Canon

PUB. DIE-0506-001

ME20F-SH

Firmware ver. 1.0.5.1.00

ME200S-SH

Firmware version 1.0.3.1.00

Multi-Purpose Camera

Instruction Manual

Important Usage Instructions

WARNING
TO REDUCE THE RISK OF ELECTRIC SHOCK AND TO REDUCE ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

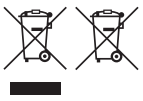
COPYRIGHT WARNING
Unauthorized recording of copyrighted materials may infringe on the rights of copyright owners and be contrary to copyright laws.

FCC NOTICE
Multi-Purpose Camera, ME20F-SH / ME200S-SH Systems.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

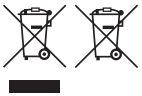
Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

Only for European Union and EEA (Norway, Iceland and Liechtenstein)



These symbols indicate that this product is not to be disposed of with your household waste, according to the WEEE Directive (2012/19/EU), the Battery Directive (2006/66/EC) and/or national legislation implementing those Directives.
If a chemical symbol is printed beneath the symbol shown above, in accordance with the Battery Directive, this indicates that a heavy metal (Hg = Mercury, Cd = Cadmium, Pb = Lead) is present in this battery or accumulator at a concentration above an applicable threshold specified in the Battery Directive.
This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (EEE) and batteries and accumulators. Improper handling of this type of waste could have a possible impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. Your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.
For more information about the recycling of this product, please contact your local city office, waste authority, approved scheme or your household waste disposal service or visit www.canon-europe.com/weee, or www.canon-europe.com/battery.

Only for the United Kingdom



These symbols indicate that this product is not to be disposed of with your household waste, according to the UK Waste Electrical and Electronic Equipment Regulations and the UK Batteries and Accumulators Regulations. If a chemical symbol is printed beneath the symbol shown above, in accordance with the UK Batteries and Accumulators Regulations, this indicates that a heavy metal (Hg = Mercury, Cd = Cadmium, Pb = Lead) is present in this battery or accumulator at a concentration above an applicable threshold specified in the UK Batteries and Accumulators Regulations.

This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (EEE) and batteries and accumulators. Improper handling of this type of waste could have a possible impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. Your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.

For more information about the recycling of this product, please contact your local city office, waste authority, approved scheme or your household waste disposal service or visit www.canon-europe.com/sustainability/approach/.

CAN ICES-3 (A)/NMB-3(A)

WARNING

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Trademark Acknowledgements

- (microSD) microSD, (microSDHC) microSDHC and (microSDXC) microSDXC Logos are trademarks of SD-3C, LLC.
- HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.
- Other names and products not mentioned above may be trademarks or registered trademarks of their respective companies.

Highlights of the ME20F-SH

The Canon ME20F-SH Multi-Purpose Camera boasts numerous features that allow it to excel in a variety of situations. The following highlights some of the ways that this camera can meet your needs.

HD Video

High-sensitivity 35mm full-frame CMOS sensor and DIGIC DV 4 image processor

The camera is equipped with a high-sensitivity 35mm full-frame CMOS sensor that features improved noise reduction circuitry and pixels measuring a relatively large 19 µm* square in size. Combined with the DIGIC DV 4 image processor, the camera is capable of shooting video in dim environments (minimum subject illumination: 0.0005 lux**) with little video noise.

* Micrometer. Also referred to as a micron, it is one millionth of a meter.

** Under the following conditions: color, no light accumulation, f/1.2, shutter speed 1/30, 50 IRE, maximum gain 75 dB (ISO equivalent of 4 million).

Interchangeable lenses

Enjoy the versatility of using interchangeable lenses to achieve the look you want. The camera is equipped with an EF lens mount, which allows you to use a variety of high-quality lenses (EF Lens, EF-S Lens or EF Cinema Lens series). For more details on compatible lenses, visit your local Canon website.

HD video output and versatile video configuration

The camera will output HD video from the 3G/HD-SDI terminals and HDMI OUT terminal to be recorded with an external video recorder. Before you shoot, you can select the system frequency (50.00 Hz or 59.94 Hz), resolution and frame rate. These settings collectively comprise the video configuration (📖 32) and you can select a configuration that best suits your needs.

Adaptability to a wide range of lighting conditions

Although the camera excels in low-light environments, thanks to the aforementioned technology behind the CMOS sensor, it is well-equipped to shoot in other lighting conditions. When the shooting environment is too bright, you can employ the ND filter (📖 41), which is available in two density levels, to help manage the brightness. Oppositely, you can shoot in dark environments by using infrared mode (📖 51).

Operability and Customization

Enhanced automatic functions

The camera is equipped with various automatic functions to help achieve the picture you desire. These include the following: automatic exposure, which is controlled through the linked settings of the aperture, gain, shutter speed and ND filter; push auto iris (📖 37) to temporarily adjust the aperture automatically; automatic white balance (📖 42) to let the camera continuously adjust the optimal white balance setting; and one-shot AF (📖 46) to have the camera focus automatically one time after you press a button.

Remote operation

You can connect the optional RC-V100 Remote Controller (📖 52) to the camera to control it from a distance. The remote controller allows you to control many of the camera's settings.

Assignable buttons

You can assign often-used functions to assignable buttons (📖 54) so that you can call up those functions with the press of a single button.

Custom picture settings and Canon Log gamma

With custom picture settings (📖 56), you can enjoy unparalleled image control to deliver the look you want by adjusting parameters, such as gamma and sharpness. You can even select the Canon Log and Wide DR gamma settings found on Canon Cinema EOS cameras.

Highlights of the ME200S-SH

The Canon ME200S-SH Multi-Purpose Camera boasts numerous features that allow it to excel in a variety of situations. The following highlights some of the ways that this camera can meet your needs.

Video Quality and High Sensitivity

High-sensitivity Super 35mm CMOS sensor

The camera is equipped with a high-sensitivity Super 35mm CMOS sensor. The sensor's excellent low-noise performance combined with the DIGIC DV 4 image processor will allow you to get impressive results even when shooting in low-light situations.

Flexibility and Power of Expression

Interchangeable lenses

Enjoy the versatility of using interchangeable lenses to achieve the look you want. The camera is equipped with an EF lens mount, which allows you to use a variety of high-quality lenses (EF Lens, EF-S Lens or EF Cinema Lens series). For more details on compatible lenses, visit your local Canon website.

HD video output and versatile video configuration

The camera will output HD video from the 3G/HD-SDI terminals and HDMI OUT terminal to be recorded with an external video recorder. Before you shoot, you can select the system frequency (50.00 Hz or 59.94 Hz), resolution and frame rate. These settings collectively comprise the video configuration (📖 32) and you can select a configuration that best suits your needs.

Operability and Customization

Enhanced automatic functions

The camera is equipped with various automatic functions to help achieve the picture you desire. These include the following: automatic exposure, which is controlled through the linked settings of the aperture, gain, shutter speed and ND filter; push auto iris (📖 37) to temporarily adjust the aperture automatically; and automatic white balance (📖 42) to let the camera continuously adjust the optimal white balance setting. The camera also features Dual Pixel CMOS AF technology and offers two convenient autofocus functions: Continuous AF (📖 48) to have the camera keep focusing automatically on the subject at the center of the screen, and one-shot AF (📖 46) to use the autofocus only one time, when you press a button.

Remote operation

You can connect the optional RC-V100 Remote Controller (📖 52) to the camera to control it from a distance. The remote controller allows you to control many of the camera's settings.

Assignable buttons

You can assign often-used functions to assignable buttons (📖 54) so that you can call up those functions with the press of a single button.

Custom picture settings and Canon Log gamma

With custom picture settings (📖 56), you can enjoy unparalleled image control to deliver the look you want by adjusting parameters, such as gamma and sharpness. You can even select the Canon Log and Wide DR gamma settings found on Canon Cinema EOS cameras.

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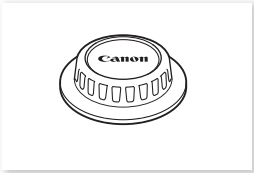
1 Introduction

Introduction

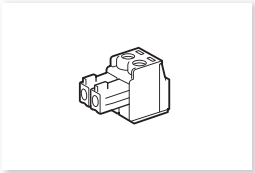
Thank you for purchasing the Canon ME20F-SH / ME200S-SH. Please read this manual carefully before you use the camera and retain it for future reference.

Supplied Accessories

The following accessories are supplied with the camera.



Body Cap*



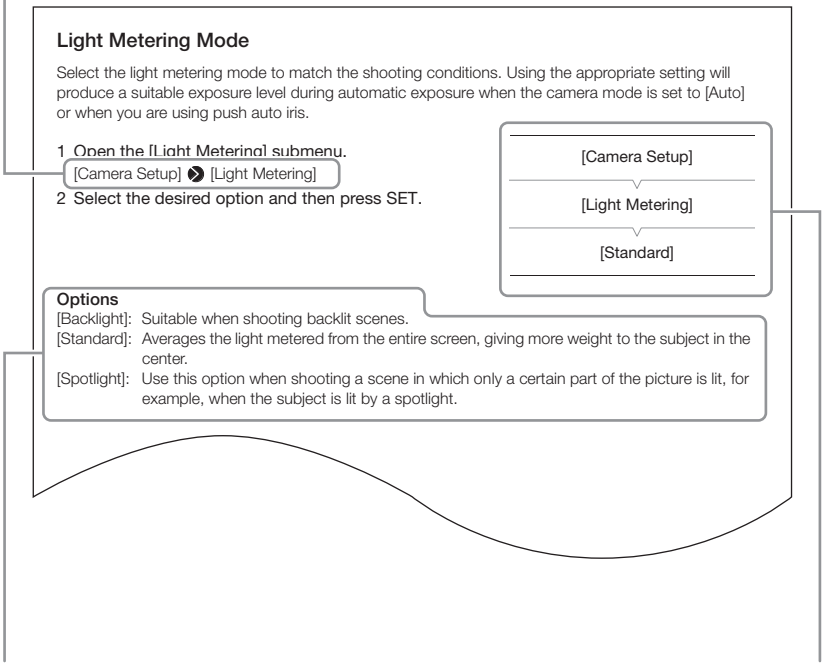
Power Connector

* Comes pre-attached to the camera.

Conventions Used in this Manual

- IMPORTANT: Precautions related to the camera's operation.
- NOTES: Additional topics that complement the basic operating procedures.
- : Reference page number.
- 200S 20F : Information that applies, respectively, only to the ME200S-SH or the ME20F-SH camera.
- The following terms are used in this manual.
  "Screen" refers to the screen of an external monitor connected to the camera.
  "Shooting screen" refers to the screen in which the shooting image and onscreen displays appear. Note that onscreen displays will appear only with the video signal output from the camera's 3G/HD-SDI 1 / MONITOR terminal or HDMI OUT terminal, not with the video signal output from the 3G/HD-SDI 2 terminal.
- Some screenshots have been altered to make them easier to read.
- Illustrations in the manual show the Canon ME200S-SH camera with a Canon EF 70-200mm f/2.8L IS II USM lens or Canon CN7x17 KAS S/E1 lens attached. For simplicity's sake, the lens's tripod mount is not displayed in the illustrations.

The ❯ arrow is used to abbreviate menu selections. For a detailed explanation on how to use the menu, refer to *Using the Menu* (📖 21). For a concise summary of all available menu options and settings, refer to *Menu Options* (📖 67).



Light Metering Mode

Select the light metering mode to match the shooting conditions. Using the appropriate setting will produce a suitable exposure level during automatic exposure when the camera mode is set to [Auto] or when you are using push auto iris.

1 Open the [Light Metering] submenu.
[Camera Setup] ❯ [Light Metering]
2 Select the desired option and then press SET.

[Camera Setup]
[Light Metering]
[Standard]

Options
[Backlight]: Suitable when shooting backlit scenes.
[Standard]: Averages the light metered from the entire screen, giving more weight to the subject in the center.
[Spotlight]: Use this option when shooting a scene in which only a certain part of the picture is lit, for example, when the subject is lit by a spotlight.

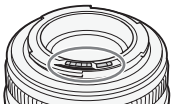
When a procedure requires selecting an option, the available options are listed within or after the procedure. Brackets [ ] are used to refer to menu options as they are displayed on screen.

When a function requires the use of the menu, the quick reference shows the submenus and, when applicable, the default setting for the menu item. The example illustration indicates that you can find the function by selecting the [Camera Setup] menu and then the [Light Metering] menu item.

Safety and Handling Precautions

Be sure to observe the following precautions to ensure maximum performance.

- Do not use, store or leave the camera in places subject to high temperatures (60 °C (140 °F) or higher) or the inside of a car parked under direct sunlight.
- Do not use the camera near strong electromagnetic fields such as near powerful magnets and motors, MRI machines or high-voltage power lines. Using the camera in such places may cause anomalies in the video, or audio or video noise to appear.
- Do not use or store the camera in dusty or sandy places. The camera is not waterproof – avoid also water, mud or salt. If any of the above should get into the camera it may damage the camera and/or the lens. Consult a Canon Service Center as soon as possible.
- Be careful to avoid dust and dirt particles accumulating on the lens or entering the camera. When you finish using the camera, make sure to attach the body cap to the lens mount and the lens cap and dust cap to the lens.
- Have the cooling fan replaced after the [Total] hour meter displayed in the [Other Functions] ❯ [Reset Hour Meter] submenu reaches approximately 30,000 hours. Consult a Canon Service Center to have it replaced.
- Do not point the camera toward an intense light source, such as the sun on a sunny day or an intense artificial light source. Doing so may damage the image sensor or the camera's internal components. Be careful especially when using a tripod. When you are not using the camera, make sure to attach the lens cap to the lens.
- Be careful of heat generated by lighting equipment.
- Do not disassemble the camera. If the camera does not function properly, consult qualified service personnel.
- Do not touch the lens contacts on the lens mount. Dirty contacts may cause a poor contact between the camera and the lens resulting in incorrect operation of the camera. After removing the lens, make sure to attach the body cap to the lens mount and the lens cap and dust cap to the lens.



- Make sure to turn off the camera before disconnecting a power cable.
- Handle the camera with care. Do not subject the camera to shocks or vibration as this may cause damage.
- **Long-term storage**: If you do not intend to use the camera for a long time, store it in a place free of dust, in low humidity, and at temperatures not higher than 30 °C (86 °F).

Before Using the Camera

Note the following before using the camera.

Privacy and Publicity Rights

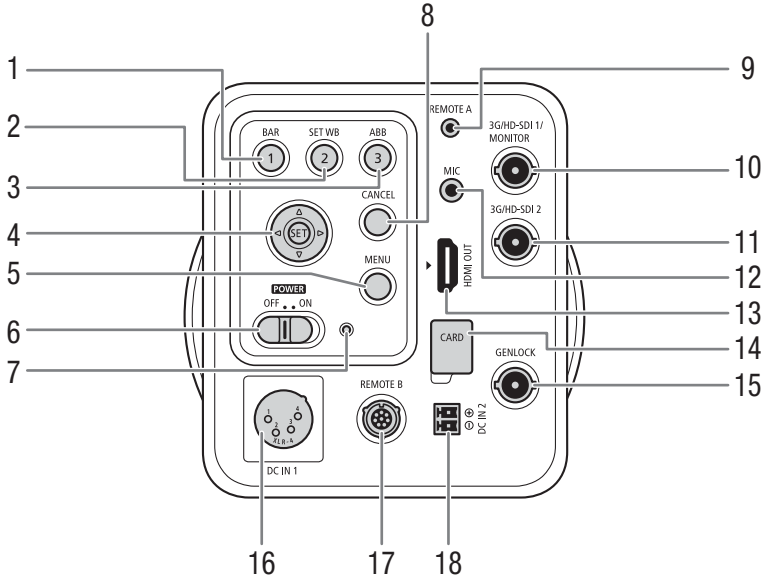
When using the camera (for video or audio recording), it is the full responsibility of the user to avoid any violation of privacy or publicity rights. For example, obtain consent to install the camera in advance if specific buildings or rooms are to be monitored. Canon shall have no liability whatsoever in this regard.

Legal Notice

In some cases camera monitoring may be prohibited by law or regulation, the details of which differ by country or region. Before using the camera, check the laws and regulations of the country or region where the camera is to be used.

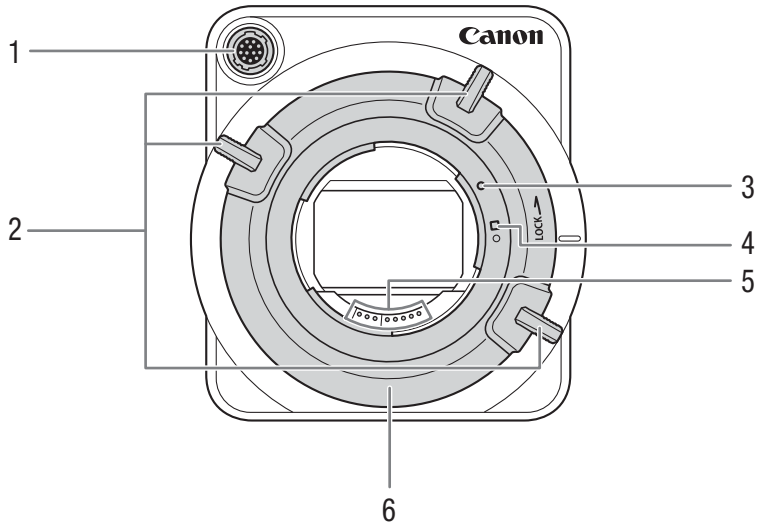
Names of Parts

Back view



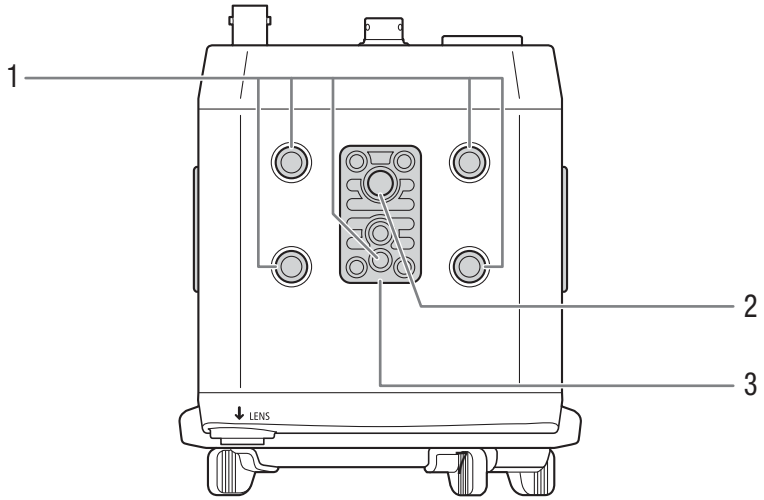
1 BAR (color bars) button (📖 29)/ Assignable button 1 (📖 54)
2 SET WB (custom white balance) button (📖 43)/Assignable button 2 (📖 54)
3 ABB (automatic black balance) button (📖 23)/Assignable button 3 (📖 54)
4 Joystick (📖 21)
5 MENU button (📖 21)
6 **POWER** switch (📖 18)
7 **POWER** indicator (📖 18)
8 CANCEL button (📖 21)
9 REMOTE A (remote control) terminal (📖 52)
For connecting to the optional RC-V100 Remote Controller's REMOTE A terminal.
10 3G/HD-SDI 1 / MONITOR terminal (📖 19, 63)
11 3G/HD-SDI 2 terminal (📖 19, 63)
12 MIC (microphone) terminal (📖 66)
13 HDMI OUT terminal (📖 19, 63)
14 Memory card slot cover (for microSD cards)
Used only for firmware updates.
15 GENLOCK terminal (📖 65)
16 DC IN 1 terminal (📖 16)
17 REMOTE B (remote control) terminal (📖 52)
For connecting to the optional RC-V100 Remote Controller's REMOTE B terminal.
18 DC IN 2 terminal (📖 17)

Front view



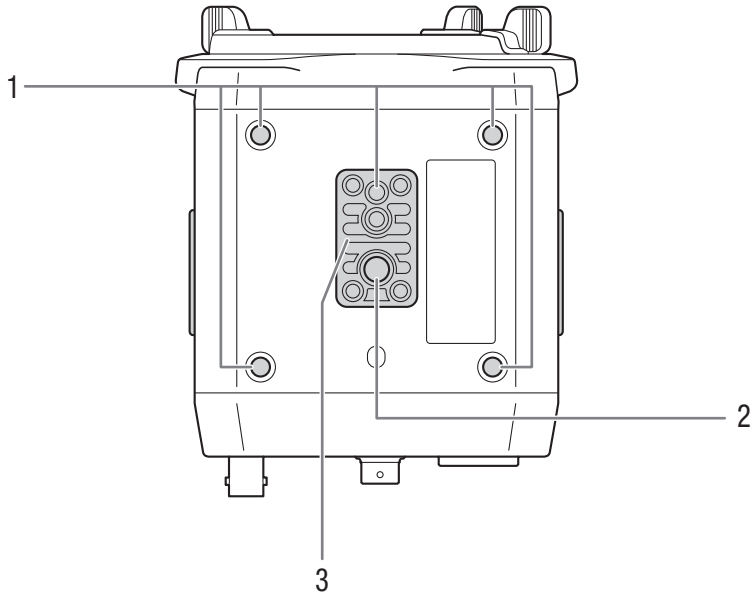
1 LENS terminal (📖 24)
2 Lens mount handle (📖 24)
3 EF lens mount index (📖 24)
4 EF-S lens mount index (📖 24)
5 EF lens contacts (📖 24)
6 EF lens mount (📖 24)

Top view



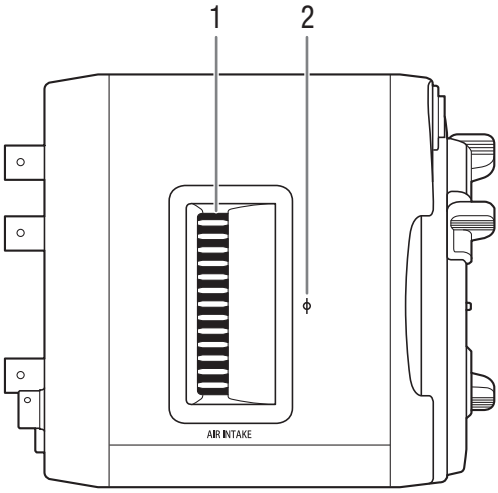
1 Socket for 0.64 cm (1/4") screws
2 Socket for 0.95 cm (3/8") screws (27)
3 TB-1 Tripod Adapter Base for tripods with 0.95 cm (3/8") screws (27)

Bottom view



1 Socket for 0.64 cm (1/4") screws
2 Socket for 0.95 cm (3/8") screws (27)
3 TB-1 Tripod Adapter Base for tripods with 0.95 cm (3/8") screws (27)

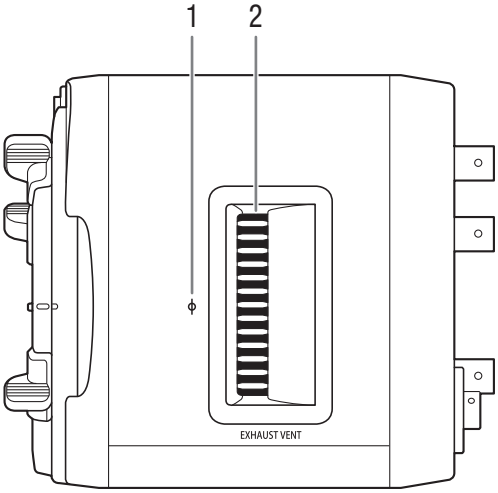
Right side view



1 Air intake vent (72)

2 ϕ Focal plane mark

Left side view

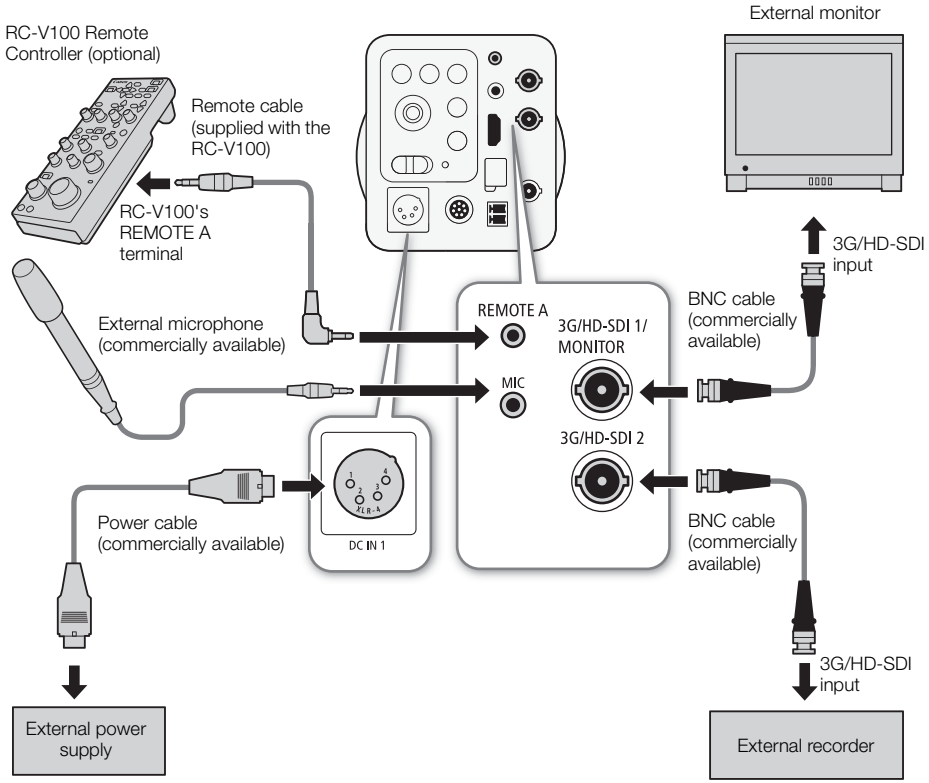


1 ϕ Focal plane mark

2 Exhaust ventilation outlet (72)

Example Configuration

The following example configuration illustrates how to connect the camera to external devices such as a monitor (19) or video recorder (63).



NOTES

- If you plan on connecting the optional RC-V100 Remote Controller to the camera using the optional RR-10 or RR-100 8-pin Remote Cable, check the serial number of the RC-V100. If the serial number starts with "01 xxxx" (where xxxx represents other digits), you will need to update the remote controller's firmware. Canon will perform this feature upgrade, and requires that the remote controller be sent to an accredited Canon Service Center. Shipping and handling charges may apply. Contact a Canon Customer Support Center for details.
- When connecting the optional RC-V100 Remote Controller to the camera, make sure that the remote controller's terminal selection switch is set to match the terminal to be used on the camera.

2 Preparations

Preparing the Power Supply

You can power the camera using a commercially available external power supply connected to the DC IN 1 terminal (via a commercially available power cable with a female 4-pin XLR connector) or the DC IN 2 terminal (via a commercially available power cable, using the supplied power connector).

For the USA and Canada only
The external power supply and power cable must conform to the following specifications and be certified to meet safety standards set by UL, CSA or similar organization.
The power supply should also comply with IEC/UL60950-1 (SELV/LPS) standards.

External power supply (commercially available)
Power supply (output): 11 to 17 V DC
Current (output): 3 A or higher

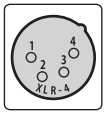
Power cable (commercially available)
Power cable rating: 3 A or higher (current-carrying capacity) / 30 V DC (rated)

Using the DC IN 1 Terminal

Refer to the following terminal configuration when selecting a power cable.

DC IN 1 terminal configuration

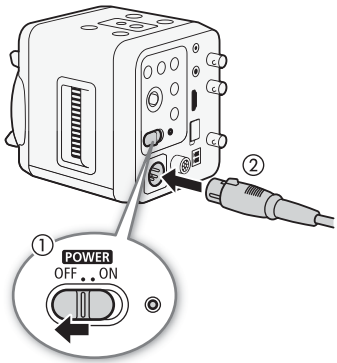
Pin	Signal
1	Ground
2	Unused
3	Unused
4	11 to 17 V DC



DC IN 1

Terminal type: 4-pin XLR (male connector)

1 Set the **POWER** switch to OFF.
2 Connect the 4-pin XLR connector to the DC IN 1 terminal.



Using the DC IN 2 Terminal

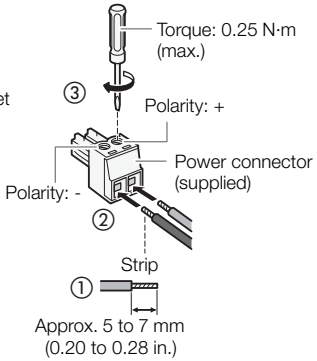
Follow this procedure to prepare a power cable using the supplied power connector and power the camera using the DC IN 2 terminal.

DC IN 2 terminal configuration

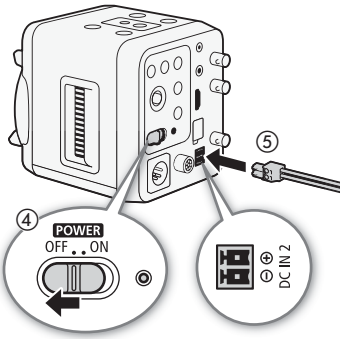
Polarity	Signal
+	11 to 17 V DC
-	Ground



Terminal type: 2-pin socket (male connector)



1 Strip the insulation from the tips of the power cable wires.
   - For reference only: The wire gauge of power cables that can be used is AWG 24 to 16.
2 Insert the tips of the wires into the supplied power connector as shown in the illustration.
   - Make sure to connect the wires to match the polarity indicators on the DC IN 2 terminal.
3 Tighten the screws of the supplied power connector to securely attach the wires.
   - Set a tightening torque of no more than 0.25 N·m.
4 Set the **POWER** switch to OFF.
5 Insert the power connector into the DC IN 2 terminal.



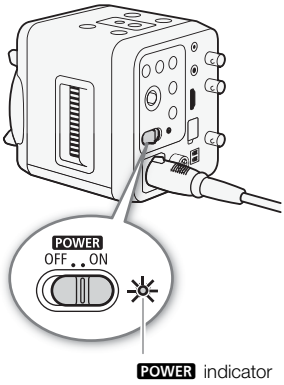
IMPORTANT

- Make sure to use an external power supply that meets the standards of the country/region where it is used. Furthermore, make sure the external power supply is a double-insulated device and is insulated for commercial power use.

Turning the Camera On and Off

Set the **POWER** switch to ON to turn on the camera and set it to OFF to turn off the camera.

- The **POWER** indicator will illuminate in green while the camera is on. However, you can use the [Other Functions] ❯ [Power LED] setting to turn the indicator off.

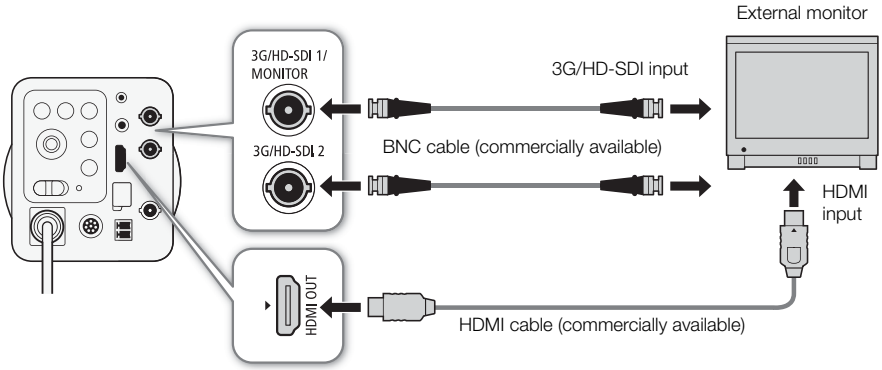


Connecting to an External Monitor

Connect the camera to an external monitor using the 3G/HD-SDI 1 / MONITOR terminal, 3G/HD-SDI 2 terminal or HDMI OUT terminal. Use the terminal on the camera that matches the one you wish to use on the monitor.
Video and audio will be output as a digital signal from the aforementioned terminals.

Connection Diagram

Refer to the following connection diagram. When connecting the camera using the 3G/HD-SDI 1 / MONITOR terminal or 3G/HD-SDI 2 terminal, use a commercially available BNC cable; when using the HDMI OUT terminal, use a commercially available HDMI cable.

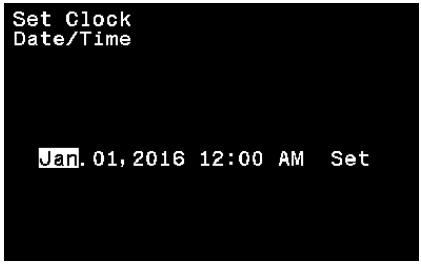


NOTES

- When the camera's video output does not appear on the external monitor's screen:
  - The [Other Functions] ❯ [System Frequency] or [Frame Rate (MON.)], or [Audio/Video Setup] ❯ [3G-SDI Mapping] settings may not be set correctly. Change the system frequency and frame rate using assignable buttons (📖 74) and check the settings.
    If you have an external monitor with an HDMI terminal, you can also try connecting the camera using the HDMI OUT terminal to check the settings.
- For external monitors that support only 480P or 576P input, connect the camera using the HDMI OUT terminal.
- When the output signal is 480P or 576P, onscreen displays will not be superimposed on the video signal.
- Onscreen displays will not be superimposed on the video signal output from the 3G/HD-SDI 2 terminal. To output onscreen displays, use the 3G/HD-SDI 1 / MONITOR terminal or HDMI OUT terminal.

Date and Time Settings

You will need to set the date and time of the camera before you can start using it. When the camera's clock is not set, the [Date/Time] screen will appear automatically with the first field selected (month or day, depending on the country/region of purchase).



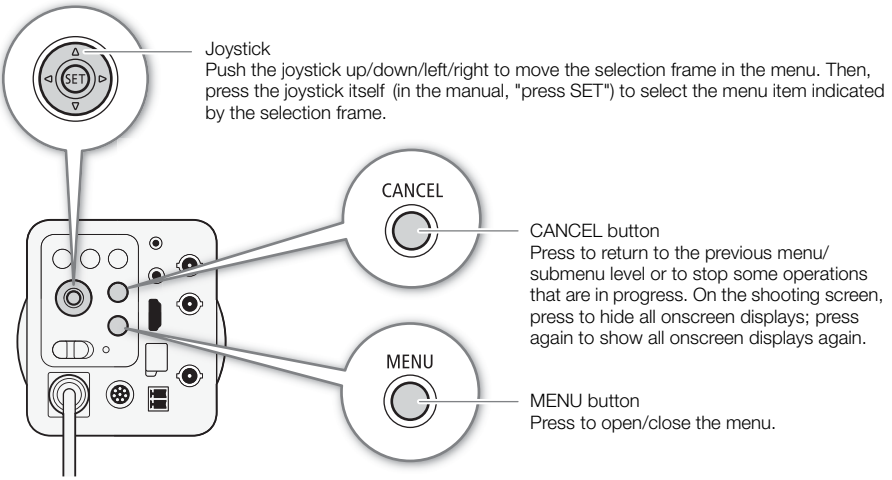
1 Push the joystick up/down to change the month/day then press SET (press the joystick itself) to move to the next field.
   - To move to the next field you can also push the joystick right.
2 Change the rest of the fields in the same way.
3 Select [Set] and then press SET to start the clock and close the screen.

NOTES

- With the following settings, you can change the time zone, date and time also after the initial setup. You can also change the date format and clock format (12 or 24 hours).
  - [Other Functions] ❯ [Time Zone]
  - [Other Functions] ❯ [Set Clock] ❯ [Date/Time] and [Date Format]
- While a recording command is being output to an external recorder (63), you cannot change the date/time or time zone.
- When the built-in rechargeable lithium battery is exhausted, the date and time setting may be lost. In such case, recharge the built-in lithium battery (75) and set the time zone, date and time again. Similarly, if the camera's settings have been reset, you will need to perform the setup again.
- The time indicated on the screen is approximate.
- You can display the date/time on the shooting screen with the [Other Functions] ❯ [Custom Display] ❯ [Date/Time] setting.

Using the Menu

Many of the camera's functions can be adjusted from the menu that opens after pressing the MENU button. For details about the available menu options and settings, refer to *Menu Options* (67).



Joystick
Push the joystick up/down/left/right to move the selection frame in the menu. Then, press the joystick itself (in the manual, "press SET") to select the menu item indicated by the selection frame.

CANCEL button
Press to return to the previous menu/ submenu level or to stop some operations that are in progress. On the shooting screen, press to hide all onscreen displays; press again to show all onscreen displays again.

MENU button
Press to open/close the menu.

Selecting an Option from the Menu

The following is a step-by-step explanation of how to select an option from the menu. In the procedures throughout the rest of this manual, opening and closing the menu is assumed and not included in the procedure.

1 Press the MENU button.
- The menu opens with the orange selection frame indicating the menu item that was selected the previous time the menu was closed (unless the camera was turned off).

2 Push the joystick up/down to select the desired submenu.

3 Push the joystick right or press SET.
- The selection frame will appear on a menu item in the submenu.
- Press the CANCEL button or push the joystick left to return to the previous submenu. For some submenus, you can alternatively select [<].

4 Push the joystick up/down to select the desired menu item.
- If a submenu contains many items, push the joystick up/down to scroll up/down and see other menu items.
- A [>] next to a menu item indicates another submenu. Repeat steps 3 and 4.

5 Push the joystick right or press SET.
- The selection frame will appear on a setting option.
- Press the CANCEL button to return to the previous submenu.

6 Push the joystick up/down to select the desired setting option and then press SET.
- Depending on the menu item, additional selections may be necessary.

7 Press the MENU button to close the menu.
- Alternatively, if the top-level of the menu (with [Camera Setup], [Custom Picture], etc.) is displayed, you can select [CLOSE].

NOTES
- Unavailable items may appear grayed out.
- Pressing the MENU button at any time closes the menu (except for the [Other Functions] ❯ [Camera Name] setting screen).
- When an optional RC-V100 Remote Controller is connected to the camera, you can use the remote controller's up/down/left/right/SET buttons in the same way as the camera's joystick. Pressing the SET button is equivalent to pressing the joystick on the camera. Similarly, pressing the MENU or CANCEL button is equivalent to pressing the MENU or CANCEL button on the camera, respectively.

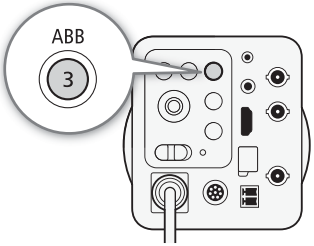
Preparing the Camera

This section outlines the basic preparations for the camera.

Adjusting the Black Balance

The first time you use the camera or if there is a noticeable change in the blacks of the video signal (such as when ambient temperature changes considerably), you can have the camera adjust the black balance automatically.

1 Set the POWER switch to OFF and prepare the camera.
   - **When using a compatible EF Cinema lens (📖 80)**: Attach the lens (📖 24).
     When using other lenses: Remove the lens if one is attached to the camera, and attach the body cap to the lens mount.



2 Set the POWER switch to ON.

3 Press the ABB button.
   - Alternatively, you can use the [Camera Setup] ❯ [ABB] setting.

4 Select [OK] and then press SET.
   - The automatic black balance procedure will start. It will take approximately 40 seconds when the frame rate is set to 23.98P.

5 When the message [Process completed successfully.] appears, press SET.
   - If the sensor is not completely shielded from light, [ABB error] will appear on the screen. Press SET and repeat the procedure from the beginning.

ⓘ NOTES

- Adjusting the black balance is necessary in the following cases:
  - After a long period of not using the camera.
  - After sudden or extreme changes in ambient temperature.
  - After resetting the camera's settings using either option in the [Other Functions] ❯ [Reset] setting.
- During the adjustment of the black balance, you may notice some irregular displays appear on the screen. This is not a malfunction.
- After adjusting the black balance with an EF Cinema lens attached to the camera, you will need to readjust the aperture.

Preparing the Lens

As much as possible, attach and remove the lens quickly and in a clean environment free of dust. Refer also to the instruction manual of the lens used.

IMPORTANT

- When attaching/removing a lens, avoid direct sunlight or strong light sources. Also, be careful not to drop the camera or lens.

NOTES

- After removing a lens or when a lens is not attached to the camera:
  - Do not touch the lens's surfaces, the lens mount or any components inside the lens mount area.
  - Place the body cap back on the lens mount and the dust caps back on the lens. Clean any dust or dirt from the body cap and dust caps before using them.

Attaching an EF Lens

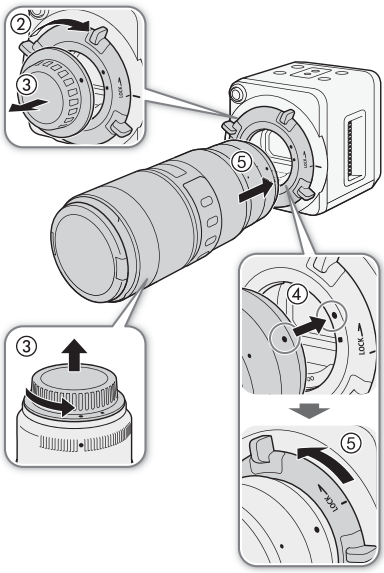
1 Set the **POWER** switch to OFF.

2 Turn the lens mount handle clockwise until it stops.

3 Remove the body cap from the camera and any dust caps from the lens.

4 Align the lens and mount making sure that the index marks are aligned.
- EF lenses: Align the red mark on the lens with the red EF Lens mount index mark on the camera.
- EF-S lenses: Align the white mark on the lens with the white EF-S Lens mount index mark on the camera.

5 After the lens is attached to the camera, without turning the lens, turn the lens mount handle counter-clockwise until it is tightened firmly.

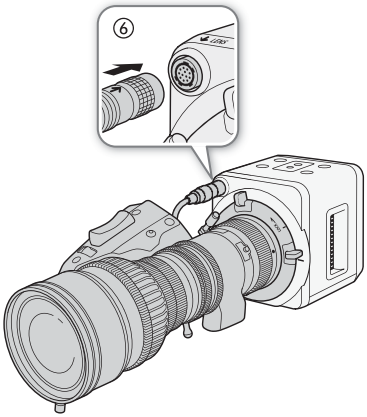


Only when using a compatible EF Cinema lens (80)

6 Connect the lens's 12-pin cable to the camera's LENS terminal.

7 Set the **POWER** switch to ON.

8 On the lens's MENU screen, select the signal path for data communication with the camera.
- In the [Info] screen, set [I/Fprior] to [Mount].

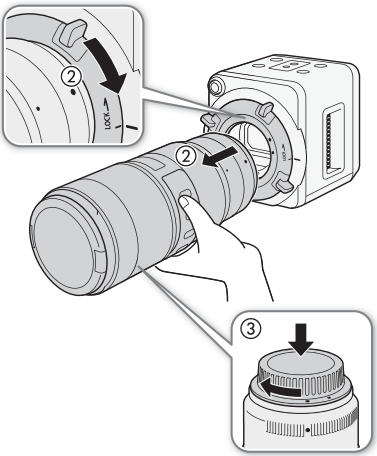


Removing an EF Lens

1 Set the **POWER** switch to OFF.
- If an EF Cinema lens is connected to the camera's LENS terminal, disconnect the 12-pin cable after turning off the camera.

2 While holding the bottom of the lens, turn the lens mount handle clockwise until it stops and remove the lens.
- Make sure not to drop the lens when removing it.

3 Place the body cap back on the lens mount and the dust caps back on the lens.

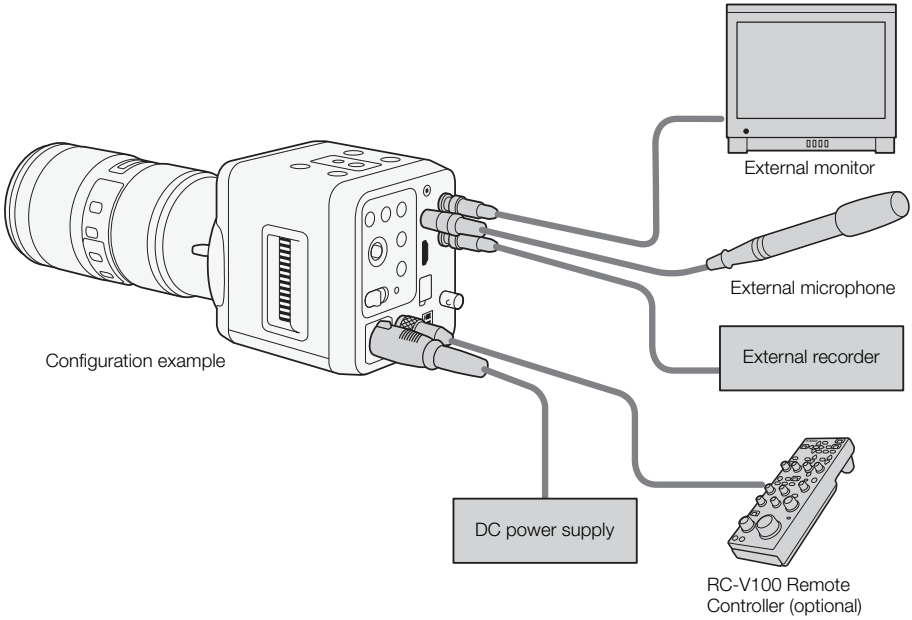


NOTES

- **About using an EF-S lens (both camera models) or compatible EF Cinema lens (20F only):** This camera's sensor is larger than the sensor size for which these lenses are designed (APS-C or Super 35mm). When using these lenses with the camera, you may notice peripheral illumination fall-off or vignetting. To prevent this, you can use the [Camera Setup] ❯ [EF-S Lens] setting to change the sensor area that is used for producing the image. This setting digitally enlarges the image by a factor of approx. 1.55 (20F) or 1.04 (200S) so the image quality will deteriorate.
- Depending on the lens's characteristics, the corners of the picture may seem darker due to light fall-off or illumination drop. You can use the [Camera Setup] ❯ [Periph.Illum.Corr.] setting to have the camera compensate if it has the correction data available for the lens.
- If you are using a compatible lens*, you can use the [Camera Setup] ❯ [Zoom-Iris Correct.] setting to have the camera adjust the aperture while zooming.
  * Some EF lenses and EF Cinema lenses are not compatible with this function.

Overview of Connecting to External Devices

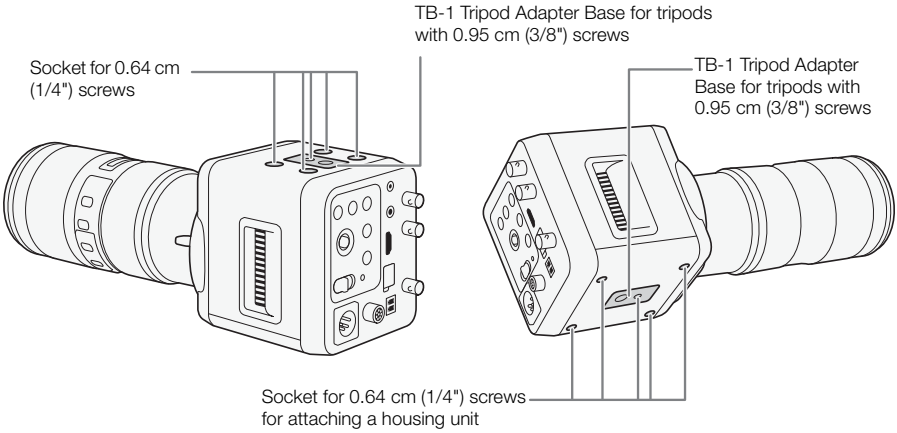
There are many ways in which you can configure the camera by connecting external devices. You can connect an external monitor, external recorder, optional RC-V100 Remote Controller or external microphone, as necessary. Refer to the following pages for more details.



- For an external monitor, refer to *Connecting to an External Monitor* (📖 19).
- For an external recorder, refer to *Connecting to an External Recorder* (📖 63).
- For an optional RC-V100 Remote Controller, refer to *Using the Optional RC-V100 Remote Controller* (📖 52).
- For an external microphone, refer to *Audio Input and Output* (📖 66).
- For synchronizing the camera with an external device, refer to *Synchronizing with an External Device* (📖 65).

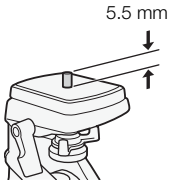
Installing the Camera

Depending on where you install the camera, you may want to use a commercially available tripod, pan/tilt head, housing unit or other accessory. The camera is shipped with two TB-1 Tripod Adapter Bases for tripods and accessories with 0.95 cm (3/8") screws. In addition, the camera body itself is equipped with sockets for 0.64 cm (1/4") screws.



IMPORTANT

- You can mount the camera on a tripod or similar accessory but do not use accessories with mounting screws longer than 5.5 mm (0.2 in.).

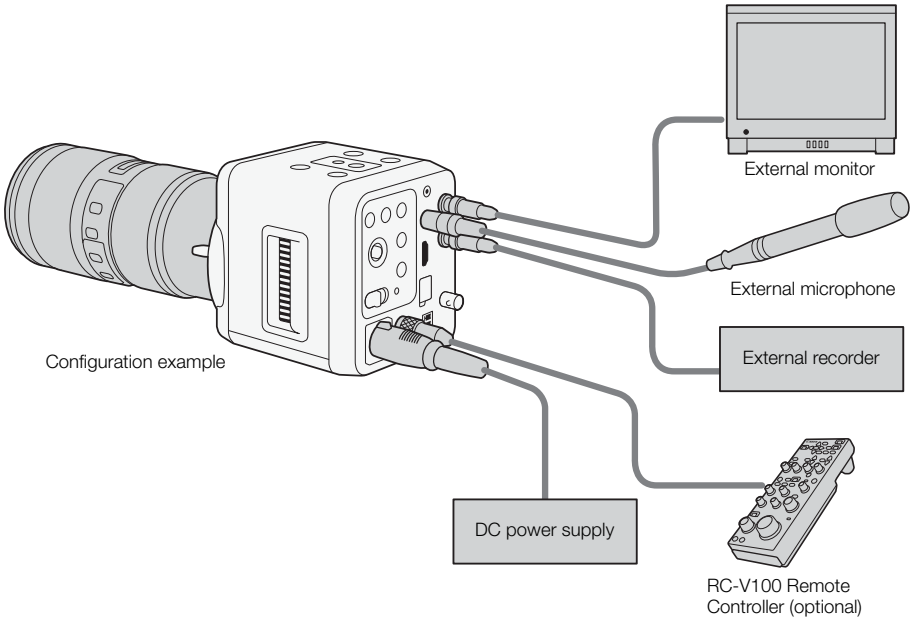


3 Shooting Video and Shooting Functions

Shooting Video

This section explains shooting-related functions. Prepare the lens, power supply and necessary connections to external devices in advance (📖 16, 24, 26). For details on audio output, refer to *Audio Input and Output* (📖 66).

Before shooting video for the first time, connect an external monitor and microphone to check that video and audio are being output correctly. Should the camera fail to operate correctly, consult a Canon Service Center.



1 Set the **POWER** switch to ON.
- The camera turns on and the shooting screen appears.

2 Adjust the video configuration (📖 32) and other shooting-related functions, as necessary.
- For details about shooting-related functions, refer to the relevant sections in this chapter.

3 Shoot video.
- For details on recording to an external recorder, refer to *Connecting to an External Recorder* (📖 63).

IMPORTANT
- Be careful not to obstruct in any way the fan's air vents.

NOTES

Color bars and audio reference signal

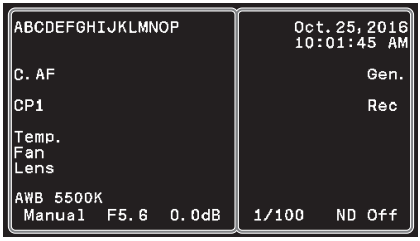
- You can have the camera output color bars using the following controls or settings.
  - Press the BAR button.
  - Use the [Camera Setup] ❯ [Color Bars] ❯ [Activate] setting.
  - When an optional RC-V100 Remote Controller is connected to the camera, you can press the remote controller's BARS button.
- You can select the type of color bars using the [Camera Setup] ❯ [Color Bars] ❯ [Type] setting.
- You can use the [Audio/Video Setup] ❯ [1kHz Tone] setting to output a 1-kHz audio reference signal with the color bars.

Ventilation fan

- You can set the speed of the cooling fan with the [Other Functions] ❯ [Fan Speed] setting.
- While the fan is running, the exhaust vent will emit warm air.
- If [Fan] appears in red on the screen, the cooling fan may not be working properly. Consult a Canon Service Center.
- When you use a commercially available lens adapter and the image on the screen is inverted, you can use the [Other Functions] ❯ [Scan Reverse] setting to return the image to the correct orientation.

Onscreen Displays

Refer to this section for an explanation of the various screen displays that appear on the shooting screen when an external monitor is connected to the camera's 3G/HD-SDI 1 / MONITOR terminal or HDMI OUT terminal. You can use the custom display function (🕮 62) to turn off most individual onscreen displays if they are not required. The "Custom Display" column indicates the setting in [Other Functions] ❯ [Custom Display] used to turn the display on/off. If "–" appears in that column for a display, it cannot be turned off.
The screen display layout will differ depending on the camera mode.



(ME200S-SH camera in manual mode)

Left side and center of the screen

Display	Description	Custom Display
ABCDEFGHIJKLMNOP	Camera name (📖 73).	[Camera Name]
20F AF	Autofocus operation (one-shot AF, 📖 46).	–
200S AF, C. AF	Autofocus operation (📖 46, 48). • [AF] appears only while the one-shot AF function is being used. • When [C. AF] appears in red, continuous AF has stopped working or cannot be used.	[Continuous AF] ([C. AF] display only)
CP1 to CP4, EOS, WDR, C.Log, Blue, Green	Currently selected custom picture file (📖 56).	[Custom Picture]
Temp. (in red)	Temperature warning (📖 74).	[Temperature Warning]
Fan (in red)	Fan warning (📖 74).	–
Lens (in red)	Lens error warning (📖 74).	[Lens Error]
AWB, WB-A, WB-B, Dylt, Tung, Kelv 00000K, ±0	White balance (📖 42).	[White Balance]
Auto, Tv, Av, AGC, Manual	Camera mode (📖 34).	[Camera Mode]
F0.0, Clsd	Aperture value (📖 36). • Grayed out when the camera mode is set to [Tv]; not displayed when it is set to [Auto]. • [Clsd] (fully closed iris) appears only when a compatible EF Cinema lens (📖 80) is attached to the camera.	[Iris]
00.0dB	Gain value (📖 39). • Grayed out when the camera mode is set to [Tv], [Av] or [AGC]; not displayed when it is set to [Auto].	[Gain]

Right side of the screen

Display	Description	Custom Display
Date/time	Date and time.	[Date/Time]
Gen.	Genlock (📖 65).	–
Rec	Recording command being output to an external recorder (📖 63).	–
1/0000	Shutter speed (📖 40). • Grayed out when the camera mode is set to [Av]; not displayed when it is set to [Auto].	[Shutter Speed]
ND Off, ND 1/8, ND 1/64	ND filter setting (📖 41). • Grayed out when the camera mode is set to a mode other than [Manual] and the ND mode is set to [Automatic]. Not displayed when the camera mode is set to [Auto] and the ND mode is set to [Automatic].	[ND Filter/Infrared]
IR	Infrared mode (📖 51).	[ND Filter/Infrared]

ⓘ NOTES

- Press the CANCEL button to stop showing the camera's onscreen displays on the shooting screen; press the button again to show all onscreen displays again.
- For external monitors that support only 480P or 576P input, connect the camera using the HDMI OUT teminal.
- When the output signal is 480P or 576P, onscreen displays will not be superimposed on the video signal.
- Onscreen displays will not be superimposed on the video signal output from the 3G/HD-SDI 2 terminal. To output onscreen displays, use the 3G/HD-SDI 1 / MONITOR terminal or HDMI OUT terminal.

Video Configuration: System Frequency, Frame Rate and Resolution

You can set the video configuration by selecting the resolution (frame size) and frame rate. Available frame rate options will depend on the selected system frequency and resolution. See the table following the procedures for a summary.

Selecting the System Frequency

Perform the following procedure to change the system frequency to either 59.94 Hz or 50.00 Hz.

1 Open the [System Frequency] submenu.
[Other Functions] ❯ [System Frequency]

2 Select the desired option and then press SET.

- If you changed the system frequency from the current setting, the camera will restart in the selected system frequency.
- If you selected a setting not supported by the external monitor, the display may disappear. Refer to the *Troubleshooting* section (📖 74).

[Other Functions]
▽
[System Frequency]
▽
[59.94Hz] or [50.00Hz]*

* Depending on the country/region of purchase.

Selecting the Frame Rate

1 Open the [Frame Rate (MON.)] submenu.
[Other Functions] ❯ [Frame Rate (MON.)]

2 Select the desired option and then press SET.

[Other Functions]
▽
[Frame Rate (MON.)]
▽
[59.94i] or [50.00i]*

* Depending on the country/region of purchase.

Selecting the Resolution

1 Open the [Resolution] submenu.
[Other Functions] ❯ [Resolution]

2 Select the desired option and then press SET.

[Other Functions]
▽
[Resolution]
▽
[1920x1080]

Available video configuration settings

Resolution	System frequency / Frame rate							
	59.94 Hz				50.00 Hz			
	59.94P	59.94i / 59.94P (i)*	29.97P	23.98P	50.00P	50.00i / 50.00P (i)*	25.00P	25.00PsF
1920x1080	●	●	●	●	●	●	●	●
1280x720	●	–	●	●	●	–	●	–

* Use this mode to shoot at the progressive frame rate while using the interlaced mode for video output from the 3G/HD-SDI 1/ MONITOR terminal. (Video output from the 3G/HD-SDI 2 terminal will be in progressive mode regardless.)

Setting the Camera Mode

The camera offers the following camera modes. With camera modes other than [Manual], the ND filter (📖 41) and white balance (📖 42) are adjusted automatically by default. You can change the menu settings to allow you to control them manually.

[Auto]: The camera controls the exposure by automatically adjusting the aperture, gain and shutter speed. This is the default mode so the camera mode will be set to [Auto] the first time you use the camera or after you reset all the camera's settings.

[Tv] (shutter priority AE): Set the shutter speed manually to match low light conditions or fast moving subjects. The camera will then automatically set the appropriate aperture and gain to obtain the best exposure.

[Av] (aperture priority AE): Set the aperture manually to control the depth of field. The camera will then automatically set the appropriate gain and shutter speed to obtain the best exposure.

[AGC] (automatic gain control): You can set the shutter speed and aperture manually. The camera will then automatically adjust the gain (the sensor's sensitivity) depending on the brightness of the subject.

[Manual]: You can adjust the aperture, gain, shutter speed, ND filter and white balance manually.



[Auto] mode



[Manual] mode

1 While the shooting screen is displayed, press SET.
- If the camera mode is not selected (highlighted in orange on the screen), push the joystick left/right to highlight the current camera mode.

2 Push the joystick up/down to select the desired camera mode and then press SET.

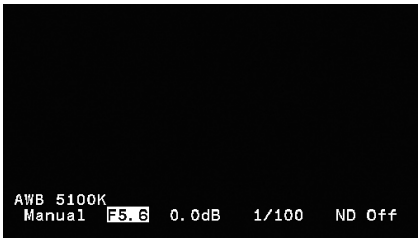
NOTES
- You can use the [Camera Setup] ❯ [AE Response] setting to change how quickly the aperture changes during automatic exposure (camera modes other than [Manual], or while using push auto iris with the camera mode set to [Manual]).
- You can use the [Camera Setup] ❯ [Auto Slow Shutter] setting to select whether the camera will use shutter speeds slower than the current frame rate when the camera mode is set to [Auto] or [Av].
- When the camera mode is set to a mode other than [Manual] and the brightness changes, exposure adjustment may not be smooth.

Adjusting Main Camera Functions with the Joystick

Using only the joystick, you can adjust the following main camera functions. Note that some of the functions cannot be adjusted manually when the camera mode is set to [Auto].

- Camera mode (34)
- Aperture (36)
- Gain (39)
- Shutter speed (40)
- ND filter (41)
- White balance (42)

This section will explain the basics of how to adjust the functions. For specific details, refer to each function's section.



1 Set the camera mode to a mode other than [Auto] (34).
2 Close the menu and then press SET.
   - One of the adjustable settings will be highlighted in orange on the screen.
   - The display will return to normal if no operation is performed for about 6 seconds.
3 Push the joystick left/right to select the function you want to adjust.
4 Push the joystick up/down to select the desired option and then press SET.
   - The desired option will be set and the display will return to normal.

NOTES

- The camera will automatically end the direct setting mode in the following cases.
  - If no operation was performed for more than 6 seconds.
  - If the MENU button or CANCEL button was pressed.

Adjusting the Aperture

The camera offers the following two ways to adjust the aperture but available aperture values will vary depending on the lens attached.

Manual aperture: Adjust the aperture value manually using the joystick. Available when the camera mode is set to [Av], [AGC] or [Manual].

Push Auto Iris: Momentary automatic aperture. Press a button to temporarily adjust the aperture automatically. Available only when the camera mode is set to [Manual].

The camera also allows you to compensate for the exposure obtained during automatic exposure as well as select the light metering mode.

Required settings on EF Cinema lenses

To adjust the aperture from the camera, you will need to enable automatic adjustment using the controls on the lens. Required settings vary depending on the lens. Refer to the following table and the instruction manual of the lens used.

Lens	Part used on the lens	Setting for automatic adjustment
CN7x17 KAS S/E1 CN20x50 IAS H/E1	Iris operation change-over switch	A
CN-E18-80mm T4.4 L IS KAS S CN-E70-200mm T4.4 L IS KAS S	Iris auto/manual change-over switch	A

Manual Aperture

1 Set the camera mode to [Av], [AGC] or [Manual] (📖 34).
- When using a compatible EF Cinema lens, enable automatic adjustment on the lens.

2 Open the [Iris Increment] submenu.
[Camera Setup] ❯ [Iris Increment]

[Camera Setup] → [Iris Increment] → [1/2 stop]

3 Select [1/2 stop], [1/3 stop] or [Fine] (fine adjustment) and then press SET.

4 Close the menu and then press SET.
- One of the adjustable settings will be highlighted in orange on the screen.

5 Push the joystick left/right to select the current aperture value.

6 Push the joystick up/down to select the desired value and then press SET.
- When [Iris Increment] is set to [Fine], the actual increments will be smaller than 1/3 stop but the onscreen display will show the closest 1/3-stop aperture value.

ⓘ NOTES

- **When using a compatible EF Cinema lens** (📖 80)
  - As you close down the aperture, the aperture value will be displayed in gray (when the iris is almost fully closed) and then will change to [Clsd] (in white). Still, the iris may not be fully closed even when the onscreen display appears as [Clsd].
  - When you change the aperture value from a position of fully open or fully closed iris, multiple adjustment operations may be required to change the iris.

- When using an EF lens that can correct the aperture value according to the position of the zoom*, you can use the [Camera Setup] ❯ [Zoom-Iris Correct.] setting to activate this correction.
- When an optional RC-V100 Remote Controller is connected to the camera, you can adjust the aperture with the remote controller's IRIS dial. At default settings, turn the dial right to open up the aperture and left to close the aperture. Refer to the instruction manual of the RC-V100 for details on changing that setting.
- The aperture values set in the camera and displayed on the screen are approximate. Use them only as a reference.

* Some EF lenses and EF Cinema lenses are not compatible with this function.

Momentary Automatic Aperture - Push Auto Iris

You can have the camera temporarily take control and automatically adjust the aperture for an optimal exposure while you keep the button held down.

1 Set the camera mode to [Manual] (📖 34).

2 Set an assignable button to [Push Auto Iris].
[Other Functions] ❯ [Assignable Buttons] ❯ Desired button ([1] to [4 (Remote)]) ❯ [Push Auto Iris]

3 Press and hold the assignable button.
- The camera will automatically adjust the aperture to obtain optimal exposure.
- When you release the button, automatic aperture mode will end and the aperture value that was last set with push auto iris will be maintained in manual aperture.

ⓘ NOTES

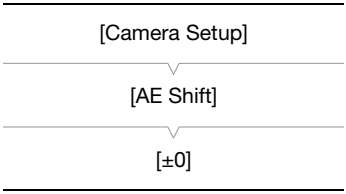
- You can use the [Camera Setup] ❯ [AE Response] setting to change how quickly the aperture changes during automatic exposure (camera modes other than [Manual], or while using push auto iris with the camera mode set to [Manual]).
- When an optional RC-V100 Remote Controller is connected to the camera, you cannot use push auto iris while using the remote controller's FOCUS dial.

Exposure Compensation - AE Shift

You can compensate the exposure obtained during automatic exposure (camera modes other than [Manual], or while using push auto iris with the camera mode set to [Manual]), in order to darken or lighten the image.

1 Open the [AE Shift] submenu.
[Camera Setup] ❯ [AE Shift]

2 Select an AE shift level and then press SET.
- When the camera mode is set to a mode other than [Manual], you can check the effects of the selected AE shift level on the screen.
- You can select a level from -2.0 EV to 2.0 EV (in 0.25-EV increments).



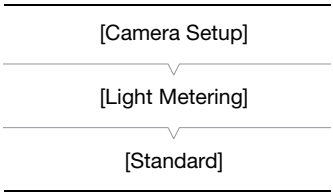
NOTES

- If you set an assignable button to [AE Shift +] or [AE Shift –] (54), you can press the button to adjust the AE shift level.
- You cannot use push auto iris and adjust the AE shift level at the same time.

Light Metering Mode

Select the light metering mode to match the shooting conditions. Using the appropriate setting will produce a suitable exposure level during automatic exposure (camera modes other than [Manual], or while using push auto iris with the camera mode set to [Manual]).

1 Open the [Light Metering] submenu.
[Camera Setup] ❯ [Light Metering]
2 Select the desired option and then press SET.



Options

[Backlight]: Suitable when shooting backlit scenes.
[Standard]: Averages the light metered from the entire screen, giving more weight to the subject in the center.
[Spotlight]: Use this option when shooting a scene in which only a certain part of the picture is lit, for example, when the subject is lit by a spotlight.

NOTES

- When the camera mode is set to [Manual], changing the light metering mode will not affect the exposure. Adjust the exposure manually to a suitable level.

Gain

When the camera mode is set to [Manual], you can manually adjust the gain to change the brightness of the image. In other camera modes the camera will automatically adjust the gain. In such case, you can set an automatic gain control (AGC) limit to prevent the camera from using gain values above the preset limit.

Manual Adjustment

1 Set the camera mode to [Manual] (📖 34).

2 Press SET.
- One of the adjustable settings will be highlighted in orange on the screen.

3 Push the joystick left/right to select the current gain value.

4 Push the joystick up/down to select the desired value and then press SET.
- You can select a value in the following range while checking the effect on the image.
  20F : 0.0 to 75.0 dB (in 3.0-dB increments),
  200S : 0.0 to 56.0 dB (in 3.0-dB increments between 0.0 and 54.0 dB)

ⓘ NOTES
- When high gain levels are set, the picture may flicker slightly.
- When high gain levels are set, bright red, green or blue dots may appear on the screen. In such case, use a faster shutter speed (📖 40) or select a lower gain value.
- When an optional RC-V100 Remote Controller is connected to the camera, you can adjust the gain value with the remote controller's ISO/GAIN ▲/▼ buttons.

Auto Gain Control (AGC) Limit

1 Set the camera mode to a mode other than [Manual] (📖 34).

2 Open the [AGC Limit] submenu.
[Camera Setup] ❯ [AGC Limit]

3 Select the desired level and then press SET.
- You can select [Off (75dB)] (20F) or [Off (56dB)] (200S) for no limit (maximum gain as given in the parentheses); or a maximum gain level from 36 dB to 75 dB (20F) or from 30 dB to 54 dB (200S), in 3-dB increments.

[Camera Setup]
[AGC Limit]
20F [Off (75dB)]
200S [Off (56dB)]

Shutter Speed

Set the shutter speed based on shooting conditions. For example, you may want to set slower shutter speeds for darker environments.

1 Set the camera mode to [Manual], [Tv] or [AGC] (📖 34).
2 Press SET.
- One of the adjustable settings will be highlighted in orange on the screen.

3 Push the joystick left/right to select the current shutter speed value.
4 Push the joystick up/down to select the desired value and then press SET.

Available Shutter Speeds

The available shutter speeds vary depending on the system frequency and frame rate used.

System frequency / Frame rate		
59.94 Hz		50.00 Hz
59.94P / 59.94P (i) / 59.94i / 29.97P	23.98P	50.00P / 50.00P (i) / 50.00i / 25.00P / 25.00PsF
1/4, 1/5, 1/6, 1/7, 1/8, 1/10, 1/12, 1/15, 1/17, 1/20, 1/24, 1/30, 1/34, 1/40, 1/48, 1/60, 1/75, 1/90, 1/100, 1/120, 1/150, 1/180, 1/210, 1/250, 1/300, 1/360, 1/420, 1/500, 1/600, 1/720, 1/840, 1/1000, 1/1200, 1/1400, 1/1700, 1/2000	1/3, 1/4, 1/5, 1/6, 1/7, 1/8, 1/10, 1/12, 1/15, 1/17, 1/20, 1/24, 1/30, 1/34, 1/40, 1/48, 1/60, 1/75, 1/90, 1/100, 1/120, 1/150, 1/180, 1/210, 1/250, 1/300, 1/360, 1/420, 1/500, 1/600, 1/720, 1/840, 1/1000, 1/1200, 1/1400, 1/1700, 1/2000	1/3, 1/4, 1/5, 1/6, 1/7, 1/8, 1/10, 1/12, 1/14, 1/16, 1/20, 1/25, 1/29, 1/33, 1/40, 1/50, 1/60, 1/75, 1/90, 1/100, 1/120, 1/150, 1/180, 1/210, 1/250, 1/300, 1/350, 1/400, 1/500, 1/600, 1/700, 1/800, 1/1000, 1/1200, 1/1400, 1/1600, 1/2000

ⓘ NOTES

- When an optional RC-V100 Remote Controller is connected to the camera, you can change the shutter speed with the remote controller's SHUTTER ▲/▼ buttons.
- **About reducing flicker due to shooting under artificial light sources:**
  - When shooting under artificial light sources such as fluorescent, mercury or halogen lamps, the image may flicker depending on the shutter speed. In such case, you can use the [Camera Setup] ❯ [Flicker Reduction] setting to have the camera automatically detect and correct* flicker.
  - Alternatively, you may be able to avoid flicker by setting the shutter speed to a value matching the frequency of the local electrical system: 1/50** or 1/100 for 50 Hz systems, 1/60 or 1/120 for 60 Hz systems.

* Depending on the shooting conditions, the camera may not be able to reduce the flicker.
** May not be available depending on the frame rate.

ND Filter

Using the ND filter allows you to open up the aperture to obtain a shallower depth of field even when shooting in bright surroundings. You can also use the ND filter to avoid the soft focus caused by diffraction when using small apertures.

1 If the camera mode is set to a mode other than [Manual], change the ND mode setting to adjust the ND filter manually.
[Camera Setup] ❯ [ND Mode] ❯ [Manual]

2 Close the menu and then press SET.
- One of the adjustable settings will be highlighted in orange on the screen.

3 Push the joystick left/right to select the current ND filter setting.

4 Push the joystick up/down to select the desired setting and then press SET.

Options

[ND Off]:	Select this option to not use the ND filter.
[ND 1/8]:	Reduces the amount of light by 3 stops (1/8 the amount of light).
[ND 1/64]:	Reduces the amount of light by 6 stops (1/64 the amount of light).

NOTES

- Depending on the scene, the color may change when turning the ND filter on/off. Setting a custom white balance (📖 43) may be effective in such case.
- When an optional RC-V100 Remote Controller is connected to the camera, you can select the ND filter setting with the remote controller's ND button. On the remote controller, the ND filter indicators illuminate depending on the selected setting (1 for [ND 1/8], 2 for [ND 1/64], 3 and 4 are not used).

White Balance

The camera uses an electronic white balance process to calibrate the picture and produce accurate colors under different lighting conditions. There are 4 methods of setting the white balance.

Auto white balance (AWB): The camera automatically adjusts the white balance to the optimal level.

Custom white balance: You can use a gray card or white object with no pattern to establish the white balance and save it to one of two custom white balance settings, [WB-A] or [WB-B]. When shooting under fluorescent lights, we recommend setting the custom white balance.

Preset white balance: Set the white balance to [Tung] (tungsten lighting) or [Dylt] (daylight). Preset white balance settings can be further fine-tuned within a range of -9 to 9.

Select color temperature: Set the while balance to [Kelv] (Kelvin) to select a color temperature between 2,000 K and 15,000 K (in 100 K increments).

NOTES

- The [Custom Picture] ◆ [Fine Tuning] ◆ [Color Matrix] and [White Balance] settings in the custom picture file (📖 56) take precedence over the white balance set with these procedures.
- You can use the [Camera Setup] ◆ [Shockless WB] setting to make the transition look smoother when you change the white balance settings.
- When an optional RC-V100 Remote Controller is connected to the camera, you can adjust the white balance with the remote controller's AWB button, A button, B button, PRESET button and button.
- The color temperatures displayed on the screen are approximate. Use them only as a reference.

Auto White Balance (AWB)

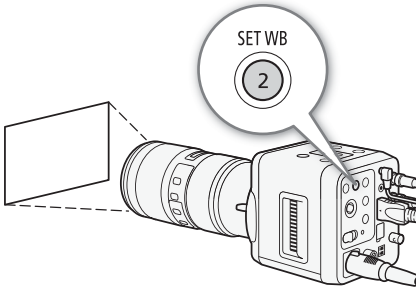
The camera constantly adjusts the white balance automatically to achieve an optimal level. The camera will adjust the white balance if the light source changes.

1 Press SET.
   - One of the adjustable settings will be highlighted in orange on the screen.
2 Push the joystick left/right to select the current white balance setting.
3 Push the joystick up/down to select [AWB] and then press SET.
   - The white balance will be adjusted automatically.

NOTES

- Custom white balance may provide better results in the following cases:
  - Changing lighting conditions
  - Close-ups
  - Subjects in a single color (sky, sea or forest)
  - Under mercury lamps and certain types of fluorescent and LED lights

Custom White Balance



1 Press SET.
   - One of the adjustable settings will be highlighted in orange on the screen.
2 Push the joystick left/right to select the current white balance setting.
3 Push the joystick up/down to select [WB-A] or [WB-B] and then press SET.
   - If a custom white balance has been stored previously, pressing the joystick will apply the stored custom white balance. You do not need to perform the rest of the procedure.
   - If a custom white balance has not yet been stored, the custom white balance display [WB-A] or [WB-B] and default value will flash slowly. Continue the procedure to establish the custom white balance.
4 Point the camera at a gray card or white object so that it fills the whole screen.
   - Use the same lighting conditions you plan to use when shooting.
5 Press the SET WB button.
   - [WB-A] or [WB-B] will flash quickly.
   - Make sure the gray card or white object fills the screen until the procedure is completed.
   - Once [WB-A] or [WB-B] stops flashing, the procedure is completed. The setting is retained even if you turn off the camera.

NOTES

- Readjust the custom white balance if the light source or ND filter setting changes.
- Very rarely and depending on the light source, [WB-A] or [WB-B] may keep flashing (it will change to a slow flashing). The result will still be better than with the auto white balance.

Color Temperature/Preset White Balance

1 Press SET.
   - One of the adjustable settings will be highlighted in orange on the screen.
2 Push the joystick left/right to select the current white balance setting.
3 Push the joystick up/down to select [Kelv] (color temperature setting), or [Dylt] or [Tung] (preset white balance).
   - To change the color temperature or to further adjust the preset white balance, continue to step 4. Otherwise, press SET (the rest of the procedure is not necessary).
4 Push the joystick right.
   - Alternatively, you can press the SET WB button.
   - **Color temperature:** On the screen, the default color temperature value (5,500 K) next to the white balance setting will be highlighted in orange.
     Preset white balance: On the screen, the adjustment value ±0 next to the white balance setting will be highlighted in orange.

5 Push the joystick up/down to change the color temperature or adjustment value and then press SET.

Adjusting the Focus

The camera offers the following ways to focus. The ME200S-SH camera also incorporates Dual Pixel CMOS AF technology for advanced autofocus performance. See also the general notes at the end of this section (📖 49).

Manual focus: Turn the focus ring on the lens to adjust the focus.

One-shot AF*: With the lens's focus mode switch set to AF, you will be able to focus manually but still have the option to press an assignable button set to [One-Shot AF] to let the camera focus automatically once.

200S Continuous AF*: The camera continuously focuses on the subject at the center of the screen.

* Not available when a manual focus lens or a CN20x50 IAS H/E1 lens is attached to the camera.

Focusing methods and required settings

Focusing method		Focus mode switch on an EF lens**	200S only: [Camera Setup] ❯ [AF Mode] setting
Manual focus	Focus ring	MF	—
	FOCUS dial on an optional RC-V100 Remote Controller connected to the camera	AF	[One Shot]
One-shot AF	Assignable button set to [One-Shot AF]	AF	[One Shot]
200S Continuous AF		AF	[Continuous (Always On)], [Continuous (Auto Off)]

**For the necessary settings on compatible EF Cinema lenses, see the table below.

Required settings on EF Cinema lenses

To adjust the focus from the camera, you will need to change the focus mode using the controls on the lens. Required settings vary depending on the lens. Refer to the following table and the instruction manual of the lens used.

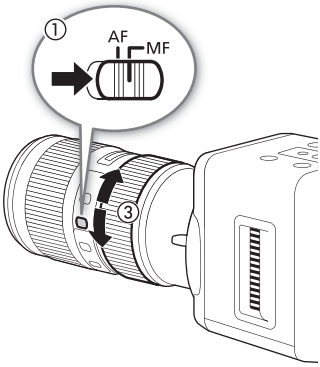
Lens	Part used on the lens	Setting for automatic adjustment	Setting for manual adjustment
CN7x17 KAS S/E1 CN20x50 IAS H/E1	Focus operation change-over knob	SERVO	MANU.
CN-E18-80mm T4.4 L IS KAS S CN-E70-200mm T4.4 L IS KAS S	Autofocus/Manual Focus change-over switch	AF	MF

Manual Focus

Focus manually using the focus ring on the lens.

1 Set the focus mode switch on the lens to MF.
- On a compatible EF Cinema lens, enable manual adjustment on the lens (📖 45). **200S** only: Also, set the camera's AF mode to [One Shot] (step 3 in the following procedure).

2 Turn the lens's focus ring to adjust the focus.



ⓘ NOTES

- With some EF lenses, you may be able to operate the focus ring even when the focus mode switch is set to AF.
- When using the optional RC-V100 Remote Controller to adjust the focus, set the focus mode switch to AF (or the focus operation change-over knob to SERVO).
- When an optional RC-V100 Remote Controller is connected to the camera, you can adjust the focus with the remote controller's FOCUS dial. At default settings, turn the dial right to focus farther and left to focus nearer. Refer to the instruction manual of the RC-V100 for details on changing that setting.
- To be able to adjust the focus using an accessory connected to the lens, you will need to change the [Camera Setup] ❯ [Focus Control] setting to give priority to the lens.

One-Shot AF

With one-shot AF, you will focus manually in most situations but still have the option to press a button to have the camera focus automatically only one time.

1 Set the focus mode switch on the lens to AF.
- On a compatible EF Cinema lens, enable automatic adjustment on the lens (📖 45).

2 Set an assignable button to [One-Shot AF].
[Other Functions] ❯ [Assignable Buttons] ❯ Desired button ([1] to [4 (Remote)]) ❯ [One-Shot AF]

3 **200S** Set the AF mode to [One Shot].
[Camera Setup] ❯ [AF Mode] ❯ [One Shot]

200S only:

[Camera Setup] ❯ [AF Mode] ❯ [One Shot]

4 Press and hold the assignable button.
- While the camera is trying to focus on a subject, [AF] will flash quickly on the left of the screen. When the correct focus has been achieved, it will stop flashing and stay on.
- When one-shot AF is not available or the camera cannot focus on a subject, [AF] will flash in red on the screen.
- [AF] will disappear when you release the assignable button.

NOTES

- One-shot AF is not available for the following shutter speed settings.
  - 1/4, 1/5, 1/6 (at a system frequency of 59.94 Hz with a frame rate other than 23.98P)
  - 1/3, 1/4, 1/5 (at a system frequency of 59.94 Hz with a frame rate of 23.98P)
  - 1/3, 1/4, 1/5 (at a system frequency of 50.00 Hz)

Focus Limit: Setting the Distance Range for Autofocus

You can set a "focus limit" range for the attached lens, which will cause the camera to try to autofocus (with one-shot AF) on subjects only within that range, thereby possibly reducing autofocusing time. You can set the far end and near end of the range, as necessary, by selecting a desired focus position.

1 Set the focus mode switch on the lens to AF.
- On a compatible EF Cinema lens, enable automatic adjustment on the lens (45).

2 Open the [Activate] submenu to activate the focus limit.
[Camera Setup] ❯ [Focus Limit] ❯ [Activate]

3 Select [On] and then press SET.

[Camera Setup]
[Focus Limit]
[Activate]
[Off]

To set the far end of the range

4 Adjust the focus to the desired position for the far end of the range.

5 Open the [Far] focus limit submenu.
[Camera Setup] ❯ [Focus Limit] ❯ [Far]
- When a focus limit has not been set, [Limit Off] will appear on the [Focus Limit] submenu screen. When it has been set, [Limit On] will appear.

[Camera Setup]
[Focus Limit]
[Far] ..... [Limit Off]
[Near] ..... [Limit Off]

6 Select [Set] and then press SET.
- Select [Reset] instead to clear the focus position currently set for the far end.
- Select [Cancel] instead to cancel the operation.

To set the near end of the range

4 Adjust the focus to the desired position for the near end of the range.

5 Open the [Near] focus limit submenu.
[Camera Setup] ❯ [Focus Limit] ❯ [Near]
- When a focus limit has not been set, [Limit Off] will appear on the [Focus Limit] submenu screen. When it has been set, [Limit On] will appear.

6 Select [Set] and then press SET.
- Select [Reset] instead to clear the focus position currently set for the near end.
- Select [Cancel] instead to cancel the operation.

NOTES

- Focus limit settings will be lost when you turn off the camera or replace the lens. In such case, set the focus limit again.
- If the limits for the near end and far end conflict, the one most recently set will take precedence and the other will be cleared. For example, if you set a limit for the far end and then you set one for the near end that is farther, the limit for the far end will be cleared.
- When you activate one-shot AF after setting a focus limit, if no subject can be focused on within the range, the focus will return close to the position where it was prior to activating one-shot AF.
- If you operate the zoom after setting a focus limit, the position of the focus limit will change. Set the focus limit again.

200S Continuous AF

The camera will focus automatically on a subject at the center of the screen.

1 Set the focus mode switch on the lens to AF.
- On a compatible EF Cinema lens, enable automatic adjustment on the lens (45).

2 Set the AF mode to [Continuous (Always On)] or [Continuous (Auto Off)].
[Camera Setup] ❯ [AF Mode] ❯ [Continuous (Always On)] or [Continuous (Auto Off)]
- [C. AF] will appear on the left of the screen.
- When continuous AF has stopped working or cannot be used, [C. AF] will turn gray.

[Camera Setup] ▽ [AF Mode] ▽ [One Shot]

NOTES

- When shooting in dark surroundings with the camera mode set to a mode other than [Manual], the camera may keep endlessly trying to focus unsuccessfully. You can set [AF Mode] to [Continuous (Auto Off)] to deactivate the autofocus function if this happens and avoid unreliable focus operations.
- Continuous AF will not work in the following cases.
  - When using an EF lens that does not have a focus mode switch.
  - While adjusting the aperture.
  - If [AF Mode] is set to [Continuous (Auto Off)], when shooting in dark surroundings with the camera mode set to [Auto].
  - While adjusting the focus using a remote controller connected to the REMOTE terminal.

General Notes regarding Focus Functions

NOTES

- If you operate the zoom after focusing, the focus on the subject may be lost.
- When adjusting the focus, be careful not to touch the front of the lens or moving parts on the lens except for the focus ring.
- **About the autofocus (AF) functions:**
  - Autofocus may not work well when high gain levels are set.
  - Autofocus may not work well when [Custom Picture] ❯ [Fine Tuning] ❯ [Gamma] is set to [Wide DR] or [Canon Log].
  - The point where the camera focuses may change slightly depending on shooting conditions, such as subject, brightness and zoom position. Check the focus before resuming shooting.
- Autofocus may take longer in the following cases.
  - When the frame rate is set to 29.97P, 25.00P, 25.00PsF or 23.98P.
  - With some EF lenses, the camera may take longer to focus automatically or may not be able to focus correctly. Visit your local Canon website for the latest information.
- Autofocus may not work well on the following subjects or in the following cases. In such case, focus manually.
  - Reflective surfaces
  - Subjects with low contrast or without vertical lines
  - Fast moving subjects
  - Through dirty or wet windows
  - Low-light scenes
  - **200S** Subjects with a repetitive pattern

Aspect Markers

The camera offers the following onscreen markers that indicate commonly-used aspect ratios: 4:3, 4:3 Super 35mm (20F only), 1.66:1, 1.85:1 and 2.39:1. Use the aspect markers to make sure the subject is correctly framed and within the appropriate safe area.



Aspect marker 2.39:1, gray (default)



Aspect marker 4:3, white

1 Open the [Activate] submenu to activate the aspect markers.
[Other Functions] ❯ [Aspect Marker] ❯ [Activate]
2 Select [On] and then press SET.
- To check the aspect marker on the shooting screen, press the MENU button to close the menu. If necessary, press the MENU button again to return to the menu and change the aspect marker's settings.

[Other Functions]
[Aspect Marker]
[Activate]
[Off]

To change the aspect marker's settings

1 Open the [Color] submenu to select the aspect marker's color.
[Other Functions] ❯ [Aspect Marker] ❯ [Color]
2 Select [Black], [Gray] or [White] and then press SET.
3 Open the [Ratio] submenu to select the aspect ratio.
[Other Functions] ❯ [Aspect Marker] ❯ [Ratio]
4 Select the desired aspect ratio and then press SET.

[Other Functions]
[Aspect Marker]
[Color] ..... [Gray]
[Ratio] ..... [2.39:1]

NOTES

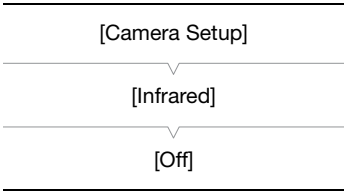
- If you set an assignable button to [Aspect Marker] (54), you can press the button to turn the aspect marker on and off.

Infrared Mode

Using the infrared mode, the camera becomes more sensitive to infrared light, allowing you to shoot in dark locations. During infrared mode, only some functions are available for adjustment.

1 Open the [Infrared] submenu.
[Camera Setup] ❯ [Infrared]

2 Select [On] and then press SET.
- [IR] will appear on the lower right corner of the screen.



Functions available during infrared mode

Refer to the following table for a summary of functions available for adjustment.

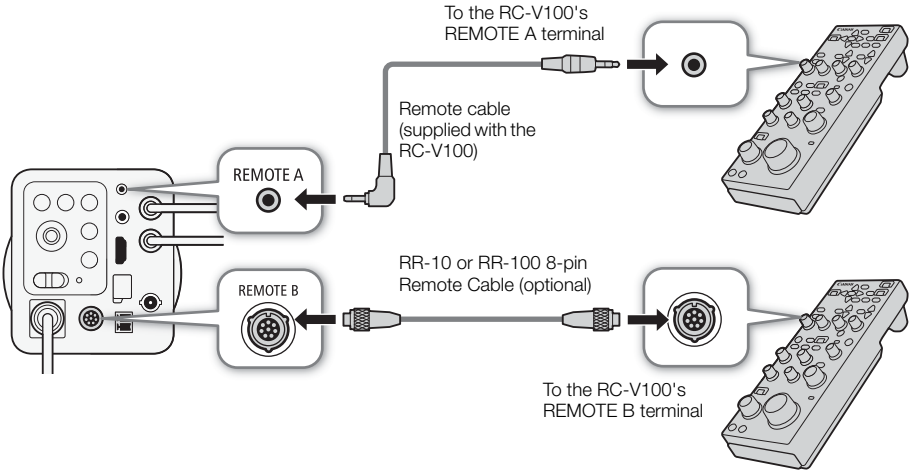
Function	Status
Aperture	Available when the camera mode is set to [Av], [AGC] or [Manual].
Gain	Available when the camera mode is set to [Manual].
Shutter speed	Available when the camera mode is set to [Tv], [AGC] or [Manual].
Focus	Available in all camera modes.
White balance	Available only by using the [Custom Picture] ❯ [Fine Tuning] ❯ [White Balance] setting when a custom picture file is selected.
ND filter	Cannot be changed (turned off).
Light metering	Cannot be changed (set to [Standard]).

NOTES

- Depending on the light source, autofocus may not work well during infrared mode.

Using the Optional RC-V100 Remote Controller

You can connect the optional RC-V100 Remote Controller to control the camera from a distance. In addition to turning the camera on and off and navigating the menu, you can control various shooting-related functions, such as aperture, shutter speed, and custom picture settings, like knee and sharpness. For details on how to connect and use the remote controller, refer to its instruction manual. Visit your local Canon website to download the latest version.



1 Set the **POWER** switch to OFF and connect the remote controller to the camera.
   - Make sure that the remote controller's terminal selection switch is set to match the terminal to be used on the camera.
2 Set the **POWER** switch to ON.
   - If you are using the RC-V100's REMOTE B terminal, continue to step 3. Otherwise, you do not need to perform the rest of the procedure.
3 Open the [RC-V100] submenu.
   [Other Functions] ❯ [REMOTE B Term.]
4 Select [RC-V100] and then press SET.

[Other Functions]
[REMOTE B Term.]
[RC-V100]

NOTES

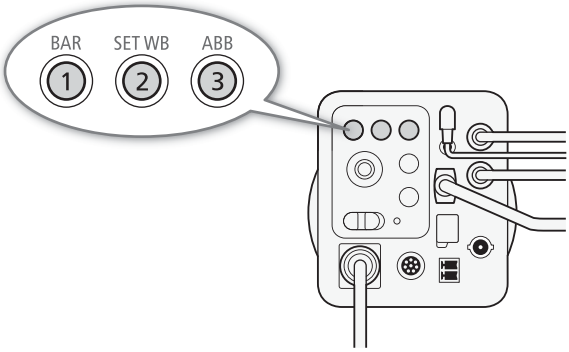
- The following controls on the remote controller will not operate the camera: ONSCREEN button, ⊜ (review recording) button, SHUTTER SELECT button, AGC button, AUTO KNEE button, AF button and AUTO IRIS button.
- The ZOOM dial on the remote controller can operate the camera only when a compatible EF Cinema lens (🕮 80) is attached to the camera and the lens's zoom operation change-over knob is set to SERVO.

- If you plan on connecting the remote controller to the camera using the optional RR-10 or RR-100 8-pin Remote Cable, check the serial number of the RC-V100. If the serial number starts with "01 xxxx" (where xxxx represents other digits), you will need to update the remote controller's firmware. Canon will perform this feature upgrade, and requires that the remote controller be sent to an accredited Canon Service Center. Shipping and handling charges may apply. Contact a Canon Customer Support Center for details.

4 Customization

Assignable Buttons

The camera offers three assignable buttons to which you can assign various functions. Assign often-used functions to personalize the camera to your needs and preferences. When an optional RC-V100 Remote Controller is connected to the camera, you can use a fourth assignable button. The names of the buttons printed on the camera also indicate the buttons' default settings.



Changing the Assigned Function

1 Open the [Assignable Buttons] submenu.
[Other Functions] ❯ [Assignable Buttons]

2 Select the button to change and then press SET.
- A list of available functions appears.

3 Select the desired function and then press SET.
- The selected function will be assigned to the selected button.

[Other Functions]

[Assignable Buttons]

[1 Color Bars]
[2 Set WB]
[3 ABB]
[4 (Remote) Infrared]*

* Assignable button 4 is located on the optional RC-V100 Remote Controller but the button's function can be assigned without connecting the RC-V100 to the camera.

Using an Assignable Button

After you assign a function to one of the buttons, press the button to activate the function. For some functions, you may need to perform other procedures. Refer to the function's reference page below, as necessary.

Assignable Functions

Function name	Description	🕮
[One-Shot AF]*	The camera focuses automatically one time only (one-shot AF function) while the button is held pressed down.	46
[Push Auto Iris]*	The camera automatically adjusts the aperture only while the button is held pressed down.	37
[ABB]	Starts the procedure for automatic black balance adjustment.	23
[AE Shift +]	Compensates the exposure making the image brighter.	37
[AE Shift –]	Compensates the exposure making the image darker.	
[Color Bars]	Turns color bars on/off.	29
[Aspect Marker]	Turns the onscreen aspect marker on/off.	50
[Set WB]*	Registers a custom white balance setting or selects the adjustment value for a preset white balance setting/color temperature setting.	43
[Tele-converter]	Activates the digital tele-converter in the following sequence: 20F 2x → 3x → 4x → Off; 200S 2x → 4x → 8x → Off	–
[Infrared]	Turns infrared mode on/off.	51
[External Rec]*	Outputs a recording command to an external recorder to start or stop recording.	63
[Custom Picture]	Opens the [Custom Picture] submenu.	56
[Camera Mode]	Changes the camera mode.	34

* Function can be used only by assigning it to a button.

Custom Picture Settings

The camera lets you change several settings (📖 58) that control various aspects of the image produced. As a set, all these settings are treated as a single custom picture file. After adjusting the desired settings to your preference, you can save up to 4 custom picture files in the camera and load them later to apply exactly the same settings. Alternatively, you can use one of the preset custom picture files.

NOTES

- Custom picture files are exclusively compatible for use only with other ME20F-SH (**20F**) or ME200S-SH (**200S**) cameras.

Selecting Custom Picture Files

Select a custom picture file to apply its settings while shooting or to edit it.

[Custom Picture] ▸ [Select File] ▸ [Off]

1 Open the custom picture file's [Select File] screen.
[Custom Picture] ▸ [Select File]

2 Push the joystick up/down to select the desired file and then press SET.

- Select one of the custom picture files saved in the camera ([CP1] to [CP4], [EOS Std.], [Wide DR], [Canon Log], [Blue Scr], [Green Scr]).
- When you close the menu, the selected custom picture file's settings will be applied.

Preset Custom Picture Files

The following preset custom picture files are protected and cannot be edited.

[EOS Std.]:	Reproduces the image quality and look (vivid, sharp and crisp) of an EOS digital SLR camera with its picture style set to [Standard].
[Wide DR]:	Applies a gamma curve with a very wide dynamic range and an appropriate color matrix that nevertheless do not require post-production processing.
[Canon Log]:	Uses the Canon Log gamma and color matrix for an outstanding dynamic range and an image suitable for processing in post-production.
[Blue Scr], [Green Scr]:	Settings that optimize the color correction for chroma key systems (blue screen or green screen, respectively) that use LED lights and retro-reflective backdrops. They can also be used for chroma key shooting with common blue or green backdrops.

NOTES

- **About changing custom picture related settings using the optional RC-V100 Remote Controller**
  - You can press the remote controller's CUSTOM PICT. button to open the [Custom Picture] submenu.
  - Adjusting custom picture related settings using the remote controller will change the settings registered under the currently selected custom picture file.
  - If a preset custom picture file is selected, custom picture settings cannot be changed using the remote controller.
- If you set an assignable button to [Custom Picture] (📖 54), you can press the button to open the [Custom Picture] submenu.

Editing a Custom Picture File's Settings

1 After selecting an editable file ([CP1] to [CP4]), select [Fine Tuning] and then press SET.

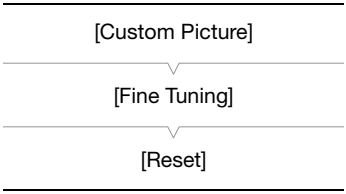
2 Select a setting and then press SET.

3 Change the setting to the desired level and then press SET.
- Refer to *Available Custom Picture Settings* (📖 58) for details on the various settings.
- Repeat steps 2 and 3 for other settings, as necessary.

4 Press the MENU button to close the custom picture menu and apply the new custom picture settings.

Resetting the Current File's Settings to Default Values

1 After selecting an editable file ([CP1] to [CP4]), open the [Reset] submenu.
[Fine Tuning] ❯ [Reset]



2 Select the desired default values and then press SET.
- Select [Neutral] to reset to neutral default values (equivalent to not using custom picture settings at all) or one of the preset settings ([EOS Std.], [Wide DR], [Canon Log], [Blue Scr], [Green Scr] or [Linear]*) if you want to replicate these preset settings, for example as a starting point to edit them further.

* 20F only.

3 Select [OK] and then press SET.

Available Custom Picture Settings

[Gamma]

The gamma curve changes the overall look of the image. (Default: [Normal 1])

[Normal 1]: Standard picture for playback on TV monitors.

[Normal 2]: Setting suitable for playback on TV monitors. Produces brighter highlights (bright areas of the image) than with the [Normal 1] setting.

[Normal 3]: Setting suitable for playback on TV monitors. Produces a more faithful black gradation in the shadows (dark areas of the image) than with the [Normal 2] setting.

[Normal 4]: Setting suitable for playback on TV monitors. Produces even better black gradation in the shadows (dark areas of the image) than with the [Normal 3] setting.

[EOS Std.]: This gamma curve approximates the look of an EOS digital SLR camera when the picture style is set to [Standard] S. Produces higher contrast than with the [Normal 1] setting.

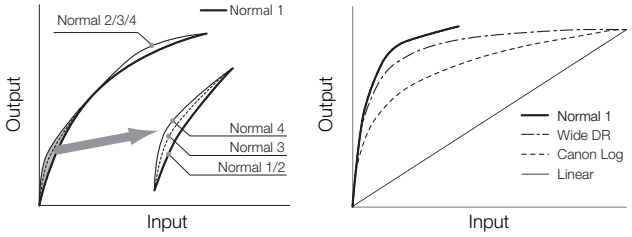
[Wide DR]: Gamma curve with a very wide dynamic range. Optimized for playback on TV monitors.

[Canon Log]: Logarithmic gamma curve that obtains an impressive dynamic range and makes the most of the image sensor characteristics. Requires image processing in post-production.

[Linear]*: Does not apply a gamma curve. Creates a linear relationship between the luminance input and output. Used when processing the input and output data for research and other purposes.

* 20F only.

Gamma



[Black] ❯ [Master Pedestal]

The master pedestal increases or decreases the black level. Higher settings will make dark areas brighter but decrease contrast. This setting can be adjusted from –50 to 50. (Default: ±0)

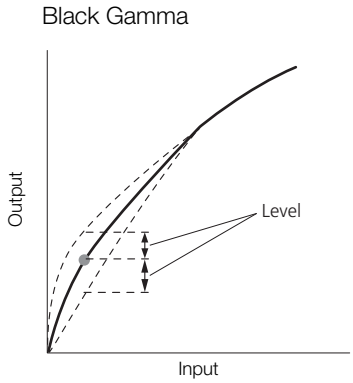
[Black] ❯ [Master Black Red], [Master Black Blue]

These settings correct the color cast in blacks. Each can be adjusted from –50 to +50. (Default: ±0)

[Black Gamma]

Raises or lowers the lower part of the gamma curve (dark areas of the image). When [Gamma] is set to [Wide DR], [Canon Log] or [Linear]*, this setting has no effect on the picture. This setting can be adjusted from
–50 to 50. (Default: ±0)

* 20F only.



[Knee]

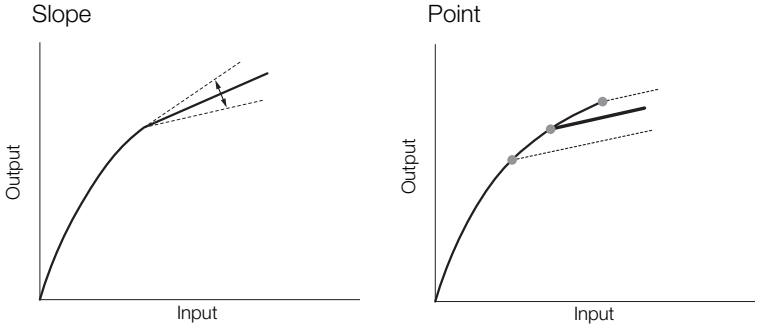
Controls the upper part of the gamma curve (highlights of the image). By compressing the highlights, you can prevent parts of the image from being overexposed. When [Gamma] is set to [EOS Std.], [Wide DR], [Canon Log] or [Linear]*, this setting has no effect on the picture.

[Activate]: Activates/deactivates the setting. (Default: [On])

[Slope]: Determines the slope of the gamma curve above the knee point. This setting can be adjusted from –35 to 50. (Default: ±0)

[Point]: Sets the knee point of the gamma curve. This setting can be adjusted from 50 to 109. (Default: 95)

* 20F only.



[Sharpness]

Sets the sharpness level. This setting can be adjusted from –10 to 50. (Default: ±0)

[Noise Reduction]

Reduces the amount of noise that appears in the image. Select a level from 1 (lowest level) to 12 (highest level), or select [Off] to turn the noise reduction off. (Default: [Off])

[Chroma Key Corr.]

Corrects the blue or green areas of the image to optimize them for a chroma key production. When [Gamma] is set to [Linear]* and when [Color Correction] ❯ [Select Area] is an option other than [Off], this setting has no effect on the picture.

[Color]: Selects whether to correct blue areas or green areas in the image. The available options are [Off], [Blue] and [Green]. (Default: [Off])

[Hue]: Adjusts the hue for the color to be detected. This setting can be adjusted from 0 to 31. (Default: 0)

[Chroma]: Adjusts the color saturation for the color to be detected. This setting can be adjusted from 0 to 31. (Default: 0)

[Area]: Adjusts the color range for the color to be detected. This setting can be adjusted from 0 to 2. (Default: 0)

[Y Level]: Adjusts the brightness for the color to be detected. This setting can be adjusted from –15 to 0. (Default: 0)

* 20F only.

[Color Matrix]

Color matrix affects the color tones throughout the whole image.

[Gain]: Adjusts the color intensity. This setting can be adjusted from -50 to 50. (Default: ±0)

[Phase]: Adjusts the color phase. This setting can be adjusted from -18 to 18. (Default: ±0)

[R-G]: The R-G matrix changes the tint of the picture along the cyan/green and red/magenta gradations. This setting can be adjusted from -50 to 50. (Default: ±0)

[R-B]: The R-B matrix changes the tint of the picture along the cyan/blue and red/yellow gradations. This setting can be adjusted from -50 to 50. (Default: ±0)

[G-R]: The G-R matrix changes the tint of the picture along the magenta/red and green/cyan gradations. This setting can be adjusted from -50 to 50. (Default: ±0)

[G-B]: The G-B matrix changes the tint of the picture along the magenta/blue and green/yellow gradations. This setting can be adjusted from -50 to 50. (Default: ±0)

[B-R]: The B-R matrix changes the tint of the picture along the yellow/red and blue/cyan gradations. This setting can be adjusted from -50 to 50. (Default: ±0)

[B-G]: The B-G matrix changes the tint of the picture along the yellow/green and blue/magenta gradations. This setting can be adjusted from -50 to 50. (Default: ±0)

[White Balance]

Adjusts the amount of white balance throughout the whole image.

[R Gain]: Adjust the intensity of red tones. This setting can be adjusted from –50 to 50. (Default: ±0)

[B Gain]: Adjust the intensity of blue tones. This setting can be adjusted from –50 to 50. (Default: ±0)

[Color Correction]

The camera detects the characteristics of a certain color (color phase, chroma, area and Y level) and corrects them when recording. This is not available when [Chroma Key Corr.] ❯ [Color] is an option other than [Off]. You can set the color correction for up to two different areas (A and B).

[Select Area]: Selects the area or areas to correct. Available options are [Area A], [Area B] and [Area A&B]. Select [Off] to turn this setting off. (Default: [Off])

[Area A Setting]: Determines the area in which colors will be corrected.

- [Phase]: Adjusts the color phase for area A. This setting can be adjusted from 0 to 31. (Default: 0)
- [Chroma]: Adjusts the color saturation for area A. This setting can be adjusted from 0 to 31. (Default: 16)
- [Area]: Adjusts the color range for area A. This setting can be adjusted from 0 to 31. (Default: 16)
- [Y Level]: Adjusts the brightness for area A. This setting can be adjusted from 0 to 31. (Default: 16)

[Area A Revision]: Sets the amount of correction for area A.

- [Level]: Adjusts the amount of correction to the color saturation. This setting can be adjusted from -50 to 50. (Default: ±0)
- [Phase]: Adjusts the amount of correction to the color phase. This setting can be adjusted from -18 to 18. (Default: ±0)

[Area B Setting]: Determines the area in which colors will be corrected.

- [Phase]: Adjusts the color phase for area B. This setting can be adjusted from 0 to 31. (Default: 0)
- [Chroma]: Adjusts the color saturation for area B. This setting can be adjusted from 0 to 31. (Default: 16)
- [Area]: Adjusts the color range for area B. This setting can be adjusted from 0 to 31. (Default: 16)
- [Y Level]: Adjusts the brightness for area B. This setting can be adjusted from 0 to 31. (Default: 16)

[Area B Revision]: Sets the amount of correction for area B.

- [Level]: Adjusts the amount of correction to the color saturation. This setting can be adjusted from -50 to 50. (Default: ±0)
- [Phase]: Adjusts the amount of correction to the color phase. This setting can be adjusted from -18 to 18. (Default: ±0)

NOTES

- When an optional RC-V100 Remote Controller is connected to the camera, the following custom picture settings can be changed using the buttons and dials on the remote controller.
  - [Black] ❯ [Master Pedestal], [Master Black Red], [Master Black Blue]
  - [Black Gamma]
  - [Knee] ❯ [Slope], [Point]
  - [Sharpness]
  - [White Balance] ❯ [R Gain], [B Gain]

Customizing Onscreen Displays

Custom displays allow you to choose whether individual onscreen displays will appear on the shooting screen. For details on which onscreen displays can be customized, refer to *Onscreen Displays* (📖 29).

1 Open the [Custom Display] submenu.
[Other Functions] ❯ [Custom Display]

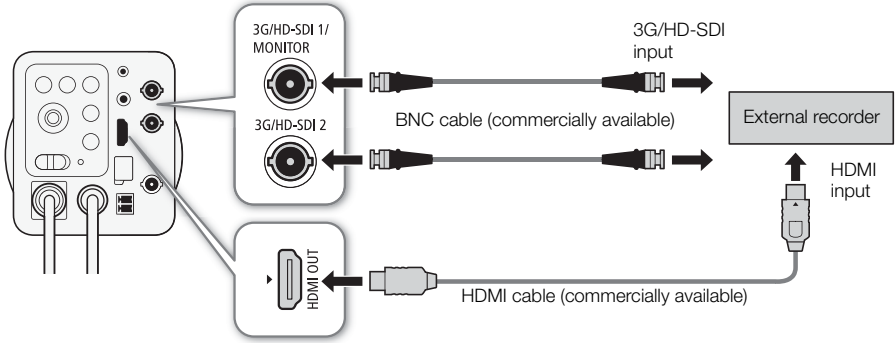
[Other Functions]
[Custom Display]

2 Select the desired onscreen display.
3 Change the setting option and then press SET.
- For most settings, select [On] to display the selected onscreen element, or [Off] to hide it.
- The [Date/Time] setting allows you display the date and/or time on the shooting screen.

5 External Connections

Connecting to an External Recorder

Connect the camera to an external recorder using the 3G/HD-SDI 1 / MONITOR terminal, 3G/HD-SDI 2 terminal or HDMI OUT terminal. Use the terminal on the camera that matches the one you wish to use on the external recorder. For details on compatible external recorders, consult the retail dealer from whom you purchased the camera or contact a Canon Service Center. For details on connecting the camera to an external monitor, refer to *Connecting to an External Monitor* (19).



Outputting a Recording Command to an External Recorder

You can use an assignable button set to [External Rec] or an optional RC-V100 Remote Controller to output a recording command to an external recorder connected to the camera to start or stop recording.

1 Set an assignable button to [External Rec].
[Other Functions] ❯ [Assignable Buttons] ❯ Desired button ([1] to [4 (Remote)]) ❯ [External Rec]

2 Press the assignable button to output a recording command to start recording.
- Alternatively, when an optional RC-V100 Remote Controller is connected to the camera, you can press the remote controller's START/STOP button.
- [Rec] will appear on the right of the screen.

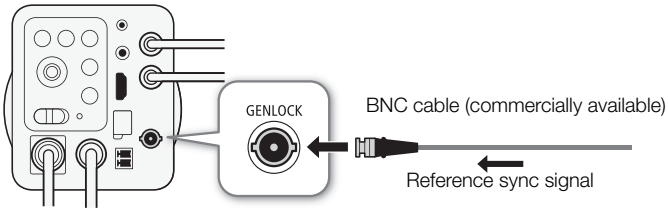
3 Press the assignable button again to output a recording command to stop recording.
- [Rec] will disappear.

NOTES
- If the recording command does not seem to be output when you press the assignable button, make sure that the [Audio/Video Setup] ❯ [Rec Command] ❯ [Activate] setting is set to [On].
- You can use the [Audio/Video Setup] ❯ [Rec Command] ❯ [Remove OSD] setting to automatically turn off the camera's onscreen displays whenever a recording command is being output.

- While a recording command is being output, the following settings are not available to be changed.
  - [Camera Setup] ❯ [ABB]
  - [Audio/Video Setup] ❯ [3G-SDI Mapping], [Rec Command]
  - [Other Functions] ❯ [Reset], [Time Zone], [Set Clock] ❯ [Date/Time], [Assignable Buttons], [System Frequency], [Frame Rate (MON.)], [Resolution], [Genlock Adjustment], [Camera Name]

Synchronizing with an External Device

Using Genlock synchronization, you can synchronize this camera's video signal to that of an external video device. When a reference sync signal (analog blackburst or tri-level HD signal) is input through the GENLOCK terminal, the phases of the camera's V and H sync will automatically be synchronized to it. The phase difference between the external Genlock signal and the camera is initially set to 0. The H phase can be adjusted within the range of approximately ±0.4 H (–1023 to 1023).



1 Open the [Genlock Adjustment] submenu.
[Other Functions] ❯ [Genlock Adjustment]

2 Push the joystick up/down to select the value of the first field and then press SET to move to the next field.
- Change the rest of the fields in the same way to select the desired adjustment level (–1023 to 1023).

3 Select [Set] and then press SET.

[Other Functions]
[Genlock Adjustment]
[000]

NOTES
- When a suitable Genlock signal is input, the Genlock synchronization stabilizes within approximately 10 seconds.
- When a suitable Genlock signal is detected, [Gen.] will flash on the upper right of the screen. When the camera locks on the external Genlock signal, [Gen.] will stop flashing and stay on.
- If the external Genlock signal is incorrect, the synchronization may not be stable.

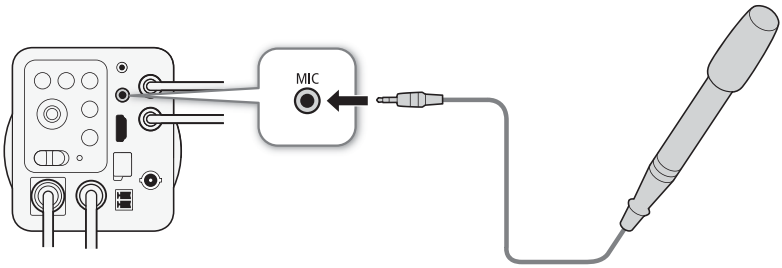
Audio Input and Output

You can connect a commercially available microphone with a ∅ 3.5 mm stereo mini plug to the MIC terminal. The audio from the external microphone will be output from the 3G/HD-SDI 1 / MONITOR terminal, 3G/HD-SDI 2 terminal and HDMI OUT terminal.

Audio Input

Connection Diagram

If you connect a commercially available plug-in power microphone (generally, an electret condenser microphone that requires external power), you will need to perform the procedure below to supply power to the MIC terminal.



Supplying Power to a Plug-in Power Microphone

1 Open the [MIC Power] submenu.
[Audio/Video Setup] ❯ [MIC Power]
2 Select [On] and then press SET.

[Audio/Video Setup]
[MIC Power]
[Off]

IMPORTANT

- Supplying power to a microphone without plug-in power functionality may damage the microphone.

Audio Output

The camera features 2-channel linear PCM audio output. The sampling frequency is 48 kHz and the audio bit depth is 16 bit. The audio from the external microphone will be output with the video signal from the 3G/HD-SDI terminals and HDMI OUT terminal and can be recorded with an external recorder connected to the camera.

6 Additional Information

Menu Options

For details about how to select an item, refer to *Using the Menu* (📖 21). Setting options in boldface indicate default values.
Depending on the camera's settings, some menu items may not be available. Such menu items do not appear or appear grayed out in menu screens.

To skip directly to the page of a specific menu:

[Camera Setup] menu 📖 67
[Custom Picture] menu 📖 70
[Audio/Video Setup] menu 📖 70
[Other Functions] menu 📖 71

[Camera Setup] menu

Menu item	Submenu / Setting options
[Light Metering]	[Backlight], **[Standard]**, [Spotlight] Selects the light metering mode (📖 38). [Backlight]: Suitable when shooting backlit scenes. [Standard]: Averages the light metered from the entire screen, giving more weight to the subject in the center. [Spotlight]: Use this option when shooting a scene in which only a certain part of the picture is lit, for example, when the subject is lit by a spotlight.
[AE Shift]	[+2.0], [+1.75], [+1.5], [+1.25], [+1.0], [+0.75], [+0.5], [+0.25], **[±0]**, [-0.25], [-0.5], [-0.75], [-1.0], [-1.25], [-1.5], [-1.75], [-2.0] You can compensate the exposure obtained automatically (camera modes other than [Manual], or while using push auto iris with the camera mode set to [Manual]), in order to darken or lighten the image (📖 37).
[AE Response]	[High], **[Normal]**, [Low] Determines how quickly the aperture changes during auto exposure (camera modes other than [Manual], or while using push auto iris with the camera mode set to [Manual]).
[AGC Limit]	20F **[Off (75dB)]** to [36dB] (in 3-dB increments) 200S **[Off (56dB)]**, [54dB] to [30dB] (in 3-dB increments) You can set an automatic gain control (AGC) limit to prevent the camera from using gain values higher than the preset limit when the camera mode is set to a mode other than [Manual] (📖 39).
[Auto Slow Shutter]	**[On]**, [Off] Determines the shutter speed used when the camera mode is set to [Auto] or [Av]. When this setting is set to [Off], the camera will not use shutter speeds slower than the frame rate currently used.

Menu item	Submenu / Setting options
[Flicker Reduction]	[Automatic], **[Off]** Allows the camera to automatically detect and correct flicker caused by artificial light sources.
[Shockless WB]	[On], **[Off]** When this setting is set to [On], makes the transition look smoother when the white balance is changed.
[Iris Increment]	**[1/2 stop]**, [1/3 stop], [Fine] Determines the aperture value increment used when adjusting the aperture. When this setting is set to [Fine], the increments will be smaller than 1/3 stop.
[Zoom-Iris Correct.]	**[On]**, [Off] If you are using a compatible lens*, when this setting is set to [On], the camera will adjust the aperture as needed to keep the selected aperture value while zooming. Because of this adjustment, the brightness of the image might change slightly or you may hear the operation sound. When this setting is set to [Off], the aperture will close gradually (the image will turn darker) as you zoom but you will not hear the aperture's operation sound. * Some EF lenses and EF Cinema lenses are not compatible with this function.
200S [AF Mode]	**[One Shot]**, [Continuous (Always On)], [Continuous (Auto Off)] Determines the autofocus mode (📖 45). [One Shot]: The camera focuses automatically one time. [Continuous (Always On)]: The camera focuses continuously on a subject at the center of the screen and adjusts the focus automatically. [Continuous (Auto Off)]: The camera focuses automatically most of the time. However, when shooting in dark surroundings with the camera mode set to [Auto], the continuous AF function will be deactivated if the gain value reaches a predetermined level to prevent unreliable focus operations. When continuous AF has stopped working, [C. AF] will appear in gray. This setting has no effect when the camera mode is set to [Manual].

Menu item	Submenu / Setting options	
[Focus Limit]	[Activate]	[On], **[Off]**
	Turns the focus limit on/off (📖 47).	
	[Far]	[Set], [Reset], [Cancel]
	Allows you to set the far end of the focus limit for the attached lens (📖 47). When a focus limit has not been set, [Limit Off] will appear on the submenu screen. [Set]: Saves the current focus position for the far end of the focus limit. [Reset]: Clears the currently set focus position. [Cancel]: Cancels the operation.	
	[Near]	[Set], [Reset], [Cancel]
	Allows you to set the near end of the focus limit for the attached lens (📖 47). When a focus limit has not been set, [Limit Off] will appear on the submenu screen. [Set]: Saves the current focus position for the near end of the focus limit. [Reset]: Clears the currently set focus position. [Cancel]: Cancels the operation.	
[Focus Control]	**[Camera]**, [Lens]	
	Determines the signal path used to adjust the focus. [Camera]: Default setting for most cases. [Lens]: You can adjust the focus using an accessory connected to the lens but you will not be able to use the camera's autofocus functions or an optional RC-V100 Remote Controller connected to the camera to adjust the focus.	
[Tele-converter]	20F [4x], [3x], [2x], **[Off]**; 200S [8x], [4x], [2x], **[Off]**	
	Allows you to digitally increase the focal length of the camera by approximately the selected factor. Note that the image is digitally processed so the image will deteriorate throughout the zoom range.	
[EF-S Lens]	[On], **[Off]**	
	When this setting is set to [On], reduces the peripheral illumination fall-off or vignetting that may occur when using an EF-S lens or EF Cinema lens (20F only) with this camera. However, the image is digitally enlarged by a factor of approx. 1.55 (20F) or 1.04 (200S) so the image will deteriorate.	
[ABB]	[Cancel], [OK]	
	Starts the procedure to adjust the black balance automatically (📖 23).	
[Color Bars]	[Activate]	[On], **[Off]**
	Turns color bars on/off.	
	[Type]	**[SMPTE]**, [ARIB] (when the system frequency is 59.94 Hz) **[EBU]**, [SMPTE] (when the system frequency is 50.00 Hz)
	Selects the type of color bars. The default setting depends on the country/region of purchase.	
[Infrared]	[On], **[Off]**	
	Turns infrared mode on/off (📖 51).	

Menu item	Submenu / Setting options
[ND Mode]	**[Automatic]**, [Manual]
	Determines how the ND filter is adjusted when the camera mode is set to a mode other than [Manual]. [Automatic]: The ND filter is adjusted automatically by the camera. [Manual]: The ND filter can be adjusted manually (🕮 41).
[Periph.Illum.Corr.]	[On], **[Off]**
	When this setting is set to [On] and the camera has correction data for the attached lens, it compensates for the darkening of the image's corners (peripheral illumination drop) due to the lens's characteristics. If correction data for the lens is not available, the setting will appear grayed out. Note that depending on the shooting conditions, noise may appear in the periphery of the image as a result of the correction. Also, the level of correction will be lower the higher the gain level used. 20F To apply the peripheral illumination correction when using an EF-S lens or EF Cinema lens, be sure to set both this setting and also the [Camera Setup] ❯ [EF-S Lens] setting to [On].

[Custom Picture] menu

Menu item	Submenu / Setting options
[Select File]	**[Off]**, [CP1] to [CP4], [EOS Std.], [Wide DR], [Canon Log], [Blue Scr], [Green Scr]
	Selects a custom picture file to apply its settings while shooting or to edit it.
[Fine Tuning]	See the detailed explanations on pages 58 to 61.

[Audio/Video Setup] menu

Menu item	Submenu / Setting options
[MIC Power]	[On], **[Off]**
	When this setting is set to [On], the camera supplies power to a plug-in power microphone connected to the MIC terminal (🕮 66). IMPORTANT • Supplying power to a microphone without plug-in power functionality may damage the microphone.
[1kHz Tone]	[-12dB], [-18dB], [-20dB], **[Off]**
	Outputs a 1-kHz audio reference signal from the 3G/HD-SDI terminals and HDMI OUT terminal.
[3G-SDI Mapping]	[Level A], **[Level B]**
	Allows you to select a 3G-SDI mapping level, as defined by the SMPTE ST 425-1 standard, for the video output signal of the 3G/HD-SDI terminals.

Menu item	Submenu / Setting options	
[Rec Command]	[Activate]	**[On]**, [Off]
	When this setting is set to [On], you can use an assignable button set to [External Rec] or an optional RC-V100 Remote Controller to output a recording command to an external recorder connected to the camera to start or stop recording (63).	
	[Remove OSD]	[On], **[Off]**
	When this setting is set to [On], the camera's onscreen displays will be turned off automatically while a recording command is being output.	

[Other Functions] menu

Menu item	Submenu / Setting options	
[Reset]	[All Settings]	[Cancel], [OK]
	Resets all the camera's settings to default settings, except for the hour meters displayed in the [Other Functions] ❯ [Reset Hour Meter] submenu.	
	[Camera Settings]	[Cancel], [OK]
	Resets the white balance, iris, gain, shutter speed, ND filter, custom picture, focus limit and other shooting-related settings to default settings.	
[Time Zone]	List of world time zones. **[UTC-05:00 New York]** or **[UTC+01:00 Central Europe]**	
	Sets the time zone for the camera's clock. The default value depends on the country/region of purchase.	
[Set Clock]	[Date/Time]	–
	Sets the date and time for the camera's clock (20).	
	[Date Format]	[YMD], [YMD/24H], **[MDY]**, [MDY/24H], **[DMY]**, [DMY/24H]
	Sets the date format and time format for the camera's clock. The default value depends on the country/region of purchase.	
[REMOTE B Term.]	**[RC-V100]**, [NU Protocol]	
	To use the REMOTE B terminal on the optional RC-V100 Remote Controller, select [RC-V100]. [NU Protocol] refers to a Canon proprietary communication protocol that makes connecting to certain accessories possible.	
[Assignable Buttons]	[1] to [4 (Remote)]	[(NONE)], [One-Shot AF], [Push Auto Iris], **[ABB] ([3])**, [AE Shift +], [AE Shift -], **[Color Bars] ([1])**, [Aspect Marker], **[Set WB] ([2])**, [Tele-converter], **[Infrared] ([4 (Remote)])**, [External Rec], [Custom Picture], [Camera Mode]
	Allows you to assign a function to an assignable button. The number in parentheses above indicates the assignable button to which the default setting in bold next to it is assigned (54). Assignable button 4 is located on the optional RC-V100 Remote Controller but the button's function can be assigned without connecting the RC-V100 to the camera.	

Menu item	Submenu / Setting options	
[Power LED]	**[On]**, [Off]	
	Allows you to set whether the POWER indicator illuminates while the camera is on.	
[Fan Speed]	**[Automatic]**, [High], [Middle], [Low]	
	Sets the cooling fan's speed. If you select [Automatic], the camera will adjust the speed of the cooling fan based on the camera's internal temperature.	
[System Frequency]	**[59.94Hz]**, **[50.00Hz]**	
	Sets the camera's system frequency (📖 32). The default value depends on the country/region of purchase.	
[Frame Rate (MON.)]	[59.94P], [59.94P (i)], **[59.94i]**, [29.97P], [23.98P] (when the system frequency is 59.94 Hz) [50.00P], [50.00P (i)], **[50.00i]**, [25.00P], [25.00PsF] (when the system frequency is 50.00 Hz)	
	Sets the camera's frame rate (📖 32). The default value depends on the country/region of purchase.	
[Resolution]	**[1920x1080]**, [1280x720]	
	Sets the camera's resolution (📖 32).	
[Genlock Adjustment]	[-1023] to [1023] (**[000]**)	
	Allows you to adjust the H phase of an external Genlock signal (📖 65).	
[Scan Reverse]	[Both], [Vertical], [Horizontal], **[Off]**	
	Inverts the image horizontally and/or vertically.	
[Aspect Marker]	[Activate]	[On], **[Off]**
	Turns the onscreen aspect marker on/off (📖 50).	
	[Color]	[Black], **[Gray]**, [White]
	Determines the color of the aspect marker.	
	[Ratio]	[4:3], [4:3 S35mm] (20F only), [1.66:1], [1.85:1], **[2.39:1]**
	Determines the aspect ratio indicated by the aspect marker.	

Menu item	Submenu / Setting options	
[Custom Display]	[Camera Name]	**[On]**, [Off]
	[Date/Time]	[Date/Time], [Time], [Date], **[Off]**
	200S [Continuous AF]	**[On]**, [Off]
	[White Balance]	**[On]**, [Off]
	[Camera Mode]	**[On]**, [Off]
	[Iris]	**[On]**, [Off]
	[Gain]	**[On]**, [Off]
	[Shutter Speed]	**[On]**, [Off]
	[ND Filter/Infrared]	**[On]**, [Off]
	[Custom Picture]	**[On]**, [Off]
	[Lens Error]	**[On]**, [Off]
	[Temperature Warning]	**[On]**, [Off]
	These settings allow you to customize the shooting screen by turning on/off individual onscreen displays (📖 62). For details about the onscreen displays that each setting controls, refer to *Onscreen Displays* (📖 29). [Date/Time]: Allows you display the date and/or time on the shooting screen.	
[Camera Name]	[ ] (space), [A] to [Z], [a] to [z], numbers, special characters, [Set]	
	Allows you to enter a name (up to 16 characters) to identify the camera. The camera name will appear on the screen by default. Push the joystick up/down to select the desired character and then press SET to move to the next field. You can press MENU to delete a character. When finished, select [Set] and then press SET.	
[Reset Hour Meter]	[Cancel], [OK]	
	The camera has two “hour meters” – the first keeps track of total operation time and the second keeps track of operation time since the last time the second hour meter was reset with this setting.	
[Initialize Media]	(Used only for firmware updates.)	
	Initializes the microSD card used when updating the firmware. This menu option is usually unavailable.	
[Firmware]	–	
	You can verify the current version of the camera’s firmware. This menu option is usually unavailable.	

Troubleshooting

If you have a problem with your camera, refer to this section. Consult your dealer or a Canon Service Center if the problem persists.

While changing the video configuration, the image from the camera stopped being displayed on the external monitor.

You may have set a system frequency or frame rate not supported by the external monitor. You can use the assignable buttons* to restore the default settings.

- If you had set a frame rate other than 59.94i or 50.00i before the image disappeared: Press and hold simultaneously assignable buttons 1 and 3 until the power indicator goes off**. When you release the buttons, the camera will restart with the frame rate set to the default setting for the current system frequency (59.94i or 50.00i).
- If you had changed the system frequency before the image disappeared: Press and hold simultaneously assignable buttons 1 and 3 until the power indicator goes off**. When you release the buttons, the camera will restart with the system frequency changed back to its original setting (output at the default frame rate of 59.94i or 50.00i).

* To use the assignable buttons on the optional RC-V100 Remote Controller, it must be connected to the camera using the REMOTE B terminal.

** Even when [Other Functions] ❯ [Power LED] is set to [Off], the power indicator will illuminate when the two assignable buttons are pressed and held at the same time.

The optional RC-V100 Remote Controller does not work.

- Make sure that MENU ❯ [Other Functions] ❯ [REMOTE B Term.] is set to [RC-V100].

Onscreen Warning Displays and Messages

Refer to this section if a warning display or message appears on the screen. Should the camera fail to operate correctly, consult a Canon Service Center.

[Temp.] appears in red on the screen.

- The camera's internal temperature has risen to a predetermined level. Set [Other Functions] ❯ [Fan Speed] to [Automatic] or [High]. If [Temp.] continues to appear on the screen after a period of time, turn off the camera and wait until the temperature has decreased. If that does not solve the problem, consult a Canon Service Center.

[Fan] appears in red on the screen.

- The cooling fan may not be working properly. Consult a Canon Service Center.

[Lens] appears in red on the screen.

- There was a communication error between the camera and the lens. Turn the camera off and then on again. Alternatively, turn off the camera, remove the lens, and clean the lens's contact. Next, reattach the lens. If that does not solve the problem, consult a Canon Service Center.

[ABB error] appears on the screen.

- An error occurred while the camera was automatically adjusting the black balance. Make sure that the body cap or a compatible EF Cinema lens (📖 80) is firmly attached to the camera blocking light from entering the camera. Next, perform the operation again. If that does not solve the problem, consult a Canon Service Center.

Built-in Rechargeable Lithium Battery

The camera has a built-in rechargeable lithium battery to keep the date/time and other settings. The built-in lithium battery is recharged while you use the camera; however, it will discharge completely if you do not use the camera for about 3 months.

To recharge the built-in lithium battery: Power the camera with an external power supply for 24 hours while the camera is turned off.

Maintenance/Others

Cleaning

Camera Body

- Use a soft, dry cloth to clean the camera's body. Never use chemically treated cloths or volatile solvents such as paint thinner.

Lens

- Remove any dust or dirt particles using a non-aerosol type blower.
- Use a clean, soft lens-cleaning cloth to gently wipe the lens. Never use tissue paper.

Condensation

Moving the camera rapidly between hot and cold temperatures may cause condensation (water droplets) to form on its internal surfaces. Stop using the camera if condensation is detected. Continued use may damage the camera.

Condensation may form in the following cases:

- When the camera is moved quickly from cold to warm places
- When the camera is left in a humid room
- When a cold room is heated rapidly

To avoid condensation

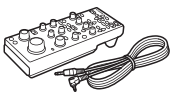
- Do not expose the camera to sudden or extreme changes in temperature.
- Place the camera in an airtight plastic bag and let it adjust gradually to temperature changes before removing it from the bag.

When condensation is detected

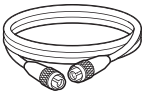
The precise time required for water droplets to evaporate will vary depending on the location and weather conditions. As a general rule, wait for 2 hours before resuming use of the camera.

Optional Accessories

The following optional accessories are compatible with this camera. The availability differs from area to area.



RC-V100
Remote Controller



RR-10 8-pin Remote Cable
(10 m, 32.8 ft.),
RR-100 8-pin Remote Cable
(100 m, 328 ft.)



TB-1 Tripod Adapter Base

For our customers in the USA: Call or visit your local retailer/dealer for genuine Canon video accessories. You can also obtain genuine accessories for your Canon camera by calling: 1-800-828-4040, Canon U.S.A. Information Center.

Use of genuine Canon accessories is recommended.
This product is designed to achieve excellent performance when used with genuine Canon accessories.

This mark identifies genuine Canon video accessories.

Specifications

ME20F-SH / ME200S-SH

System

- Image Sensor

  20F
  35mm full-frame CMOS sensor
  Effective pixels (approximate): 2,260,000 pixels

  200S
  Super-35mm-equivalent CMOS sensor
  Effective pixels (approximate): 8,290,000 pixels

- 20F Minimum subject illumination (ISO 4,000,000 equivalent)
  Less than 0.0005 lux[1]
  [1] Under the following conditions: color, no light accumulation, f/1.2, shutter speed 1/30, 50 IRE, maximum gain 75 dB.

- 200S Subject Illumination (56 dB, with an f/1.2 lens)
  59.94 Hz: 0.021 lux (29.97P, shutter speed 1/30)
  50.00 Hz: 0.018 lux (25.00P, shutter speed 1/25)

- Lens Mount
  Canon EF mount (Cinema Lock type)
  200S Lens multiplication factor for 35mm equivalent focal length (approximate): 1.534

- System Frequency: 59.94 Hz, 50.00 Hz

- Frame Rate
  59.94 Hz: 59.94P, 59.94i[2], 29.97P, 23.98P
  50.00 Hz: 50.00P, 50.00i[2], 25.00P, 25.00PsF[2]
  [2] Only when the resolution is 1920x1080.

- Exposure: AE shift, light metering modes (standard, spotlight, backlight)

- White Balance
  Automatic white balance; custom white balance (two sets, [WB-A] and [WB-B]); two preset settings (daylight, 5,500 K[3] and incandescent lamp, 3,000 K[3]); color temperature setting (2,000 K to 15,000 K)
  [3] Color temperatures are approximate and given for reference purposes only.

- Iris
  Manual (1/2-stop increments, 1/3-stop increments, fine adjustment), push auto iris, automatic aperture (linked with gain, shutter speed and ND filter)

- Gain
  20F 0.0 dB to 75.0 dB (3.0-dB increments)
  200S 0.0 dB to 56.0 dB (in 3.0-dB increments between 0.0 and 54.0 dB)

- Shutter speed: 1/3 to 1/2000 (specific values depend on the system frequency and frame rate)

- Optical filters
  ND filter: Built-in (two density levels, 1/8 or 1/64), motor operated, automatic/manual
  Infrared-cut filter: Motor operated, manual only

- Focus: Manual focus, one-shot AF, 200S only: continuous AF

- Lens Correction
  Peripheral illumination correction is available for Canon EF lenses[4]
  [4] Some Canon EF lenses are not compatible with peripheral illumination correction.
- Gamma: Normal (4 types), EOS Std., Wide DR, Canon Log, Linear*
  * 20F only.

Terminals

- 3G/HD-SDI 1 / MONITOR Terminal, 3G/HD-SDI 2 Terminal
  BNC jack, output only, 0.8 Vp-p / 75 Ω, unbalanced; onscreen displays can be oputput[5]
  3G-SDI: SMPTE 424, SMPTE 425, SMPTE ST 299-2
  HD-SDI: SMPTE 292, SMPTE ST 299-1
  [5] 3G/HD-SDI 1 / MONITOR terminal only.
- HDMI OUT Terminal
  Type A, output only; onscreen displays can be output
  1080P/1080i/720P/576P[6]/480P[6]
  [6] A 480P/576P video signal is output only when a monitor that supports only 480P/576P is connected to the camera.
- MIC Terminal
  ∅ 3.5 mm stereo mini-jack; power can be supplied to a plug-in power microphone
  Supplied power: 2.8 V DC (bias resistance 2.2 kΩ)
- GENLOCK Terminal
  BNC jack, input only, 1.0 Vp-p / 75 Ω
- REMOTE A Terminal, REMOTE B Terminal
  REMOTE A: ∅ 2.5 mm stereo sub-mini jack
  REMOTE B: Circular 8-pin jack (for RS-422)
- LENS terminal
  Circular 12-pin jack

Power/Others

- Power Supply: Input range of 11 to 17 V DC
- Power Consumption (camera body only): 20F Approx. 12 W; 200S Approx. 11 W
- Operating Temperature: 0 – 40 °C (32 – 104 °F)
- Dimensions (W x H x D, excluding protrusions): Approx. 102 x 116 x 113 mm (4.0 x 4.6 x 4.4 in.)
- Weight (camera body only): 20F Approx. 1,100 g (2.4 lb.); 200S Approx. 1,000 g (2.2 lb.)

Weight and dimensions are approximate. Errors and omissions excepted.

Appendix: Compatible Lenses and Functions

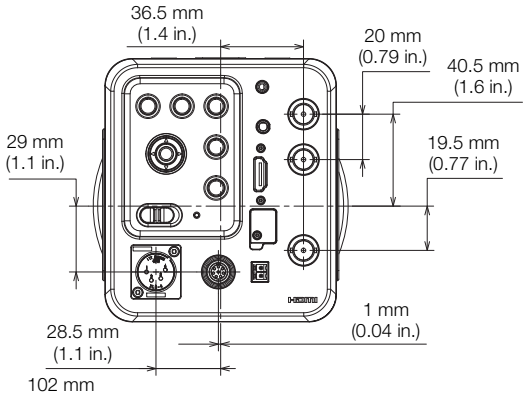
Following is a list of lenses compatible with this camera and the various functions that can be used depending on the lens. Depending on the lens's purchase date, you may need to update the lens's firmware to use these functions. For details, consult a Canon Service Center.
Visit your local Canon website for the latest information about compatible lenses.

Lens	12-pin interface cable	Iris control from the camera		Focus control from the camera	
		Manual	Push auto iris	Manual*	AF
EF lenses		●	●	●	●
EF Cinema lenses					
CN7x17 KAS S/E1	Required**	●	●	●	●
CN20x50 IAS H/E1	Required**	●	●	●	–
CN-E18-80mm T4.4 L IS KAS S CN-E70-200mm T4.4 L IS KAS S		●	●	●	●

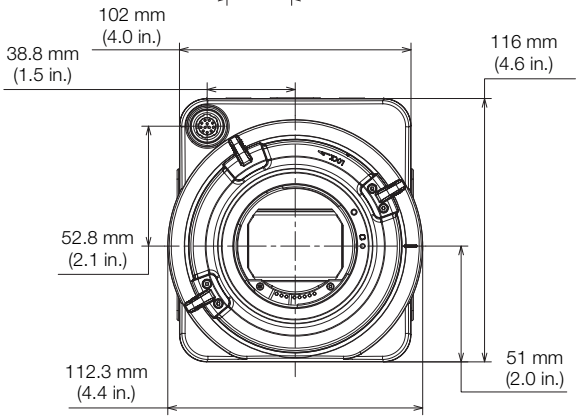
* When an optional RC-V100 Remote Controller is connected to the camera.
** If the lens's drive unit is powered from an independent power source, the connection to the camera is not required.

Appendix: Physical Measurements

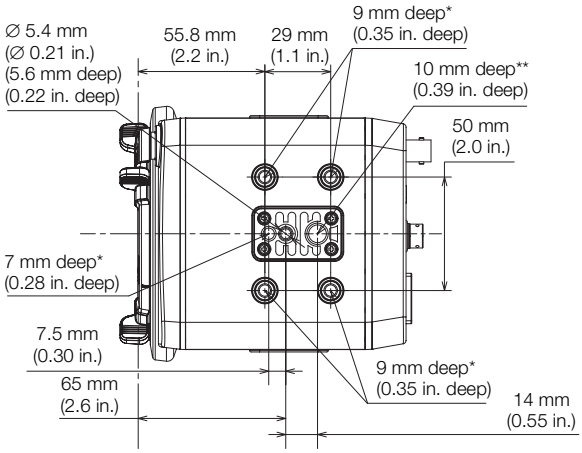
Back view



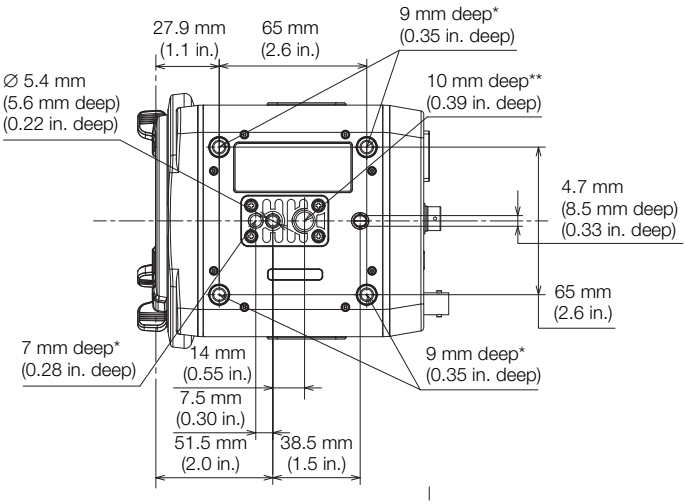
Front view



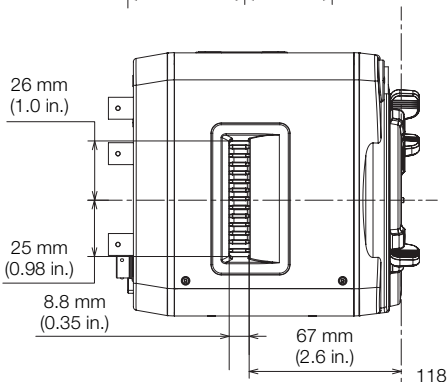
Top view



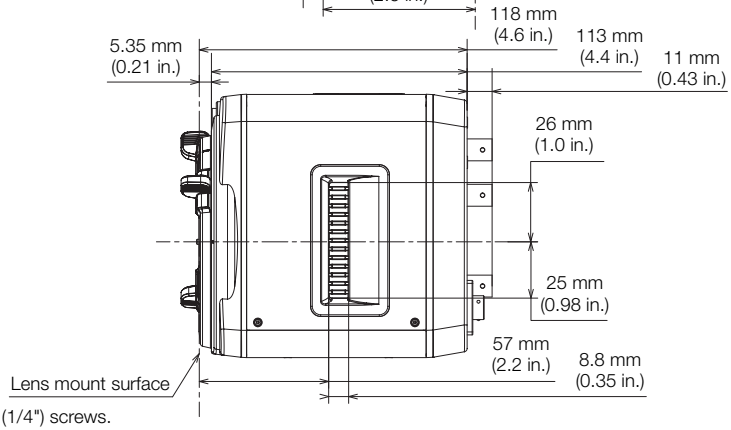
Bottom view



Right side view



Left side view



* Socket for 0.64 cm (1/4") screws.
** Socket for 0.95 cm (3/8") screws.

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USA

CANON MULTI-PURPOSE CAMERA EQUIPMENT LIMITED WARRANTY FOR PRODUCTS PURCHASED IN THE UNITED STATES

The Limited Warranty set forth below is given by Canon U.S.A., Inc. ('Canon USA') with respect to the Canon multi-purpose camera (the "Product") when purchased and used in the United States. This Limited Warranty is only effective upon presentation of your Bill of Sale or other proof of purchase. The Product, when delivered in new condition in its original container, is warranted to the original end-user purchaser, under normal use against defective materials or workmanship as follows: Parts: for a period of one (1) year from the date of original purchase, defective parts or defective Products returned to Canon USA or its designated Factory Service Center in the United States, and proven to be defective upon inspection, will be repaired with new or comparable rebuilt parts or exchanged for refurbished Products, as determined by Canon USA or its designated Factory Service Center . Labor: for a period of one (1) year from the date of original purchase, labor will be provided free of charge by Canon USA's designated Factory Service Center. When returning the Product under this warranty, you must pre-pay the shipping charges and enclose a copy of the Bill of Sale or other proof of purchase with a complete explanation of the problem. During the one (1) year warranty period, repairs will be made and the Product will be return-shipped to you free of charge. For repairs after the warranty period is over, you will be given an estimate of the cost of repair and an opportunity to approve or disapprove of the repair expense before it is incurred. If you approve, repairs will be made and the Product will be returned to you at your risk and expense. If you disapprove, we will return-ship the Product to you at no charge to you to an address within the United States.

Canon USA will have no responsibility under this Limited Warranty for use of the Product in conjunction with any accessories or peripheral equipment, and/or with any software, that may be used with the Product. The sole warranty, if any, with the respect to any other accessories, peripheral equipment and/or software that may be used with the Product is given by the manufacturer, licensor, or producer thereof.

In order to obtain warranty service, please contact the CANON INFORMATION CENTER AT 800-OK-CANON (800-652-2666) or on the Internet at pro.usa.canon.com/support. This Limited Warranty covers all defects encountered in normal use of the Product and does not apply in the following cases:

(a) Loss or damage to the Product due to abuse, mishandling, accident, improper maintenance, improper packing by you, alteration, accident, electrical current fluctuations, use of non-Canon accessories, peripheral equipment and/or software (except for those genuine Canon-brand items expressly specified by Canon USA as compatible with the Product), or failure to follow operating, maintenance or environmental instructions prescribed in Canon user's manual;
(b) Defects or damage caused by sand, dirt or water, or by service other than Canon USA's Factory Service Centers;
(c) Use of parts or supplies (other than those sold by Canon USA) that cause damage to the Product or abnormally frequent service calls or service problems;
(d) Products whose hardware or firmware has been modified;
(e) Maintenance of the Product;
(f) Products that have their serial number or dating altered or removed;
(g) Damage or service resulting from modifications or alterations to a Product in any way;
(h) Corrosion damage, or scratches, or abrasions;
(i) Damage caused by dropping the Product.

NO IMPLIED WARRANTY, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE APPLIES TO THIS PRODUCT AFTER THE APPLICABLE PERIOD OF EXPRESS WARRANTY OR GUARANTY STATED ABOVE, AND NO OTHER EXPRESS WARRANTY OR GUARANTY (EXCEPT AS MENTIONED ABOVE) GIVEN BY ANY PERSON, FIRM OR CORPORATION WITH RESPECT TO THIS PRODUCT SHALL BIND CANON USA . CANON USA SHALL NOT BE LIABLE FOR LOSS OF REVENUES OR PROFITS, EXPENSE FOR SUBSTITUTE PRODUCT OR SERVICE, STORAGE CHARGES, LOSS OR CORRUPTION OF DATA, INCLUDING WITHOUT LIMITATION, LOSS OR CORRUPTION OF DATA STORED ON ANY PERIPHERAL DEVICE OR ACCESSORY SUCH AS, FOR EXAMPLE, A RECORDING DEVICE ATTACHED TO THE PRODUCT, OR ANY OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY THE

USE, MISUSE OR INABILITY TO USE THE PRODUCT, REGARDLESS OF THE LEGAL THEORY ON WHICH THE CLAIM IS BASED, AND EVEN IF CANON USA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. NOR SHALL RECOVERY OF ANY KIND AGAINST CANON USA BE GREATER THAN THE PURCHASE PRICE OF THE PRODUCT SOLD BY CANON USA AND CAUSING THE ALLEGED DAMAGE. WITHOUT LIMITING THE FOREGOING, YOU ASSUME ALL RISK AND LIABILITY FOR LOSS, DAMAGE OR INJURY TO YOU AND YOUR PROPERTY AND TO OTHERS AND THEIR PROPERTY ARISING OUT OF USE, MISUSE OR INABILITY TO USE THE PRODUCT NOT CAUSED DIRECTLY BY THE NEGLIGENCE OF CANON USA.THIS WARRANTY SHALL NOT EXTEND TO ANYONE OTHER THAN THE ORIGINAL PURCHASER OF THIS PRODUCT OR THE PERSON FOR WHOM IT WAS PURCHASED AS A GIFT, AND STATES YOUR EXCLUSIVE REMEDY.

Canon U.S.A., Inc.

CANADA

CANON MULTI-PURPOSE CAMERA EQUIPMENT LIMITED WARRANTY FOR PRODUCTS PURCHASED IN CANADA

The Limited Warranty set forth below is given by Canon Canada Inc. ('Canon Canada') with respect to the Canon multi-purpose camera (the "Product") when purchased and used in Canada. This Limited Warranty is only effective upon presentation of your Bill of Sale or other proof of purchase. The Product, when delivered in new condition in its original container, is warranted to the original end-user purchaser, under normal use against defective materials or workmanship as follows: Parts: for a period of one(1) year from the date of original purchase, defective parts or defective Products returned to Canon Canada or its designated Factory Service Centre in Canada, and proven to be defective upon inspection, will be repaired with new or comparable rebuilt parts or exchanged for refurbished Products, as determined by Canon Canada or its designated Factory Service Centre. Labour: for a period of one (1) year from the date of original purchase, labour will be provided free of charge by Canon Canada's designated Factory Service Centre. When returning the Product under this warranty, you must pre-pay the shipping charges and enclose a copy of the Bill of Sale or other proof of purchase with a complete explanation of the problem. During the one (1) year warranty period, repairs will be made and the Product will be return-shipped to you free of charge. For repairs after the warranty period is over, you will be given an estimate of the cost of repair and an opportunity to approve or disapprove of the repair expense before it is incurred. If you approve, repairs will be made and the Product will be returned to you at your risk and expense. If you disapprove, we will return-ship the Product to you at no charge to you to an address within Canada.

Canon Canada will have no responsibility under this Limited Warranty for use of the Product in conjunction with any accessories or peripheral equipment, and/or with any software, that may be used with the Product. The sole warranty, if any, with the respect to any other accessories, peripheral equipment and/or software that may be used with the Product is given by the manufacturer, licensor, or producer thereof.

In order to obtain warranty service, please contact the CANON INFORMATION CENTRE AT 800-OK-CANON (800-652-2666) or on the Internet at canon.ca/support. This Limited Warranty covers all defects encountered in normal use of the Product and does not apply in the following cases:

(a) Loss or damage to the Product due to abuse, mishandling, accident, improper maintenance, improper packing by you, alteration, accident, electrical current fluctuations, use of non-Canon accessories, peripheral equipment and/or software (except for those genuine Canon-brand items expressly specified by Canon Canada as compatible with the Product), or failure to follow operating, maintenance or environmental instructions prescribed in Canon user's manual;
(b) Defects or damage caused by sand, dirt or water, or by service other than Canon Canada's Factory Service Centres;
(c) Use of parts or supplies (other than those sold by Canon Canada) that cause damage to the Product or abnormally frequent service calls or service problems;
(d) Products whose hardware or firmware has been modified;
(e) Maintenance of the Product;
(f) Products that have their serial number or dating altered or removed;
(g) Damage or service resulting from modifications or alterations to a Product in any way;
(h) Corrosion damage, or scratches, or abrasions;
(i) Damage caused by dropping the Product.

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RECORDING DEVICE ATTACHED TO THE PRODUCT, OR ANY OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY THE USE, MISUSE OR INABILITY TO USE THE PRODUCT, REGARDLESS OF THE LEGAL THEORY ON WHICH THE CLAIM IS BASED, AND EVEN IF CANON CANADA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. NOR SHALL RECOVERY OF ANY KIND AGAINST CANON CANADA BE GREATER THAN THE PURCHASE PRICE OF THE PRODUCT SOLD BY CANON CANADA AND CAUSING THE ALLEGED DAMAGE. WITHOUT LIMITING THE FOREGOING, YOU ASSUME ALL RISK AND LIABILITY FOR LOSS, DAMAGE OR INJURY TO YOU AND YOUR PROPERTY AND TO OTHERS AND THEIR PROPERTY ARISING OUT OF USE, MISUSE OR INABILITY TO USE THE PRODUCT NOT CAUSED DIRECTLY BY THE NEGLIGENCE OF CANON CANADA. THIS WARRANTY SHALL NOT EXTEND TO ANYONE OTHER THAN THE ORIGINAL PURCHASER OF THIS PRODUCT OR THE PERSON FOR WHOM IT WAS PURCHASED AS A GIFT, AND STATES YOUR EXCLUSIVE REMEDY.

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