Blackoutfree continuous shooting

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

- 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 blackoutfree 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.

- 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.
- When using a lens compatible with Aperture Drive in AF, sound from the aperture drive may be audible during continuous shooting if [Aperture Drive in AF] is set to [Focus Priority].
- 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.)

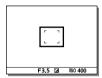
Sets the method for displaying the shutter release timing on the screen during blackout-free shooting.

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

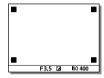
On: Type 1/On: Type 2: Displays a frame around the focusing frame.

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 → \blacksquare 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.

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

□H Continuous Shooting: Hi / □M Continuous Shooting: Mid / □L Continuous Shooting: Lo

	Shutter Type	
	Mechanical Shutter Auto/Electronic Shutte	
Continuous Shooting: Hi 5 images per second at maximum*2		20 images per second at maximum *2*3*4
Continuous Shooting: Mid	5 images per second at maximum*2	10 images per second at maximum*2
Continuous Shooting: Lo	2.5 images per second at maximum	5 images per second at maximum*2

- *1 The value shown is the shooting speed when [Aperture Drive in AF] is set to [Standard]. When [Aperture Drive in AF] is set to [Focus Priority], the speed of continuous shooting may become slower.
- *2 The focus is locked to the setting in the first shot when [Aperture Drive in AF] is set to [Standard] or [Silent Priority], and the F-value is greater than F16.
- *3 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.
- *4 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]

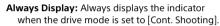
Note

- Continuous shooting is unavailable in the following situations:
 - -[Picture Effect] is set to [Rich-tone Mono.].
 - -[DRO/Auto HDR] is set to [Auto HDR].
- The speed of continuous shooting decreases when you shoot with a flash.

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 \rightarrow \triangle 2 (Camera Settings 2) \rightarrow [Cont. Shoot. Length] \rightarrow desired setting.



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 $\rightarrow \triangleq$ (Setup) \rightarrow [Touch Operation] \rightarrow desired setting.

On: Activates the touch operation.

Off: Deactivates the touch operation.

Touch Panel/Pad

Touch operations when shooting with the monitor are referred to as "touch panel operations," and touch operations when shooting with the viewfinder are referred to as "touch pad operations." You can select whether to activate touch panel operations or touch pad operations.

MENU $\rightarrow \bigoplus$ (Setup) \rightarrow [Touch Panel/Pad] \rightarrow desired setting.

Touch Panel+Pad: Activates both the touch panel operations when shooting with the monitor and touch pad operations when shooting with the viewfinder.

Touch Panel Only: Activates only the touch panel operations when shooting with the monitor.

Touch Pad Only: Activates only the touch pad operations when shooting with the viewfinder.

Touch Focus

You can select a subject on which to focus using touch operations in the still image and movie recording modes. Select MENU $\rightarrow \clubsuit$ (Setup) \rightarrow [Touch Operation] \rightarrow [On] beforehand.

MENU \rightarrow \blacksquare 2 (Camera Settings 2) \rightarrow [Func. of Touch Operation] \rightarrow [Touch Focus].

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 Touch the monitor.
 - When shooting with the monitor, touch the subject to focus.
 - When shooting with the viewfinder, you can move the position of the focus by touching and dragging on the monitor while looking through the viewfinder.



- 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 >x or press the center of the control wheel if shooting with the monitor, and press the center of the control wheel if shooting with the viewfinder.

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

The camera will focus on the touched subject. Spot focus is not available when shooting with the viewfinder.

- Select a [Focus Area] other than [Flexible Spot] or [Expand Flexible Spot].
- ② 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 ***\sigmx** 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.

- The touch focus function is not available in the following situations:
 - When [Focus Mode] is set to [Manual Focus].
 - When using the digital zoom
 - When using the LA-EA2 or LA-EA4

Touch Tracking

You can use touch operations to select a subject you want to track in the still image and movie recording modes. Select MENU $\rightarrow \clubsuit$ (Setup) \rightarrow [Touch Operation] \rightarrow [On] beforehand.

- 1 MENU → ♠2 (Camera Settings 2) → [Func. of Touch Operation] → [Touch Tracking].
- 2 Touch the subject that you want to track on the monitor.

 Tracking will start.
- 3 Press the shutter button halfway down to focus.
 - Press the shutter button all the way down to shoot images.

Hint

To cancel tracking, touch □ x or press the center of the control wheel.

- [Touch Tracking] is unavailable in the following situations:
 - When shooting movies with [**!!** Record Setting] set to [120p]/[100p].
 - When [Focus Mode] is set to [Manual Focus].
 - When using the Smart Zoom, Clear Image Zoom and Digital Zoom
 - When using the LA-EA2 or LA-EA4 Mount Adaptor

Selecting a still image size/image quality

Sets the file format for still images.

MENU → \blacksquare 1(Camera Settings 1) → [\bowtie File Format] → desired setting.

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

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.

JPEG: The image is recorded in the JPEG format.

☑ JPEG Quality

Selects the JPEG image quality when [File Format] is set to [RAW & JPEG] or [JPEG].

MENU → \blacksquare 1(Camera Settings 1) → [\bowtie JPEG Quality] → desired setting.

Extra fine/Fine/Standard: Since the compression rate increases from [Extra fine] to [Fine] to [Standard], the file size decreases in the same order. This allows more files to be recorded on one memory card, but the image quality is lower.

☑ JPEG 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 → \blacksquare 1(Camera Settings 1) → [\bowtie JPEG Image Size] → desired setting.

When [Aspect Ratio] is set to 3:2		
L: 24M 6000×4000 pixels		
M: 10M 3936×2624 pixels		
S: 6.0M 3008×2000 pixels		

When [Aspect Ratio] is set to 16:9		
L: 20M 6000×3376 pixels		
M: 8.7M 3936×2216 pixels		
S: 5.1M 3008×1688 pixels		

When [Aspect Ratio] is set to 1:1		
L:16M 4000×4000 pixels		
M: 6.9M 2624×2624 pixels		
S: 4.0M 2000×2000 pixels		

When recording in the APS-C-equivalent size

When [Aspect Ratio] is set to 3:2		
L:10M 3936×2624 pixels		
M: 6.0M 3008×2000 pixels		
S: 2.6M 1968×1312 pixels		

When [Aspect Ratio] is set to 16:9		
L: 8.7M 3936×2216 pixels		
M: 5.1M 3008×1688 pixels		
S: 2.2M 1968×1112 pixels		

When [Aspect Ratio] is set to 1:1		
L: 6.9M 2624×2624 pixels		
M: 4.0M 2000×2000 pixels		
S: 1.7M 1312×1312 pixels		

Note

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

APS-C/Super 35mm

Sets whether to record in APS-C-equivalent size for still images and in Super 35mm-equivalent size for movies. If you select [On] or [Auto], you can use an APS-C size dedicated lens on this product.

MENU $\rightarrow \blacksquare$ 1(Camera Settings 1) \rightarrow [APS-C/Super 35mm] \rightarrow desired setting.

On: Records in either APS-C-equivalent size or Super 35mm-equivalent size.

Auto: Automatically sets the capture range depending on the lens.

Off: Always captures 35mm full-frame image sensor pictures.

Note

- When you attach an APS-C compatible lens and set [APS-C/Super 35mm] to [Off], shooting may fail.
- When you set [APS-C/Super 35mm] to [On], the angle of view will be the same as when shooting with an APS-C size image sensor.

Angle of view

The angle of view switches to the equivalent of full frame or APS-C/ Super 35mm, depending on the setting for [APS-C/Super 35mm] and the attached lens. The angle of view is also different for still image shooting and movie shooting.

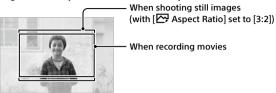
Angle of view equivalent to full frame



The camera shoots with an angle of view equivalent to full frame in the following situations.

- [APS-C/Super 35mm] is set to [Auto], and a full frame shooting-compatible lens is attached.
- [APS-C/Super 35mm] is set to [Off].

Angle of view equivalent to APS-C size/Super 35mm



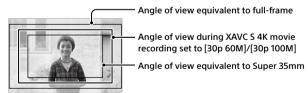
The camera shoots with an angle of view equivalent to APS-C size or Super 35mm in the following situations.

The angle of view becomes approx. 1.5 times the focal length indicated on the lens.

- [APS-C/Super 35mm] is set to [Auto], and an APS-C-format dedicated lens is attached.
- [APS-C/Super 35mm] is set to [On].

Note

• When recording full-frame movies with [由 File Format] set to [XAVC S 4K] and [由 Record Setting] set to [30p 60M] or [30p 100M], the angle of view is equivalent to approx. 1.2 times the focal length indicated on the lens.



Shooting movies

Changing settings for movie recording

III File Format

Selects the movie file format.

MENU → \blacksquare 2 (Camera Settings 2) → [\boxplus File Format] → desired setting.

File Format	Characteristics	
XAVC S 4K	Records movies in 4K resolution (3840×2160).	You can save movies on
XAVC S HD	Records movies in crisper quality than AVCHD with larger amounts of data.	a computer using the PlayMemories Home software.
AVCHD	The AVCHD format has a high degree of compatibility with storage devices other than computers.	You can save movies on a computer or create a disc that supports this format using the PlayMemories Home software.

For details on memory cards that can be used for these formats, refer to page 93.

- When [EI 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.
- If you set [III File Format] to [XAVC S 4K] and shoot movies while the camera is connected to an HDMI device, images will not be displayed on the monitor of the camera.

Ⅲ Record Setting

Selects the frame rate and bit-rate for movie recording.

MENU → \blacksquare 2 (Camera Settings 2) → [\blacksquare 1 Record Setting] → desired setting.

- The higher the bit-rate, the higher the image quality.
- For estimates of the maximum recordable movie time with each recording setting, refer to page 96.

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

間Record Setting	Bit-rate	Description
30p 100M/25p 100M	Approx. 100 Mbps	Records movies in 3840×2160 (30p/25p).
30p 60M/25p 60M	Approx. 60 Mbps	Records movies in 3840×2160 (30p/25p).
24p 100M* Approx. 100 Mbps		Records movies in 3840×2160 (24p).
24p 60M*	Approx. 60 Mbps	Records movies in 3840×2160 (24p).

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

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

間Record Setting	Bit-rate	Description
60p 50M/50p 50M	Approx. 50 Mbps	Records movies in 1920×1080 (60p/50p).
60p 25M/50p 25M	Approx. 25 Mbps	Records movies in 1920×1080 (60p/50p).
30p 50M/25p 50M	Approx. 50 Mbps	Records movies in 1920×1080 (30p/25p).
30p 16M/25p 16M	Approx. 16 Mbps	Records movies in 1920×1080 (30p/25p).
24p 50M*	Approx. 50 Mbps	Records movies in 1920×1080 (24p).
120p100M/100p100M	Approx. 100 Mbps	Records high-speed movies in 1920×1080 (120p/100p). You can record movies in 120 fps or 100 fps. • You can create smoother slow-motion movies by using compatible editing devices.
120p 60M/100p 60M	Approx. 60 Mbps	Records high-speed movies in 1920×1080 (120p/100p). You can record movies in 120 fps or 100 fps. • You can create smoother slow-motion movies by using compatible editing devices.

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

When [♯ File Format] is set to [AVCHD]

間Record Setting	Bit-rate	Description
60i 24M (FX)/ 50i 24M (FX)	24 Mbps at maximum	Records movies in 1920×1080 (60i/50i).
60i 17M (FH)/ 50i 17M (FH)	Approx. 17 Mbps on average	Records movies in 1920×1080 (60i/50i).

- Creating an AVCHD recording disc from movies that were recorded with [60i 24M (FX)]/[50i 24M (FX)] as the [王] Record Setting] takes a long time because the image quality of movies is converted. If you want to store movies without converting them, use a Blu-ray Disc.
- \bullet [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 | 目 File Format] is set to [XAVC S 4K] and | 目 Record Setting] is set to [30p]

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 Imaging Edge Mobile

Imaging Edge Mobile is required to connect the camera and a smartphone. If Imaging Edge Mobile is already installed on your smartphone, be sure to update it to the latest version. For details on Imaging Edge Mobile, refer to the support page (https://www.sony.net/iem/).



- To use the camera's NFC One-touch function, an NFC-enabled 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 Imaging Edge Mobile, you can obtain location information from a connected smartphone (via Bluetooth communication) and record it to captured images.

For details on the operating procedure, refer to the "Help Guide" (page 2) or the following support page.



https://www.sony.net/iem/btg/

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/

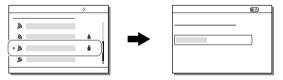


• Basic knowledge of FTP servers is required.

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

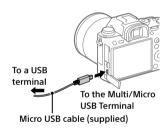
 If a connection is not established, see the wireless access point operating instructions or contact the administrator of the access point.
 To save images to a computer, install PlayMemories Home on your computer.

PlayMemories Home https://www.sony.net/pm/

Connecting the camera to a computer

Connecting to a computer

- 1 Insert a sufficiently 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].
- 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])



Not<u>e</u>

 Do not turn on/off or restart the computer, or wake the computer from sleep mode when a USB connection has been established between the computer and the camera. Doing so may cause a malfunction. Before turning on/ off or restarting the computer, or waking the computer from sleep mode, disconnect the camera from the computer.

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.

- 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.

For details on the software for computers, refer to the following URL: https://www.sony.net/disoft/

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:

https://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.

Imaging Edge

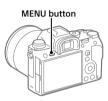
Imaging Edge is a software suite that includes functions such as remote shooting from a computer, and adjusting or developing RAW images recorded with the camera.

For details on Imaging Edge, refer to the following URL. https://www.sony.net/iex/

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.



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 tab.

You can move to the next MENU tab by pressing the Fn button.

Press the MENU button to go back to the previous screen.

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			
File Format	Sets the file format for still images. ([RAW] / [JPEG], etc.)	54	
RAW File Type	Selects the file type for RAW images.	Help Guide	
☑ JPEG Quality	Selects the JPEG image quality for [RAW & JPEG] or [JPEG] under [File Format].	54	
JPEG Image Size	Selects the size of still images. (L / M / S)	55	
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.	56	
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
MR ♠ 1/♠ 2 Recall	Calls up settings pre-registered to [MR 🗗 1/ 🗖 2 Memory].	Help Guide
MR ♠ 1/♠ 2 Memory	Registers the desired modes and camera settings.	Help Guide
MR Select Media	Selects the memory card slot from which settings are recalled or to which settings are registered for M1 through M4.	Help Guide
Reg. Custom 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.)	38
Focus Settings	Configures settings for focusing using the front dial, rear dial, or control wheel.	Help Guide
Focus Area Limit	Limits the types of available focus area settings in advance.	Help Guide

Switch 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
Face/Eye AF Set.	Configures settings such as whether the camera focuses with priority on human faces or eyes.	Help Guide
AF Tracking Sens.	Sets the AF tracking sensitivity for the still image mode.	Help Guide
Aperture Drive in AF	Changes the aperture drive system to prioritize the auto-focusing tracking performance or to prioritize silence.	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 Registration	Sets whether to move the focusing frame to a preassigned position when shooting still images.	Help Guide
Del. Regist. AF Area	Deletes the focusing frame position information that was registered using [AF Area Registration].	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

Circ. of Focus Point	Sets whether to allow the focusing frame to jump from one end to the other when you move the focusing frame.	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 Setting	Sets functions related to ISO sensitivity. ([ISO] / [ISO AUTO Min. SS], etc.)	Help Guide
Metering Mode	Selects the method for measuring brightness. ([Multi] / [Spot], etc.)	Help Guide
Face Priority in Multi Metering	Sets whether the camera measures brightness based on detected faces when [Metering Mode] is set to [Multi].	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
Wireless Flash	Sets whether to shoot with the wireless flash.	Help Guide
Red Eye Reduction	Reduces the red-eye phenomenon when using flash.	Help Guide
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

Shutter AWB Lock	Sets whether to lock the white balance while the shutter button is pressed in the auto white balance mode.	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 Setting	Sets the peaking function, which enhances the outline of in-focus areas when focusing manually.	Help Guide
Shooting Assist		
Face Registration	Registers or changes the person to be given priority when focusing.	Help Guide
Regist. Faces Priority	Detects the registered face with higher priority using [Face Registration].	Help Guide

△2 (Camera Settings 2)

Purple tab

Movie		
 国Exposure Mode	Sets the exposure mode when shooting movies.	Help Guide
S30 Exposure Mode	Sets the exposure mode when shooting slow-motion/quick-motion movies.	Help Guide

耳File Format	Selects the movie file format. ([XAVC S 4K] / [AVCHD], etc.)	58
 国Record Setting	Selects a frame-rate and bit-rate for the movie.	59
S&Q Settings	Changes the settings for slow-motion and quick-motion movie shooting.	Help Guide
Px Proxy Recording	Records low-bit-rate proxy files simultaneously when recording XAVC S movies.	Help Guide
 国AF drive speed	Switches focusing speed when using autofocus in movie mode.	Help Guide
即AF Tracking Sens.	Sets the AF tracking sensitivity for the movie mode.	Help Guide
口Auto Slow Shutter	Sets the function that automatically adjusts the shutter speed following the brightness of the environment in movie mode.	Help Guide
III Initial Focus Mag.	Sets the initial magnification scale when using [Focus Magnifier] 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
即Marker Display	Sets whether to display markers on the monitor when recording movies.	Help Guide
間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.	43
e-Front Curtain Shutter	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 viewfinder and the monitor.	Help Guide
Finder Frame Rate	Sets the frame rate for the viewfinder when shooting still images.	Help Guide

Zebra Setting	Sets the stripes displayed 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.	47
Shoot. Timing Disp.	Sets the method for displaying the shutter release timing on the screen during blackout-free shooting.	47
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.	49
Auto Review	Sets auto review to display the captured image after shooting.	Help Guide
Custom Operation		
Custom Key	Assigns functions to the various keys so that you can perform operations more quickly by pressing the keys when shooting still images.	20
 但Custom Key	Assigns functions to the various keys so that you can perform operations more quickly by pressing the keys when shooting movies.	20
Custom Key	Assigns functions to the keys so that you can perform operations more quickly by pressing the keys when playing back images.	20

Function Menu Set.	Customizes the functions displayed when the Fn (Function) button is pressed.	23
My Dial Settings	Assigns the desired functions to the dials and the control wheel, and register up to three combinations of settings.	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
Av/Tv Rotate	Sets the direction of turning the front or rear dial or the control wheel to adjust the aperture value or shutter speed.	Help Guide
Dial Ev Comp	Sets whether to compensate the exposure with the front or rear dial.	Help Guide
Function Ring (Lens)	Assigns a function to the function ring on the lens.	Help Guide
Func. of Touch Operation	Sets which function is activated by touch operations on the monitor.	51, 53
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 Func.	Sets movies to be transferred to a smartphone, or transfers images to a smartphone.	Help Guide
Send to Computer (Wi-Fi)	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.	63
View on TV	Allows you to view images on a network-enabled TV.	Help Guide
Ctrl w/ Smartphone	Sets the condition for connecting the camera to a smartphone.	Help Guide
PC Remote (Wired LAN)	Operates the camera from a computer or transfers images to a computer by connecting the camera to the computer via a wired LAN.	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
Location 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

Import Root Certificate	Imports a root certificate to the camera.	Help Guide
Reset Network Set.	Resets all the network settings.	Help Guide

▶ (Playback) Blue tab

Protect	Protects recorded images against accidental erasure.	Help Guide
Rotate	Rotates the image.	Help Guide
Delete	Deletes an image.	Help Guide
Rating	Assigns rating to recorded images on a scale from \bigstar to $\star\star\star$.	Help Guide
Rating Set (Custom Key)	Sets the rating (number of \bigstar) that can be selected using the custom key to which [Rating] has been assigned with [\blacktriangleright Custom Key].	Help Guide
Specify Printing	Specifies in advance on the memory card which still images to print out later.	Help Guide
Сору	Allows you to copy images from the memory card in the memory card slot designated in [Select Playback Media] to the memory card in the other slot.	Help Guide
Photo Capture	Captures a chosen scene in a movie to save as a still image.	Help Guide
⊕ Enlarge Image	Enlarges the playback images.	Help Guide
€ Enlarge Initial Mag.	Sets the initial magnification scale when playing back enlarged images.	Help Guide
Enlarge Initial Position	Sets the initial magnification area when playing back enlarged images.	Help Guide
Slide Show	Plays a slide show.	Help Guide

Select Playback Media	Selects the memory card slot of the memory card to be played back.	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 as Group	Sets whether to display images as a group.	Help Guide
Display Rotation	Sets the playback orientation for images shot vertically.	Help Guide
Image Jump Setting	Sets which dial and method to use for jumping between images during playback.	Help Guide

Yellow tab 📤 (Setup)

Monitor Brightness	Adjusts the brightness of the screen.	Help Guide
Viewfinder Bright.	Sets the brightness of the 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
Power Save Start Time	Sets the time intervals to automatically switch to power save mode.	Help Guide
Auto Power 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

	1	
NTSC/PAL Selector ⁻¹	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.	50
Touch Panel/Pad	Selects whether to activate touch panel operation when shooting with the monitor, or touch pad operation when shooting with the viewfinder.	50
Touch Pad Settings	Adjusts settings related to touch pad operation.	Help Guide
Demo Mode	Sets demonstration playback of movies to on or off.	Help Guide
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. * Images will not appear on the monitor of the camera if you record movies while the camera is connected to an HDMI device with [計]File Format] set to [XAVC S 4K].	Help Guide
即4K Output Select	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.	Help Guide
PC Remote Settings	Controls the PC remote shooting settings.	Help Guide
🗖 Language	Selects the language.	33
Date/Time Setup	Sets the date, time, and daylight savings.	33
Area Setting	Sets the location of use.	Help Guide
IPTC Information	Writes IPTC information when recording still images.	Help Guide
Copyright Info	Sets copyright information for still images.	Help Guide
Write Serial Number	Writes the camera's serial number to the Exif data when recording 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
Rec. Media Settings	Sets the method for recording images to two memory card slots.	Help Guide
Select REC Folder	Changes the folder selected for storing still images.	Help Guide
New Folder	Creates a new folder for storing still images.	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

★ (My Menu) Gray tab

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

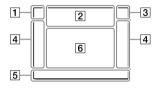
^{*2} Overseas models only.

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.

Icons on the shooting screen

Monitor mode



1 Shooting mode/ Scene recognition



Shooting mode (34)

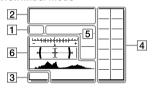


Register number (70)



Scene Recognition icons

Viewfinder mode



2 Camera settings



Memory card status (28, 93)

100

Remaining number of recordable images (94)

11113

Writing data / Number of images left to write

3:2 16:9 1:1

Aspect ratio of still images (69)

24M 20M 16M 10M 8.7M 6.9M 6.0M 5.1M 4.0M 2.6M 2.2M 1.7M

Image size of still images (55)

RAW RAW

RAW recording (compressed/uncompressed)

X.FINE FINE STD

JPEG Quality (54)

XAVCS4K XAVCSHD AVCHD

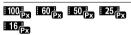
File format of movies (58)



Record setting of movies (59)

120p 60p 60i 30p 24p 100p 50p 50i 25p

Frame rate of movies (59)



Proxy Recording (75)

120fps 60fps 30fps 15fps 8fps 4fps 100fps 50fps 25fps 12fps 6fps 3fps 2fps 1fps

Frame rate for slow/quick motion shooting (75)

APS-C/Super 35mm (56)

4•

Flash charge in progress

VIEW

Setting Effect OFF (77)

D:ON

AF Illuminator (71)

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SteadyShot off/on, Camera shake warning (76)

((♥))♠□ ((♥)) H 8mm

SteadyS. Focal Len./ Camera shake warning (76)

_Տ**⊕**, _Շ**⊕**, _⊅**⊕**,

Smart Zoom / Clear Image Zoom / Digital Zoom (76)

-PC-

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(Wi-Fi) (Wi-Fi)

Connected to Wi-Fi/

* These icons are displayed in Area 6 when shooting with the viewfinder.

LAN LAN

Connected to LAN/Disconnected from LAN

* These icons are displayed in Area 6 when shooting with the viewfinder.



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IPTC

IPTC information writing on (83)

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Bluetooth connection available / Bluetooth connection unavailable

أَم أَم

Connected to smartphone / Not connected to smartphone

P, **P**

Obtaining location information/ Location information cannot be obtained



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222 100%

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JPEG RAW RAW RAW+J RAW+J

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AWB AWB魚 AWB魚 ※ ♠ ▲ ☆ ☆ ※ 1 ※ 0 ※ 1 ※ 1 ※ 2 型 ♣ ► 2 7500K A5 G5

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DER DRO HOR

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Std. Vivid Ntrl Clear Deep Light Port.

Land Sunset Night Autm B/W Sepia

+3+3+3

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Guide display for My Dial

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Bracket indicator

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Spot metering area (72)



Exposure Setting Guide (77)

↑ 1" 1/80 1/80 1/8000 %

Shutter speed indicator

dg F14 28 54 11 22 4g

Aperture indicator

_

Histogram

()[)

Digital level gauge

STBY REC

Movie recording standby/Movie recording in progress

1:00:12

Actual movie recording time (hours: minutes: seconds)



Audio Level Display (75)



REC Control (82)

00:00:00:00

Time code (hours: minutes: seconds: frames) (82)

00 00 00 00

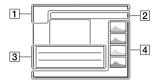
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Icons on the playback screen

Single-image playback display



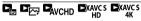
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1 Basic information



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FTP() FTP@ FTPII

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3 Shooting settings



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35mm

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2019 - 1 - 1 10:37PM

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Folder number — File number (83)





Histogram (Luminance/R/G/B)

Specifications

Battery life and number of recordable images

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

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

SD memory cards

Recording format		Supported memory card	
Still image		SD/SDHC/SDXC card	
AVCHD		SD/SDHC/SDXC card (Class 4 or faster, or U1 or faster)	
XAVC S	4K 60 Mbps* HD 50 Mbps or lower* HD 60 Mbps	SDHC/SDXC card (Class 10, or U1 or faster)	
	4K 100 Mbps* HD 100 Mbps	SDHC/SDXC card (U3)	

^{*} Including when recording proxy movies at the same time

Memory Stick media

	Recording format	Supported memory card	
Still image		Memory Stick PRO Duo/ Memory Stick PRO-HG Duo	
AVCHD		Memory Stick PRO Duo (Mark 2)/ Memory Stick PRO-HG Duo	
XAVC S	4K 60 Mbps* HD 50 Mbps or lower* HD 60 Mbps	Memory Stick PRO-HG Duo	
	4K 100 Mbps* HD 100 Mbps	_	

^{*} Including when recording proxy movies at the same time

Note

- Use the slot 1 when you are using a UHS-II memory card. Also, select MENU →
 (Setup) → [Rec. Media Settings] → [Prioritize Rec. Media] → [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] under [Rec. Media Settings] is set to [Simult. (自動)] or [Simult. (四列)]

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

 Charge the battery pack sufficiently before attempting to recover the database files on the memory card.

Number of recordable images

When you insert a memory card into the camera and turn the camera 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.

[JPEG Image Size]: [L: 24M]

[Aspect Ratio]: [3:2]*1

(Units: Images)

☑ JPEG Quality/ ☑ File Format	8 GB	32 GB	64 GB	256 GB
Standard	1100	4550	9000	36000
Fine	790	3200	6300	25000
Extra fine	430	1700	3500	14000
RAW & JPEG (Compressed RAW)*2	215	870	1700	6900
RAW (Compressed RAW)	295	1200	2400	9600
RAW & JPEG (Uncompressed RAW)*2	125	510	1000	4100
RAW (Uncompressed RAW)	150	610	1200	4950

^{*1} When [Aspect Ratio] is set to other than [3:2], you can record more images than the numbers shown in the table (except when [RAW] is selected).

Note

- Even if the number of recordable images is higher than 9999 images, "9999" will appear.
- The numbers shown are when using a Sony memory card.

^{*2 [} JPEG Quality] when [RAW & JPEG] is selected: [Fine]

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 [HH] File Format] is set to [XAVC S 4K] and [XAVC S HD] are recording times when shooting with Proxy Recording] set to [Off].

(h (hour), min (minute))

File Format	Record Setting	8 GB	32 GB	64 GB	256 GB
XAVC S 4K	30p 100M/ 25p 100M	8 min	35 min	1 h 15 min	5 h 10 min
	30p 60M/ 25p 60M	10 min	1 h	2 h 5 min	8 h 25 min
	24p 100M*	8 min	35 min	1 h 15 min	5 h 10 min
	24p 60M*	10 min	1 h	2 h 5 min	8 h 25 min
XAVC S HD	120p 100M/ 100p 100M	8 min	35 min	1 h 15 min	5 h 10 min
	120p 60M/ 100p 60M	10 min	1 h	2 h 5 min	8 h 25 min
	60p 50M/ 50p 50M	15 min	1 h 10 min	2 h 30 min	10 h 10 min
	60p 25M/ 50p 25M	30 min	2 h 20 min	4 h 45 min	19 h 30 min
	30p 50M/ 25p 50M	15 min	1 h 10 min	2 h 30 min	10 h 10 min
	30p 16M/ 25p 16M	50 min	3 h 35 min	7 h 20 min	29 h 45 min
	24p 50M*	15 min	1 h 10 min	2 h 30 min	10 h 10 min
AVCHD	60i 24M (FX)/ 50i 24M (FX)	40 min	2 h 55 min	6 h	24 h 15 min
	60i 17M (FH)/ 50i 17M (FH)	55 min	4 h 5 min	8 h 15 min	33 h 15 min

^{*} 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 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 [30] Record Setting] is set to [60p/50p] and [30] 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. 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 Power OFF Temp.]: [Standard]

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

4K: XAVC S 4K (24p 60M/25p 60M, when the camera is 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.
- If the [1] icon appears, the temperature of the camera has risen.
- 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 [耳 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.

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]

In-camera sensor shift image stabilization system

[Auto focus system]

Detection system: Phase detection system/Contrast detection system Sensitivity Range: –3 EV to +20 EV (at ISO 100 equivalent, F2.0)

[Electronic viewfinder]

Total number of dots: 3 686 400 dots 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 Diopter Adjustment: -4.0 m⁻¹ to +3.0 m⁻¹

[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) ISO sensitivity (Recommended exposure index): Still images: ISO 100 to ISO 51 200 (Extended ISO: Minimum ISO 50,

exposure index): Still images: ISO 100 to ISO 51 200 (Extended ISO: Minimum ISO 50, maximum ISO 204 800) Movies: ISO 100 to ISO 51 200 equivalent (Extended ISO: Minimum ISO 100, maximum ISO 102 400)

[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

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

Flash sync speed: 1/250 second (when using a flash manufactured by Sony) [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.

[Recording media]

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)

[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: Ø 3.5 mm Stereo mini jack Ø 3.5 mm Stereo mini jack LAN terminal

(Flash sync) terminal

[General]

Model No. WW361847 Rated input: 7.2 V _____ 4.1 W Operating temperature: 0 to 40°C (32 to 104°F) Storage temperature: -20 to 55°C (-4 to 131°F) Dimensions (W/H/D) (Approx.): 126.9 × 95.6 × 73.7 mm 126.9 × 95.6 × 63.0 mm (from grip to monitor) $5 \times 37/8 \times 3$ in. $5 \times 37/8 \times 21/2$ in.

(from grip to monitor)

Mass (Approx.): 673 g (1 lb 7.7 oz) (including battery pack, SD Card)

[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

GB

Battery charger BC-QZ1

Rated input:

100 - 240 V , 50/60 Hz, 0.38 A Rated output: 8.4 V , 1.6 A

AC Adaptor AC-UUD12/AC-UUE12 Rated input:

100 - 240 V **○**, 50/60 Hz, 0.2 A Rated output: 5 V ■ 1.5 A

Rechargeable battery pack NP-FZ100

Rated voltage: 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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