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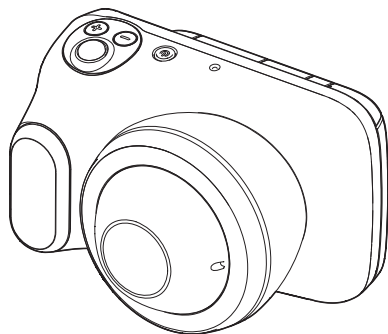
 D'Z IMAGE

**CASIO®**

DERMOCAMERA

Model **DZ-D100**

# User's Guide



Thank you for purchasing this CASIO product.

- Be sure to keep all user documentation handy for future reference.

## Indications for Use

The Dermocamera DZ-D100 is a camera intended to capture high quality dermoscopic images.

## Rx only

## Operating Principle

Image data captured from the lens is converted to electrical signals by a CMOS imaging element inside the camera and displayed as an image on the camera's LCD monitor.

The operator composes the image to be photographed while viewing the image shown on the LCD monitor and takes the photograph by pressing the shutter button. The image captured by the CMOS imaging element is converted to electrical signals and the photographed image is saved onto a memory card.

The special lens built into the camera allows the subject to be photographed at a distance, in the same way as a conventional digital camera, and also allows subjects such as skin lesions to be photographed by placing the lens directly onto the skin. Such close-up shots are taken using illumination from an LED light inside the lens. Because the LED light used for illumination is fitted with a polarizing filter, the operator can switch between polarized and non-polarized lighting.



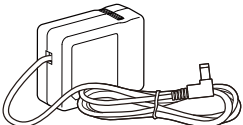
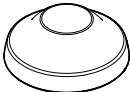
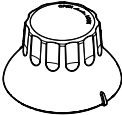

## Intended use

This camera can be used to photograph the skin in close-up or at a distance. Close-up shots of the skin are taken using illumination from an LED light inside the lens. Shots taken at a distance can also be illuminated using the ring light around the outside of the lens. This camera allows you to use the same camera to record both enlarged images of a skin lesion and overall images of the area containing the lesion. The LED light in this camera can be switched between polarized and non-polarized, allowing you to photograph images of both the dermis and the epidermis with a single press of the shutter button.

Use of this Dermocamera is restricted to physicians and other healthcare professionals.

## Checking the Accessories

When you open the package, check that it contains all the accessories listed below. If any items are missing, refer to the contact information in "Inquiries Regarding Functioning, Operation or Purchase".

 <p>DERMOCAMERA (Model DZ-D100)</p>	 <p>Lithium-ion battery (Model DNP-100M)</p>	 <p>AC adapter for camera charging</p>
 <p>Lens cap</p>	 <p>Lens removal tool</p>	 <p>Quick Start Guide</p>

Refer to the pages below for information on how to use the accessories.

Lithium-ion battery	pages 37, 38
AC adapter for camera charging	page 38
Lens cap	page 27
Lens removal tool	page 28

## Important Information

- The contents of this manual are subject to change without notice.
- The contents of this manual have been checked at each step of the production process. Feel free to contact us if you notice anything that is questionable, erroneous, etc.
- Any copying of the contents of this manual, either in part or its entirety, is forbidden. Except for your own personal use, any other use of the contents of this manual without the permission of YAMAGATA CASIO CO., LTD. is forbidden under copyright laws.
- YAMAGATA CASIO CO., LTD. accepts no liability whatsoever beyond the scope of the manufacturer's liability as stipulated by the Medical Device Regulation (MDR) with respect to damages or lost income or any claims by third parties arising from the use of or faults in this product.
- YAMAGATA CASIO CO., LTD. shall not be held liable for any damages or lost profits caused by loss of memory contents due to malfunction, repair, or any other reason.
- Note that the example screens and product illustrations shown in this manual may differ somewhat from the screens and configuration of the actual camera.
- Any serious incident that has occurred in relation to the device should be reported to us and the competent authority of the Member State in which you are established.

### LCD Panel

The liquid crystal panel of the monitor screen uses high-precision technology that provides a pixel yield in excess of 99.99%. This means that some very small number of pixels may not light or may remain lit at all times. This is due to the characteristics of the liquid crystal panel, and does not indicate malfunction.

#### Take test shots

Before shooting your final image, shoot a test shot to ensure that the camera is recording correctly.



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





## Icons & Symbols

Icon / Symbol	Description / Function	Reference
	An information display icon. Tapping this icon allows you to toggle between showing and hiding information on the screen. This can be selected in both recording mode and playback mode.	
	The icon shown when the information display selector icon cannot be tapped.	
	An icon showing that the scale is not displayed. Tapping this icon displays the scale on the screen. The icon display changes.	
	An icon showing that the scale is displayed. Tapping this icon displays the grid on the screen. The icon display changes.	
	An icon showing that the grid is displayed. Tapping this icon removes the grid display from the screen. The icon display changes.	
	The icon shown when the scale display icon cannot be tapped.	
	The icon displayed when the brightness adjustment for the light is set to AUTO. You can change the brightness of the light by tapping the light selector icon.	
	The icon displayed when the light brightness is set to LOW. You can change the brightness of the light by tapping the light selector icon.	







Icon / Symbol	Description / Function	Reference
	The icon displayed when the light brightness is set to MID. You can change the brightness of the light by tapping the light selector icon.	
	The icon displayed when the light brightness is set to HIGH. You can change the brightness of the light by tapping the light selector icon.	
	The icon displayed when the light is OFF. You can change the brightness of the light by tapping the light selector icon.	
	The icon shown when the light selector icon cannot be tapped.	
	An icon showing the filter setting. This icon appears when the polarizing filter is not being used.	
	An icon showing the filter setting. This icon appears when the polarizing filter is being used.	
	An icon showing the filter setting. This icon is displayed when 405 nm light is being used.	
	The icon shown when the filter setting icon cannot be tapped.	
	The icon to tap when you want to configure various settings. Tap this icon when configuring the camera settings, turning Wi-Fi ON/OFF, specifying the camera's self-timer setting, or configuring the photography settings when the small-diameter adapter is used.	
	The icon to tap when you want to change the camera settings. Tap this icon to transition to the camera's settings screen.	

Icon / Symbol	Description / Function	Reference
	<p>The icon to tap when you want to enable or disable the camera's Wi-Fi connection.</p> <p>This icon appears when the Wi-Fi connection is enabled. Tapping this icon disables the Wi-Fi connection.</p>	
	<p>The icon to tap when you want to enable or disable the camera's Wi-Fi connection.</p> <p>This icon appears when the Wi-Fi connection is disabled. Tapping this icon enables the Wi-Fi connection.</p>	
	<p>An icon showing that the self-timer is disabled.</p> <p>Tapping this icon enables the self-timer (2 sec.).</p>	
	<p>An icon showing that the self-timer is enabled (2 sec.).</p> <p>Tapping this icon disables the self-timer.</p>	
	<p>The icon shown when the self-timer icon cannot be tapped.</p>	
	<p>An icon showing the photography mode with the small-diameter adapter (sold separately) fitted.</p> <p>Tapping this icon transitions to the photography mode with the small-diameter adapter not fitted.</p>	
	<p>An icon showing the photography mode with the small-diameter adapter (sold separately) not fitted.</p> <p>Tapping this icon transitions to the photography mode with the small-diameter adapter fitted.</p>	
	<p>The icon shown when the adapter selector icon cannot be tapped.</p>	
	<p>The icon to tap when you want to shoot still images.</p>	

Icon / Symbol	Description / Function	Reference
	The icon to tap when you want to start shooting a movie.	
	The icon to tap when you want to stop movie shooting. Tapping this icon while you are playing a recorded movie returns you to the starting screen for movie playback.	
	The icon to tap when you want to play a recorded movie.	
	An icon showing that a still image or movie you have shot is shown in normal display. Tapping this icon switches the screen to list display (4-frame display).	
	An icon showing that a still image or movie you have shot is shown in list display (4-frame display). Tapping this icon switches the screen to list display (9-frame display).	
	An icon showing that a still image or movie you have shot is shown in list display (9-frame display). Tapping this icon switches the screen to list display (16-frame display).	
	An icon showing that a still image or movie you have shot is shown in list display (16-frame display). Tapping this icon switches the screen to list display (4-frame display).	
	The icon to tap when you want to delete recorded data.	
	The icon to tap when you want to pause movie playback.	
	The icon to tap when you want to return to the start of a movie during playback.	

Icon / Symbol	Description / Function	Reference
	The icon to tap when you want to set the movie volume. Tapping this icon displays the volume setting icon.	
	An icon showing that the movie volume setting is mute. Tapping this icon displays the volume setting icon.	
	An icon showing the current digital zoom magnification.	
	An icon showing the current exposure value (EV).	
	An icon displayed during movie volume setting. You can increase the volume by tapping the + icon. You can decrease the volume by tapping the – icon.	
	The icon to tap when you want to apply the camera settings.	
	The icon to tap when you want to return to the previous screen.	
	Indicates a general, non-specific warning	ISO 7010-W001
	IEC60417-5840 type B applied part Marking placed on devices (applied parts) that are only applied to the surface of the body.	IEC60417-5840



Icon / Symbol	Description / Function	Reference
	<p>A mark given to ME equipment that is designed such that it has functioning double insulation or reinforced insulation composed of both basic insulation and supplementary insulation for Class II.</p>	IEC60417-5172
	<p>Power (standby).</p>	IEC60417-5009
	<p>A mark indicating direct current (DC).</p>	IEC60417-5031
	<p>A mark applied to equipment that complies with JEITA unified polarity.</p>	JEITA CP-1104B-01030
	<p>A mark indicating that the equipment is specified for indoor use only.</p>	
	<p>A symbol which represents compliance with EESS and ACMA's labelling requirements (RCM).</p>	

## Safety Precautions

Thank you for purchasing this CASIO product.

- Be sure to read these "Safety Precautions" before trying to use it. After reading the User's Guide, keep it in a safe place for future reference.



### **DANGER**

Indicates something that creates a major risk of death or serious personal injury.

---



### **WARNING**

Indicates something that creates a risk of death or serious personal injury.

---



### **CAUTION**

Indicates something that creates a risk of minor personal injury or physical damage.

---

## Symbol Examples










This circle with a line through it (⊘) means that the indicated action must not be performed. Indications within or nearby this symbol are specifically prohibited. (The example at left indicates that disassembly is prohibited.)



The black dot (●) means that the indicated action must be performed. Indications within this symbol are actions that are specifically instructed to be performed. (The example at left indicates that the power plug must be unplugged from the electrical socket.)

# DANGER

## Rechargeable Battery Precautions

-  **Charge a battery using only the method specifically described in user documentation.**  
Use of another method creates the risk of battery overheating, fire, and rupture.  
**Do not allow a battery to come into contact with fresh water, salt water, or other moisture. Do not use a battery that is wet.**  
Doing so creates the risk of battery overheating, fire, and rupture.
-  **Use only the specified type of equipment.**  
Use of the wrong equipment creates the risk of battery overheating, fire, and rupture.  
**Observe the precautions below in order to avoid battery overheating, fire, and rupture.**
- 
  - Always use only the specified type of battery.
  - Do not expose a battery to fire or heat.
- 
  - Load a battery with its poles (plus (+) and minus (--)) facing correctly.
- 
  - Do not carry or store a battery together with necklaces, coins, or other metal objects.
  - Do not try to disassemble or modify a battery, pierce it with a needle, subject it to strong impact (by stepping on it etc.), or apply solder directly to it.
  - Do not put a battery into a microwave oven, dryer, high-pressure vessel, etc.
  - Do not peel the external decorative sticker from a battery.
-  **Immediately after noticing any fluid leak, abnormal odor, overheating, discoloration, deformation or other battery abnormality, very carefully remove the battery from the product and/or charger. Keep the removed battery away from fire.**  
**Do not use a battery exhibiting any abnormality.**  
Continued use creates the risk of battery overheating, fire, and rupture.
-  **Do not use or leave a battery in a location exposed to direct sunlight, in an automobile parked outside, near open flame, a stove, or in any location subjected to high heat.**  
Such conditions create the risk of battery overheating, fire, and rupture. They also can cause a battery swell, making it impossible to remove.

 **DANGER**



**Should fluid from a battery get on your skin or clothing, immediately rinse it off with clean water.**

Fluid creates the risk of skin irritation.

Battery fluid getting into the eyes creates the risk of eyesight loss, etc.

Immediately rinse the eyes and then contact a physician.

# **WARNING**

## **AC Adapter**

**Observe the precautions below in order to avoid AC adapter fire and electric shock.**



- Use only the specified type of AC adapter.



- Use only the included power cord.



- Use the AC adapter only with the device specified for it.
- Do not plug the power cord into an outlet with the wrong voltage rating.
- Do not plug into an overloaded extension cord or power outlet.
- Do not cover the power cord with a blanket or other material during use, and keep it away from heating devices.
- Do not place heavy objects on the power cord and do not leave it bundled during use.
- Do not place heavy objects on the power cord and do not bundle it with cables.
- Do not subject a power cord to heat or attempt to modify it, and avoid damaging it.
- Do not subject the power cord to excessive bending, twisting, or pulling.



**Do not touch the plug with wet hands.**

Doing so creates the risk of electric shock.



**If the AC adapter or power cord becomes damaged, contact your original retailer.**

Continued use creates the risk of fire and electric shock.

**Do not use the AC adapter while it is wet.\***

**\* Avoid water, sports drinks, seawater, animal or pet urine, and other liquid.**

Liquid creates the risk of fire and electric shock.

**Do not place a flower vase or any other liquid container on top of the AC adapter or power cord.**

Water creates the risk of fire and electric shock.



**Before leaving the product unattended, unplug the AC adapter from the power outlet, and move the product to a location away from animals and pets.**

Pet chewing or urine can cause shorting, which creates the risk of fire.



**If thunder and lightning have begun, do not touch any equipment that is plugged into a mains power socket.**

Doing so can result in an electric shock.

## **WARNING**

### **Storage and Operation Locations**



**Do not store or use the product in any of the locations described below.**

Doing so creates the risk of fire and electric shock.

- Areas subjected to large amounts of moisture and dust
- Food preparation areas, near a humidifier, or in areas where the product is exposed to oil smoke or water vapor
- Near a heating device, on an electric carpet, in a location exposed to direct sunlight, in a car parked outside, or any other area where the product is subjected to high temperatures.



**Do not place the product on an unsteady platform, on a high shelf, or in any other unstable location.**

Dropping and tipping over creates the risk of personal injury.

### **Abnormalities (Smoke, Odor, Heat Generation, etc.)**



**Do not use the product if it is emitting smoke, odor, heat, or exhibiting any other abnormality. Do not use the product after it has been dropped or otherwise damaged.**

Doing so creates the risk of fire and electric shock. Immediately perform the steps below.

1. Turn off power.
2. If you are using an AC adapter, unplug its power plug from the power outlet.
3. Contact your original retailer.

### **Display Screen**



**Do not press the LCD or subject it to strong impact.**

Doing so can cause the LCD glass to crack, creating the risk of personal injury.



**Should the LCD become cracked, never touch any of the liquid inside.**

LCD liquid getting on the skin creates the risk of skin irritation.

Should LCD liquid get into your mouth, immediately rinse your mouth out and contact your physician.

Should LCD liquid get in your eyes or on your skin, rinse with clean water and then contact your physician.

## **WARNING**

### **Disassembly and Modification**



**Do not attempt any disassembly or modification. For any internal inspection, adjustment, or repair, contact your original retailer.**

Doing so creates the risk of electric shock, burn injury, and personal injury.

### **Avoiding Water and Foreign Matter**



**Do not allow water, other liquids (sports drinks, seawater, animal or pet urine, etc.), or foreign objects (metal fragments, etc.) to get into the product or the AC adapter. Should any such matter get into the product, immediately perform the steps below.**

Continued use creates the risk of fire and electric shock.

Particular care is required when using the product when it is raining or snowing, near the ocean or other body of water, or in a bathroom.

1. Turn off power.
2. If you are using the AC adapter to power the product, unplug the power plug from the power outlet or remove the battery from the camera.
3. Contact your original retailer.



**Do not locate a flower vase or other liquid container on top of or next to the product or AC adapter.**

Liquid spilling from a container creates the risk of fire and electric shock.

### **Memory Cards**



**Store memory cards out of the reach of small children.**

Should a card be swallowed accidentally, immediately contact a physician.

### **Precautions During Camera Operation**








**Do not maintain contact with the camera for long periods while it is operating.**

The product becomes warm when on, and creates the risk of low-temperature burns.

## **WARNING**





### **Effect on Other Electronic Devices**

-  **Should you notice radio interference or other problems on other devices is being caused while using this product, do not use the wireless function.**  
Use of wireless functions creates the risk of radio interference and abnormal operation of other devices.
-  **When traveling on an aircraft, comply with the airline company's instructions.**  
**Do not use in locations where the use of this device is prohibited.**  
Electromagnetic waves and other emissions from this camera could affect instrumentation and cause an accident.
-  **Do not use the product in the vicinity of high-precision electronic equipment or any electronic equipment that handles weak signals.**  
Doing so can cause misoperation and other problems in the electronic equipment, and creates the risk of accident.
-  **Keep this product away from the chest area of any individual fitted with a cardiac pacemaker.**  
Cardiac pacemakers and similar devices can be affected by electromagnetism.
-  **Turn off the wireless function and the product while on a train or in any other crowded location.**  
When near a person wearing a cardiac pacemaker or other medical devices, radio waves may affect such devices and cause them to malfunction, creating the risk of accident.










## CAUTION

### Rechargeable Battery Precautions

-  **If a battery is not charged even if the specified charging time is exceeded, stop charging.**  
Failure to do so creates the risk of battery overheating, fire, and rupture.
-  **Keep batteries away from children.**  
**When using a rechargeable battery, keep it away from children when it is removed from the charger and/or product.**
-  **Do not leave a battery near areas used by pets.**  
Pets chewing on a battery creates the risk of fluid leaking, overheating, fire, and rupture.
-  **Do not use a battery that is severely swollen.**  
Doing so may make it impossible to remove the battery from the product. If this happens, contact your original retailer.

### AC Adapter

**Observe the precautions below in order to avoid AC adapter fire and electric shock.**

- 
  - Do not cover the power cord with a blanket or other material during use, and keep it away from heating devices.
- 
  - Insert the power plug into the outlet as far as it will go.
- 
  - After use, unplug the power plug from the power outlet.
- 
  - When unplugging the power plug, do not pull on the power cord. Grasp the plug.
- 
  - If you do not plan to use the product for a long time, unplug from the power outlet.
- 
  - At least once a year, unplug the power plug from the power outlet and use a dry cloth to wipe away any dust buildup from the area between the prongs of the plug.
- 
  - Do not use detergent when cleaning the power cord, especially the power plug and jack parts.

## CAUTION

### User Maintenance



**Before cleaning the product, turn off power and unplug the AC adapter from the power outlet.**

Failure to do so creates the risk of electric shock.

Leaving the AC adapter plugged in creates the risk of damage to the power cord, fire, and electric shock.

### Cleaning Instructions



**Clean the camera with an isopropyl alcohol wipe (70%) before and after each use. Allow device dry for two minutes after wiping with alcohol wipe.**

### Connections



**Connect only specified devices and items to connectors.**

Connecting to other devices and items creates the risk of fire and electric shock.

### Backing Up Important Data



**Always keep backup copies of important data by transferring it to a computer or other storage device.**

Note that data can be deleted in the case of product malfunction, repair, etc.

### Memory Protection






**Follow proper procedures as explained in the user documentation when replacing the memory card or battery.**

Failure to do so creates the risk of data loss or corruption.



## CAUTION





### LED and Other Light Emitting Functions











-  **Do not fire the LED light or other light emitting functions while pointed in the direction of and too close to a person's face.**  
Doing so creates the risk of reduced vision. In the case of young children in particular, keep at least one meter away from the eyes.
-  **Take care that your fingers, gloves, or other items are not touching the LED light window.**  
Touching the LED light window can lead to burn injury, smoke, discoloration, or malfunction.
-  **Do not fire the LED light while the LED light window is dirty, dusty, or soiled with foreign matter.**  
Doing so can lead to smoke emission and discoloration.

## Notes on Using the Camera

### ■ Notes on Handling the Camera

This camera is a precision device. Applying undue force to the lens in particular can cause damage or a fault. Take special note of the following:

	Use the camera indoors (consulting/examination rooms, home health care, etc.).
	Do not leave the LED light switched on for extended periods.
	Do not use this camera around people fitted with devices such as pacemakers.
	Do not operate with wet hands.
	Do not subject the camera to sterilization using equipment such as an autoclave.
	Do not use lighting or communications equipment that emits electromagnetic waves near this camera. Doing so could cause a malfunction.
	When taking photos, take care not to hit the lens against other objects, drop the camera or otherwise subject the camera to strong impacts.
	Do not use the camera in ways that subject the lens to excessive force, such as holding the camera by the lens when taking photos.
	When carrying the camera in a bag or other container, avoid subjecting the camera to excessive force. Take particular care to protect the lens, such as by fitting the lens cap provided.
	Hold on to the strap when taking pictures to avoid dropping the camera.
	Do not drop the camera or otherwise subject it to strong impacts.
	Do not attempt any disassembly or modification.
	Check that the rechargeable battery is fully charged and take care to ensure that the battery does not run out of charge while you are using the camera.

	<p>During observations and photography, hold the camera grip securely and take care not to drop it.</p> <p>Particularly when working above the patient, take care not to drop the camera onto the patient.</p>
	<p>Carefully check the recording mode (NORMAL or DERMO) when taking pictures to ensure that the mode is correct for the site being photographed.</p>
	<p>Depending on the recording mode, the LED light may be on or off, or may illuminate a different area. Take care shining the light at other people.</p> <p>Take particular care not to shine the LED light into other people's eyes.</p>
	<p>Both during normal use and when being replaced, the rechargeable battery, AC adapter and cables used with the camera must always be the specified products. The use of other products may lead to faults or malfunctions.</p> <p>It may also result in lowered resistance to external electromagnetic waves and/or an increase in unwanted electromagnetic wave emissions.</p>
	<p>Avoid using the camera close to or stacked on top of other equipment. Doing so could cause a malfunction.</p>
	<p>If you notice any unusual odors, overheating, discoloration, distortion or any other abnormality when using, charging or storing this camera, immediately stop using the camera. Continued use of the camera could cause the battery to overheat, rupture or catch fire.</p>
	<p>If the battery leaks fluid or emits unusual odors, immediately move it away from any exposed flame. Otherwise, the leaked electrolyte could ignite and explode or catch fire.</p>
	<p>The AC adapter for camera charging, HDMI cable and micro USB cable should be disconnected from the camera when not being used.</p>
	<p>When the AC adapter for camera charging, HDMI cable or micro USB cable is connected to the camera, avoid applying undue force to the connector on the camera. Doing so could damage the connector.</p>
	<p>User should install an anti-virus, anti-malware or other suitable firewall to its chosen software system.</p>

**Even during the warranty period, charges will apply to any repairs for faults caused by damage to camera components such as the lens, LCD monitor or internal circuit boards where that damage arises from handling errors, such as external pressure, impacts or being dropped.**

## ■ Notes on Storing the Camera

- Storage temperature:  $-20^{\circ}\text{C}$  to  $60^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $140^{\circ}\text{F}$ )
- Storage humidity: 10% to 85% (non-condensing)
- Switch the camera off, wipe the lens and camera body clean and store the camera in a clean location.
- Store the camera in a location that is not subject to high temperatures or humidity or exposed to direct sunlight.
- Store the camera out of the reach of children.
- Do not store the camera in an elevated or other location from which it could fall and be damaged and/or cause injury.
- If the camera will not be used for an extended period, store it with the rechargeable battery removed from the camera body.

## ■ Notes on Data Errors

This camera is made up of precision electronic components. Handling the camera in any of the ways listed below could result in the corruption of data in the camera.

- Removing the battery or memory card during camera operation
- Removing the battery or memory card when you have switched the camera off and the operation check indicator is flashing green
- Disconnecting the USB cable during communication
- Continuing to use a battery that immediately goes flat after being charged
  - Continuing to use a battery that immediately goes flat after being charged could damage the camera. Install a new replacement battery immediately.
- Other abnormal operations

In such cases, a message may appear on the screen (page 101). Respond as directed by the message.

## ■ Operating environment

- Operating temperature requirements:  $10^{\circ}\text{C}$  to  $30^{\circ}\text{C}$  ( $50^{\circ}\text{F}$  to  $86^{\circ}\text{F}$ )
- Operating humidity: 10% to 85% (non-condensing)
- Do not place this camera in the following locations:
  - Very humid, dusty or gritty locations or in direct sunlight
  - Locations subject to extreme variations in temperature or humidity, such as close to heating or cooling units
  - Inside a vehicle on a sunny day or in locations subject to frequent vibrations
  - Locations accessible to children
  - In an elevated or other location from which the camera could fall and be damaged and/or cause injury
- The camera should be used in a dedicated medical treatment facility or home health care situation.

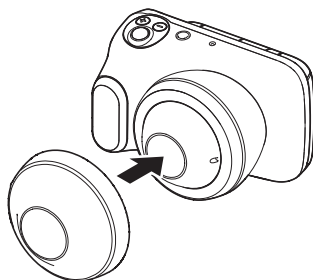
## ■ Condensation

If the camera is suddenly moved between locations with very different temperatures, such as from outdoors on a cold, midwinters day to a heated room indoors, water droplets (condensation) may form on the inside and outside of this camera and cause a fault. To prevent condensation in such situations, place the camera in a sealed plastic bag before moving it. Then wait until it has fully adjusted to the ambient temperature before taking it out of the bag and leaving it for several hours with the battery cover open.

## ■ Lens

Do not forcefully rub the lens surface as this could scratch the surface or damage the lens unit.

After use, protect the lens by attaching the lens cap provided.

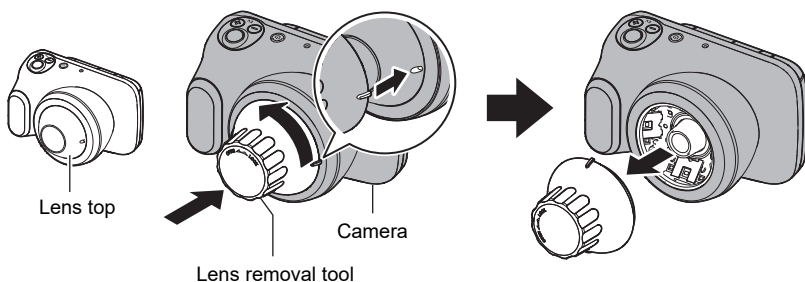


## ■ Maintenance for the inside of the lens

If dirt or dust gets into the lens, use the procedure below to clean it.

### 1. Fit the lens removal tool and remove the lens top from the camera body.

Align the lug on the lens removal tool with the notch in the lens top.



---

### 2. Use a blower or similar tool to blow out any dirt or dust that has got into the lens.

---

### 3. Use the lens removal tool to re-attach the lens top to the camera body.

When attaching the lens top to the camera body, rotate the lens top until the notch is back in its original position.

#### NOTE

- Note that you should only remove the lens when absolutely necessary, as doing so can result in dirt getting into the lens.



## ■ LED light

- Do not look directly at the LED light or look directly into the close-up lens at the front of the camera when it is switched on. This could lead to the eye being exposed to strong light which could cause impaired eyesight.
- When photographing close to the eye, take care not to shine light directly into the the eye.
- Using the light at the HIGH brightness setting for long periods can cause the temperature of the light at the tip of the close-up section to exceed 41°C (106°F), reaching a maximum of 46°C (115°F). Be sure to switch the light off when not taking pictures.

## ■ Notes on handling this camera and Options

- Disposal and recycling should be carried out in accordance with the directions given by your local government authority for environmental protection.

## ■ Notes on using Wi-Fi function (wireless LAN)

- Because this product uses wireless communication, it may affect or be affected by nearby equipment.
- This product is subject to the Export Administration Regulations (EAR) of the United States and cannot be taken or exported to countries that are embargoed under those regulations.

### **Radio transmission interception**

Data transmitted via radio waves can be intercepted by a third party. Please bear this in mind.

### **Unauthorized access**

YAMAGATA CASIO CO., LTD. accepts no liability whatsoever for any loss or damages due to the use of this product or unauthorized access to contacts stored in this product arising from its loss or theft.

### **Use of this camera as a wireless device**

The Wi-Fi function in this product should be used within the limitations stated in this User's Guide. YAMAGATA CASIO CO., LTD. accepts no liability whatsoever from any damages arising from other uses of this product.

### **Connections to public LANs**

This camera cannot make a wireless LAN connection via a public wireless LAN.

### **Intended region**

Use of this camera in a country or area other than where it was originally purchased runs the risk of being in violation of local radio laws and other laws. Note that YAMAGATA CASIO CO., LTD. shall not be held in any way liable for any such violations.

## ■ Other notes

- This camera heats up slightly when being used. This is normal and does not indicate a fault.
- Keep any portable wireless communications devices (including peripheral devices such as antenna cables and external antennas) at least 30 cm (11.8") away from this camera. Proximity to such equipment may impair device performance.

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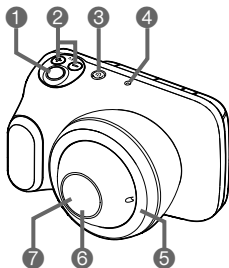
## Maintenance and Cleaning for the Camera

- Do not touch the lens surface or LED light.
- Check that there is no dirt or dust on the close-up lens at the front of the camera. If any dirt or dust is found, use the tool provided to detach the close-up lens and then remove any soiling.
- Before and after use, use clean gauze or soft cloth soaked in ethanol for disinfection at the appropriate dilution to wipe any soiling off the close-up lens.
- Before and after each use, use an isopropyl wipe 70% or solution containing at least 70% isopropyl to wipe, clean and disinfect the camera, specifically the parts of the camera that have touched the patient or the user, and allow to dry for 2 minutes before next use.
- If using gel, use a non-toxic water-soluble gel. After using gel, take particular care to wipe the area around the close-up lens at the front of the camera clean.
- Before and after use, check that there is no soiling, chipping or splitting in the camera body and the close-up lens at the front of the camera.
- Do not use damaged equipment.

## Component Names

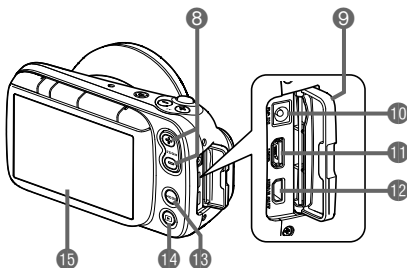
Numbers in parentheses ( ) indicate the main page on which the component is described.

### Front



- ① Shutter button
- ② EV button (exposure compensation)
- ③ [⏻] (Power) button/  
Operation check indicator
- ④ Microphone
- ⑤ LED light (lens surround)
- ⑥ Lens\*
- ⑦ LED light (lens interior)

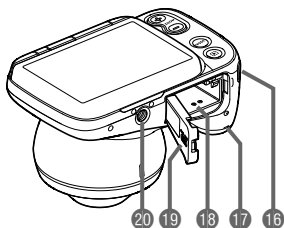
### Rear



- ⑧ Zoom button (pages 49, 50, 64, 71)
- ⑨ Connector cover
- ⑩ [DC IN] jack
- ⑪ [USB] port (page 82)
- ⑫ [HDMI OUT] port
- ⑬ [MODE] button
- ⑭ [▶] (Playback) button  
(pages 43, 48, 50)
- ⑮ LCD monitor (pages 34, 36, 48)

\* Directly touches healthy skin. (Type B applied part)

### Base



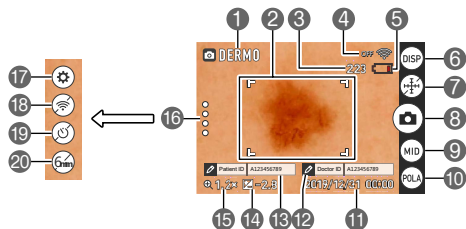
- ⑯ Strap mount
- ⑰ Speaker
- ⑱ Battery/Memory card slot (pages 37, 41)
- ⑲ Battery cover
- ⑳ Tripod mount  
Use when mounting the camera on a tripod.

## LCD Monitor Display Details and Switching Procedure

The LCD monitor uses icons and numbers to display a wide range of information.

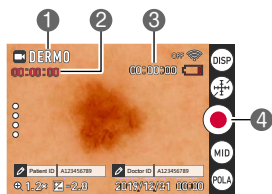
- The screen pictured below is to show where the different information is displayed. The actual LCD monitor will not appear as shown here.

### ■ When shooting still images



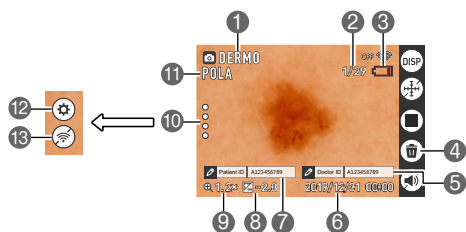
- 1 Recording mode (page 55)
- 2 Focusing frame (page 49)
- 3 No. of remaining still image shots (page 102)
- 4 Wi-Fi communication status (page 76)
- 5 Battery level indicator (page 40)
- 6 Information display selector icon (page 36)
- 7 Scale display icon (page 66)
- 8 Photography icon (page 49)
- 9 Light selector icon (page 67)
- 10 Filter selector icon (page 67)
- 11 Date/Time (pages 45, 91)
- 12 Doctor ID (page 92)
- 13 Patient ID (page 92)
- 14 Exposure compensation value (page 63)
- 15 Digital zoom (page 64)
- 16 (recall) icon (pages 68, 70, 77, 78, 90)
- 17 Settings icon (pages 70, 77, 78, 80, 90)
- 18 Wi-Fi connection selector icon (page 90)
- 19 Self-timer icon (page 67)
- 20 Adapter selector icon (page 68)

### ■ When shooting videos



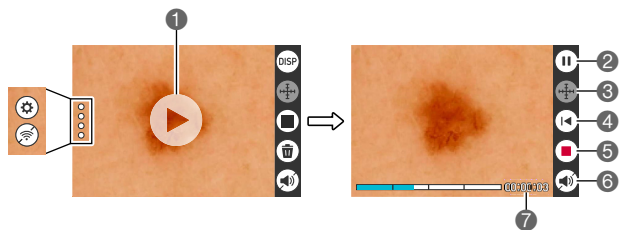
- 1 Recording mode (page 55)
- 2 Video shooting time
- 3 Remaining video shooting time (page 102)
- 4 Recording start icon (pages 60, 60)

## ■ When playing back still images




- 1 Recording mode (page 55)
- 2 No. of images (current/total images) (page 102)
- 3 Battery level indicator (page 40)
- 4 Trash icon (pages 51, 92)
- 5 Doctor ID (page 92)
- 6 Recording date (pages 45, 91)
- 7 Patient ID (page 92)
- 8 Exposure compensation value (page 63)
- 9 Shooting scale (page 64)
- 10 (recall) icon (pages 68, 70, 77, 78, 90)
- 11 Shooting filter (page 67)
- 12 Settings icon (pages 70, 77, 78, 80, 90)
- 13 Wi-Fi connection selector icon (page 90)

## ■ When playing back videos



- 1 Playback start icon (page 50)
- 2 Pause icon
- 3 Scale display icon (page 72)
- 4 Rewind icon
- 5 Stop video playback icon
- 6 Video volume setting icon (page 73)
- 7 Video playback time (page 102)

## ■ Selecting the details displayed on the LCD monitor

Tapping  (information display selector) allows you to toggle between showing and hiding information on the screen. This can be selected in both recording mode and playback mode.

### Recording mode

<b>Information display ON</b>	Information such as settings is displayed.
<b>Information display OFF</b>	Settings and other information are not displayed.

### Playback mode

<b>Information display ON</b>	Photography settings, date, time and other information are displayed.
<b>Information display OFF</b>	The recorded information is not displayed during playback.



# Introduction (Basic Operation)

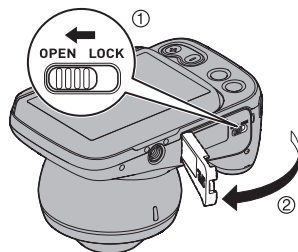
## After unpacking the product, charge the battery

The battery is not fully charged at the time of purchase. Use the procedure below to load the battery into the camera and charge it.

- This camera uses a CASIO dedicated lithium-ion rechargeable battery (DNP-100M) as its power supply. (Batteries other than the DNP-100M cannot be used.)

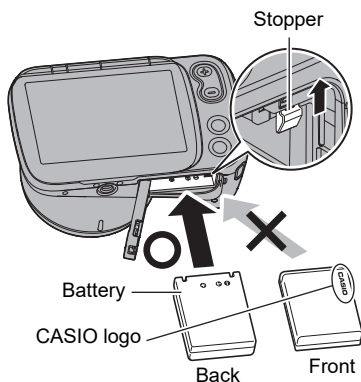
### Inserting the battery

#### 1. Open the battery cover.

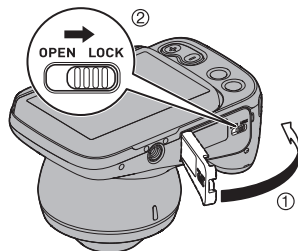


#### 2. Insert the battery.

Hold the battery so that the CASIO logo faces down (towards the lens) and insert the battery so that the side of the battery shifts the stopper in the direction of the arrow. Push the battery in firmly until the stopper engages with the battery.

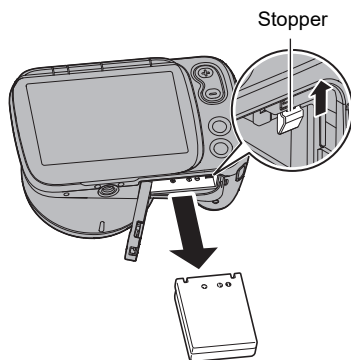


#### 3. Close the battery cover.



## Replacing the battery

1. Press [⏻] (Power) to switch the camera off and then open the battery cover.
2. Remove the battery and insert a new battery.
3. Close the battery cover.



### ★ IMPORTANT!

- When you have pressed [⏻] (Power) to switch the camera off, do not remove the battery while the operation check indicator (page 33) is flashing green. Doing so may cause data to be deleted or corrupted.

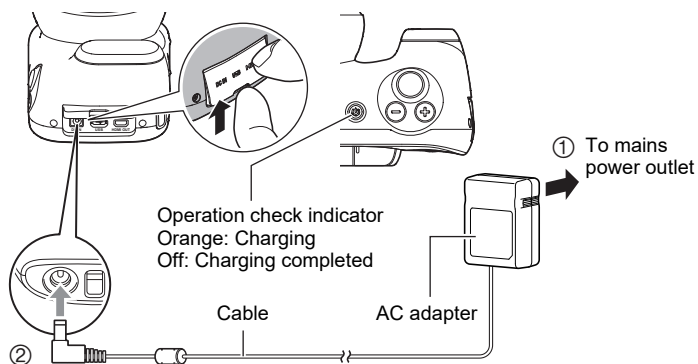
## Charging

### ■ Charging using the AC adapter for camera charging

This method charges the battery while it is in the camera.

With the camera switched off, connect the cable in the sequence shown as ①, ②.

Charging time: Approx. 4 hours 30 minutes



- When disconnecting the adapter from the camera, always disconnect the camera end of the cable (② in the above diagram) first.

## **IMPORTANT!**

- If you press the [⏻] (Power) button when the AC adapter for camera charging is connected to the camera, the camera starts up. At that point, charging stops.
- The AC adapter for camera charging heats up slightly during charging. This is normal and does not indicate malfunction.

### Operation check indicator operation

Action	Details
Lights orange	Charging
Flashes red	Abnormal ambient temperature, AC adapter fault or battery fault (page 94)
Off	Charging completed

Operation check indicator









### Other Important Notes on Charging


- The lithium-ion battery (DNP-100M) should only be charged using the methods specified in this manual.
- If the battery has become hot after being used, it may not be fully charged. Allow the battery to cool down and then recharge it.
- The battery will self-discharge even when it is not being used. Always charge the battery before use.
- Charging may produce interference with a TV or radio. In this event, use a mains power socket that is as far away as possible from the TV or radio.
- Charging times will vary somewhat depending on the battery capacity, its remaining charge and the operating environment.
- For charging, use the device specified in this manual. The use of any other device could make it impossible to correctly charge the battery.
- To cut off power to this camera, unplug the AC adapter from the mains power socket.
- Do not place this camera in a location that interferes with connecting or disconnecting the AC adapter.
- Do not operate this product with wet hands when using the AC adapter.
- In environments where this product is used with patients, charge it using the AC adapter for camera charging.


## Checking the remaining battery charge

As the battery uses up charge, the battery level indicator shown on the LCD monitor changes as shown below.

Battery level	Full	←—————→			Low				
Battery level indicator		→		→		→		→	
Level indicator color	White	→	White	→	White	→	Red	→	Red

 Indicates that the battery is low on charge. Recharge the battery soon.

 Indicates that the camera cannot take photos. Recharge the battery immediately.

- The battery level indicator status may change if you switch from recording mode to playback mode or vice-versa.
- If the camera is left unused for roughly 20 days without the battery loaded or with a depleted battery, the date/time setting will be reset. Reset the date in the date setting notification screen that appears the next time you switch the camera on (page 91).
- See page 104 for information on the battery life and the number of shots.
- If you switch the camera on during charging with the AC adapter, the battery level indicator shows  (Under power).

## Making your battery last longer

This camera is equipped with Sleep and Auto Power Off functions to reduce its power consumption.

### • Sleep function

If the camera is not used for approximately 1 minute in recording mode, it switches to Sleep mode and the LCD monitor and LED light switch off. Pressing any button will wake the camera from Sleep mode.

### • Auto Power Off function

If the camera is not operated in any way for approximately 5 minutes while in use, it automatically shuts down.

## Preparing Memory Cards

To store photographed images, use a third-party memory card. (No memory card is provided with this camera.) This camera has built-in memory that allows you to shoot a number of still images and short videos. If a memory card is inserted, the images and videos you shoot are recorded on the memory card. If not, they are recorded in built-in memory.

- See page 102 for information on the number of still images and videos you can store.

### ■ Supported memory card types

- SD Memory Card
- SDHC Memory Card
- SDXC Memory Card



- The list of supported memory card types is valid as of March 2019.
- This product supports memory cards that comply with the SD standard. The memory card capacities under that standard are up to 2 GB for SD memory cards, 2 to 32 GB for SDHC memory cards and 32 GB to 2 TB for SDXC memory cards. Note that these capacities and card functioning are not guaranteed for all memory cards, even those listed above.

It is recommended that you use only CASIO-approved memory cards.

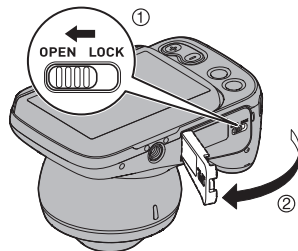
For specific details such as manufacturers and supported capacities, visit <https://dz-image.casio.jp/products/derm/>.

### ■ Notes on Using Memory Cards

Processing speeds may be slower for some types of memory card. Depending on the memory card used, recording may take some time, which could result in images or sound being momentarily interrupted.

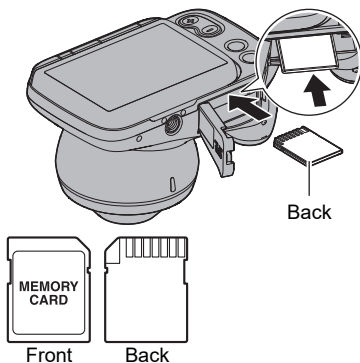
## Inserting a memory card

1. Press [⏻] (Power) to switch the camera off and then open the battery cover.

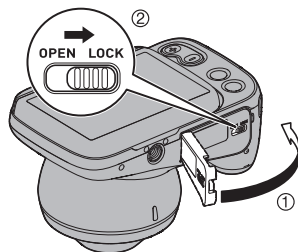


## 2. Insert the memory card.

Hold the memory card with the back side uppermost (towards the LCD monitor) and push it into the memory card slot until you hear a click.



## 3. Close the battery cover.



### **IMPORTANT!**

- Do not insert anything other than designated memory cards (page 41) into the memory card slot.
- If any foreign object or moisture gets into the memory card slot, switch the camera off and remove the battery. Then refer to the contact information in "Inquiries Regarding Repairs".

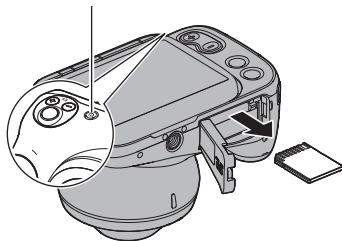
## Replacing the memory card

Pressing the memory card causes it to pop out slightly. Pull it out and insert another memory card.

### **IMPORTANT!**

- Switch the camera off before replacing the memory card.
- When you have pressed [P] (Power) to switch the camera off, do not remove the memory card while the operation check indicator is flashing green. Doing so could result in photographed images not being recorded or the memory card being damaged.

Operation check indicator

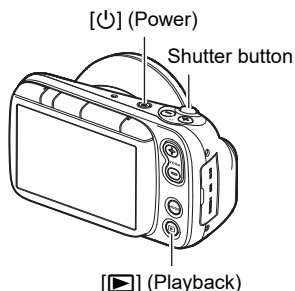


## Switching the Camera On/Off

### ■ Switching the camera on

Pressing [⏻] (Power) switches the camera on in recording mode so that it is ready to take pictures. Pressing [▶] (Playback) again at this point switches the camera to playback mode and you can view still images or videos shot previously (pages 50, 71).

- Pressing [▶] (Playback) switches the camera on in playback mode.
- In playback mode, press [▶] (Playback) or press the shutter button to return to recording mode.



### ■ Switching the camera off

Press [⏻] (Power).

- If the camera is not used for a set time, the LCD monitor and the camera are automatically switched off by the Sleep function (page 40) and Auto Power Off function (page 40) respectively.

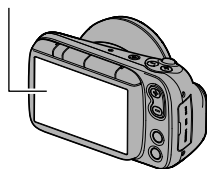
#### NOTE

- To switch them back on, simply open the LCD monitor.

## Using the Touch Panel

The LCD monitor on this camera is a touch panel. This enables you to control various camera operations by touching the panel.

LCD monitor



### Tap

Briefly touch the screen.

Used to select and specify icons and menu options.



### Swipe

Touch the screen and then slide your fingertip up, down, left or right on the screen.

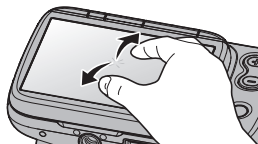
Used for operations such as viewing the previous or next image.



### Pinch-out

Touch the screen with two fingers and then slide them apart on the screen.

Zooms in on the displayed image.



### Pinch-in

Touch the screen with two spread fingers and then slide them closer together on the screen.

Zooms out from the displayed image or displays the image list.



### IMPORTANT!

- Do not press on the screen with pointed or hard objects. Doing so could damage the LCD monitor.
- The touch panel has difficulty recognizing fingernails. Use the pad of your finger.

### NOTE

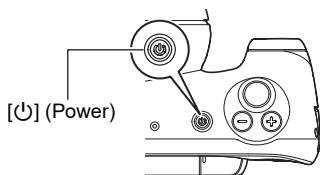
- Applying a third-party LCD protective sheet to the panel will make it more difficult for the panel to recognize gestures.



## Setting the Display Language, Date & Time When You First Use the Camera

### The first time you switch the camera on after purchasing it

A screen for setting the display language, date & time appears. If you do not set the date & time, the correct date & time will not be recorded on photographed images.

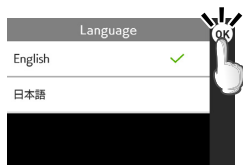


#### 1. Press [⏻] (Power) to switch the camera on.

#### 2. Set the display language.

Select the language to be displayed in the screens and tap .

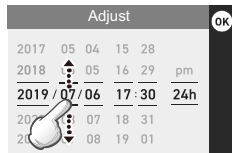
The explanations in this Guide are with the display language set to "English".



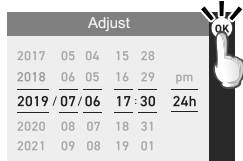
You can change the display language setting. See page 92.

#### 3. Set the date & time.

Tap the year, month, day, hour, minute or am (or pm)/ 24h and then swipe up or down to change the setting.



#### 4. Once you have finished setting the date & time, tap to complete the settings.



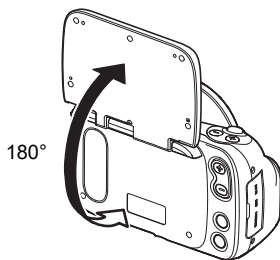
If you set the date or time incorrectly, you cannot correct it using the above procedure. Refer to page 91 to correct the settings.

### NOTE

- If you set the time and then immediately remove the battery, the set time may be reset. After setting the time, leave the battery in the camera for at least 24 hours.

## Opening and Closing the LCD Monitor

The LCD monitor on this camera is hinged at the top so that it opens 180° upwards.



### ■ Opening the LCD monitor

As shown in the illustration, place your fingertip at **A** in the center of lower edge of the LCD monitor and lift it upwards so that it rotates and opens.

- The LCD monitor does not open from the top. Always open it from the bottom, as shown in the illustration.



### ★ IMPORTANT!

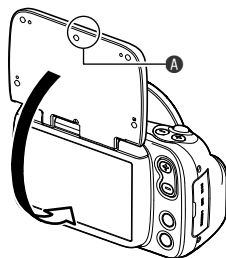
- Opening the LCD monitor switches the camera on.
- When closing the LCD monitor, take care not to trap your finger in the top or bottom of the LCD monitor.
- Do not press on the LCD monitor with excessive force. Doing so could damage the LCD monitor.

### NOTE

- Close the LCD monitor when not using the camera.

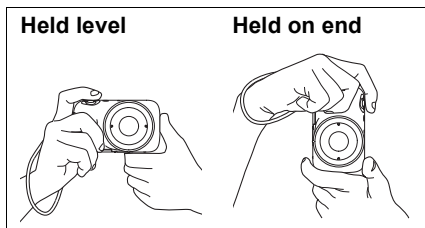
### ■ Closing the LCD monitor

As shown in the illustration, hold **A** in the center of lower edge of the LCD monitor and rotate it downwards so that it closes.




## Holding the Camera Correctly

If you move the camera as you are pressing the shutter button, the image shot will not be clear. Hold the camera as shown in the illustration at right and lock your arm against your body. Press the shutter button gently and hold the camera steady as the shutter releases and immediately afterwards.



### ■ Photographing the area around the affected area

Point the camera at the area containing the lesion and take a picture.


Hold the camera steady so that it does not move while you tap  (Shoot) or press the shutter button and photograph the entire affected area.



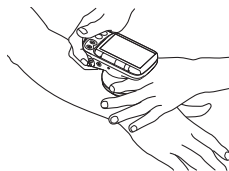
### ■ Taking close-up shots of the affected area

Wipe the lens clean.

Place the lens\* directly onto the affected area and take a picture. (A gel can also be used.)

Hold the camera steady so that it does not move while you tap  (Shoot) or press the shutter button to take an enlarged image of the lesion.

\* The lens directly touches healthy skin and damaged skin.



### NOTE

- Firmly support the camera while taking the picture and take care not to drop it, etc.
- To ensure that you do not drop the camera accidentally, attach a strap to the camera and put the strap around your fingers or wrist while shooting.
- Do not dangle the camera by the strap.

## Setting the recording mode

This camera features 7 recording modes that can be selected according to the purpose of the photography.

 NORMAL,  DERMO CONT,  DERMO,  DERMO AIF,  MOVIE NORMAL,  MOVIE DERMO,  MICROSCOPE

- For detailed information on the modes, see “Setting Recording Modes and Shooting Still Images and Videos” (page 55).
- You can specify whether the recording mode options are shown or hidden (page 90).






### 1. Press (Power) to switch the camera on.

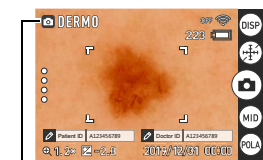
The camera switches on in recording mode and is ready to take pictures.

- If the camera is in playback mode, press  (Playback) or the shutter button.

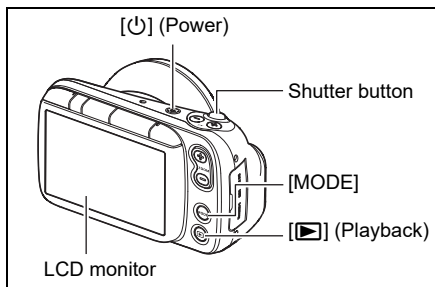
### 2. Press [MODE] and select the recording mode.

The mode changes in the sequence shown below each time you press [MODE].

 NORMAL →  DERMO CONT →  DERMO →  DERMO AIF →  MOVIE NORMAL →  MOVIE DERMO →  MICROSCOPE



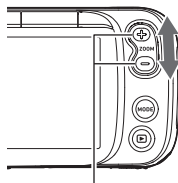
Recording mode



## Photography

### 1. Point the camera at the site to be photographed or place the lens directly onto the affected area.

- You can change the zoom ratio.



Zoom button

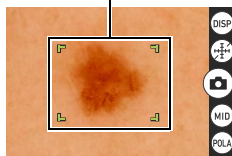
### 2. Press the shutter button down halfway to focus the image.

When the image is focused, the camera gives two short beeps and the operation check indicator and focusing frame turn green.

Operation check indicator

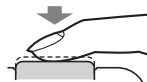


Focusing frame



#### Press down halfway

Press down gently until it stops



"Bibip" (focused)

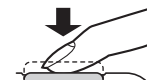
When you press the shutter button down halfway, the camera automatically sets the exposure and focus for the subject it is pointed at. Learning just how much pressure will press the shutter button down halfway is one of the secrets to shooting crystal-clear still images.

### 3. With the camera fixed in place, press the shutter button down fully.

A still image is photographed.



#### Press down fully

All the way




"Kashick!"  
(An image is shot)

#### To shoot a video

Tap  to start shooting a video.  
Tap  to stop shooting.  
See page 60 for detailed information on shooting videos.

(Video shooting starts)



- You can also take photos by tapping .

### ■ If the image is out of focus

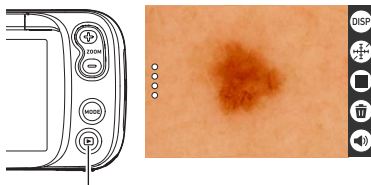
If the focusing frame is red, the image is not in focus. Point the camera at the subject again or try focusing by placing the lens directly onto the affected area.

## Viewing Photographed Still Images and Videos

You can view photographed still images or videos on the LCD monitor.

### 1. Press **[▶]** (Playback) to set the camera to playback mode.

- One of the recorded still images or videos appears on the LCD monitor.
- Information about the displayed still image or video is also displayed (page 35).
- You can also view just the still image or video without the information being displayed (page 36).
- Pinch-out on the image or press the zoom button (+) to zoom in on the displayed image (page 71).



**[▶]** (Playback)

### 2. Swipe left or right to move back and forth between images.



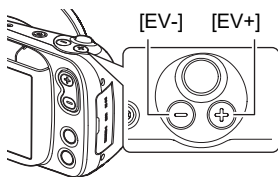
or



or



- You can also move between images using [EV+] and [EV-].
- To play back video, open the video file and tap **[▶]** in the center of the screen.




### NOTE

- Pressing the shutter button down halfway in playback mode switches immediately to recording mode.

## Deleting Photographed Still Images and Videos

When the camera's memory is full, deleting still images and videos shot previously will free up some memory capacity so that you can shoot new images.

- You can delete files simply by tapping  (Trash).

### ■ Deleting files 1 at a time


1. Swipe left or right to view the file to be deleted.

---


2. Tap  (Trash).

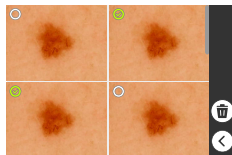
---

3. Tap .

- To delete more files, simply repeat steps 1-3.
- To stop deleting, tap  in the confirmation message.

### ■ Deleting selected files

1. Tap  (Switch to thumbnail display) to display the image list.



---

2. Tap  (Trash).

- The deletion menu appears.

---


3. Tap “Delete Files”.

---

4. Tap the files you want to delete to select them.

- A check mark appears next to the selected files.


---

5. Once you have selected all the files to be deleted, tap  (Trash).


- The “Delete selected files.” confirmation message appears.

---

6. Tap .

- The selected files are deleted.
- To stop deleting, tap  in the confirmation message.

## ■ Deleting all files

1. Tap  (Switch to thumbnail display) to display the image list.

---

2. Tap  (Trash).

- The deletion menu appears.
- 

3. Tap “Delete All Files”.

- The “Delete all files.” confirmation message appears.
- 


4. Tap .

All the files are deleted and the “There are no files.” message appears.

## ■ Deleting/restoring files in the Trash

When the Trash function is enabled (page 92), deleted images are temporarily moved to the Trash. You can delete or restore files that are in the Trash.

### Restoring selected files

1. Tap  (Switch to thumbnail display) to display the image list.

---

2. Tap  (Trash).

- The deletion menu appears.
- 

3. Tap “Trash”.

- The files that have been moved to the Trash are displayed.
- 

4. Tap the files you want to restore to select them.


- A check mark appears next to the selected files.
- 

5. Tap .

- The selected files are moved back to the playback screen.



## Deleting selected files

**1. Tap  (Switch to thumbnail display) to display the image list.**

---

**2. Tap  (Trash).**

- The deletion menu appears.
- 

**3. Tap “Trash”.**

- The files that have been moved to the Trash are displayed.
- 

**4. Tap the files you want to delete from the Trash to select them.**

- A check mark appears next to the selected files.
- 


**5. Tap .**

- The “Delete selected files.” confirmation message appears.
- 

**6. Tap .**

- The selected files are permanently deleted.

## ■ Emptying the Trash

**1. Tap  (Switch to thumbnail display) to display the image list.**

---

**2. Tap  (Trash).**

- The deletion menu appears.
- 

**3. Tap “Empty Trash”.**

- The “Delete all files in trash?” confirmation message appears.
- 

**4. Tap .**

- All the files are permanently deleted.

### Operation








- Do not open the battery cover while the operation check indicator is flashing green. Doing so could cause problems such as photographed images not being saved correctly, recorded images being corrupted and the camera not functioning normally.

### ■ Auto Focus Limitations

- The camera may not focus correctly for the following types of subject or in the following situations.
  - Subjects with low contrast
  - Multiple subjects at different distances from the camera
  - Subjects in dark locations
  - When the camera is shaking
  - Subjects outside the shooting range
  - When the lens is dirty

## Setting Recording Modes and Shooting Still Images and Videos

This camera features 7 recording modes that can be selected according to the purpose of the photography.

Recording mode	Details
 NORMAL	Use this mode to take a normal photograph of the affected area and its periphery.
 DERMO CONT	Use this mode to use a single shutter release to take polarized, non-polarized and 405 nm* close-up shots with the same angle of view. * A safe light wavelength of 405 nm is used. When 405 nm is enabled, the shot is taken with 405 nm light.
 DERMO	Use this mode to take a close-up shot of the affected area.
 DERMO AIF	Use this mode to take a close-up shot of a raised affected area so that the entire area is in focus. A single shutter release takes multiple images with a shifting focal point and the images are then merged into a single shot. Photography in this mode requires the optional 3D adapter (sold separately).
 NORMAL	Use this mode to shoot a video of the affected area and its periphery.
 DERMO	Use this mode to take a close-up video of the affected area.
 MICROSCOPE	Use this mode to photograph subjects such as pathological tissue viewed through a microscope. Photography in this mode requires the optional microscope adapter (DMS-100M (sold separately)).

### 1. Press [⏻] (Power) to switch the camera on in recording mode.

- If the camera is in playback mode, press [▶] (Playback) or the shutter button to switch to recording mode.

### 2. Press [MODE] and select the recording mode.



The mode changes in the sequence shown below each time you press [MODE].

 NORMAL →  DERMO CONT →  DERMO →  DERMO AIF →  
 MOVIE NORMAL →  MOVIE DERMO →  MICROSCOPE

## Photography in NORMAL mode (NORMAL)

---

Shoots still images for clinical use. Suitable for normal still image photography.

- 1. Set the recording mode to “NORMAL”.**
- 2. Point the camera at the subject and press the shutter button down halfway to focus the image.**
- 3. With the camera fixed in place, press the shutter button down fully.**
  - A still image is photographed.
  - You can also take photos by tapping .

## Photography in DERMO CONT mode (DERMO CONT)


A single shutter release shoots 3 types of still image with the same angle of view.

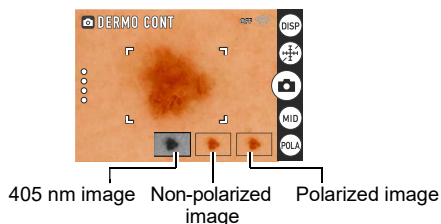
- 3 types of image shot simultaneously

<b>Polarized image</b>	Image where diffused light reflected from the photographed surface is blocked
<b>Non-polarized image</b>	Normal photographed image
<b>405 nm image</b>	Image shot using 405 nm light

### NOTE



- To shoot 405 nm images, the 405 nm setting must be enabled (ON). For information on 405 nm settings, refer to “405 nm ON/OFF setting” (page 92) in “Other Settings” (page 90).

- 1. Set the recording mode to “DERMO CONT”.**
- 2. Place the camera lens directly on the affected area and press the shutter button down halfway to focus the image.**
- 3. With the camera fixed in place, press the shutter button down fully.**
  - 3 types of still image are photographed.
  - You can also take photos by tapping .



## Photography in DERMO mode (DERMO)

Shoots still images for close-up shots of the affected area.

1. Set the recording mode to “DERMO”.
2. Place the camera lens directly on the affected area and press the shutter button down halfway to focus the image.
3. With the camera fixed in place, press the shutter button down fully.
  - A close-up still image is photographed.
  - You can also take photos by tapping .

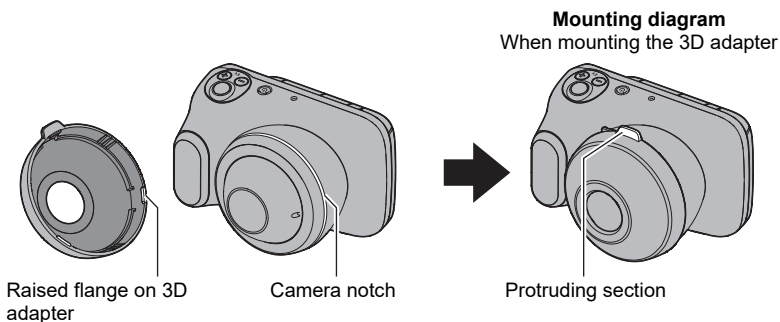
## Photography in DERMO AIF mode (DERMO AIF)


With the 3D adapter (sold separately) fitted, this mode shoots multiple images with differing focusing positions and merges them into a single image that is in focus over a wide range.

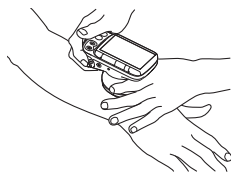
This is ideal for photographing lesions that are normally difficult get in focus over the entire lesion.

1. Mount the 3D adapter on the camera.

Ensure that the raised flange is securely fitted into the notch on the camera.




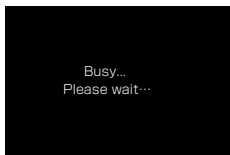
2. Set the recording mode to “DERMO AIF”.
3. Place the end of the 3D adapter directly onto the affected area and press the shutter button down halfway to focus the image.



---

#### 4. With the camera fixed in place, press the shutter button down fully.

- A close-up still image is photographed.
- You can also take the shot by tapping .



The screen shown at left appears while the still images are being merged.



Once merging is completed, a thumbnail version of the still image appears at the bottom right of the screen.

---

#### 5. Remove the 3D adapter.

Grip the protruding section of the 3D adapter and detach it from the camera.




##### NOTE

- The photography angle of view is different in DERMO mode.
- The recorded image size (pixel count) is 4368 x 3280.
- The camera may be unable to merge images effectively for the following types of subject or in the following situations.
  - If there is camera shake or subject movement
  - Subjects with high contrast
  - Subjects with undulations of 1 mm (0.04") or greater

## Shooting video in NORMAL mode (MOVIE NORMAL)

---




Records videos for clinical use.

1. Set the recording mode to “NORMAL”.
2. Point the camera at the subject and tap .
  - Video shooting starts.
3. Tap  to end shooting.

## Shooting video in DERMO mode (MOVIE DERMO)

---

Shoots videos for close-up shots of the affected area.

1. Set the recording mode to “DERMO”.
2. Place the camera lens directly on the affected area and tap .
  - Video shooting starts.
3. Tap  to end shooting.

### NOTE

---

- You can also start and end recording by pressing the shutter button.
- The auto focus operates continually during video shooting.

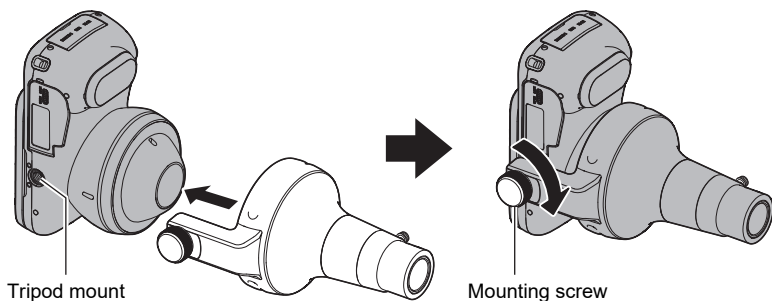


## Photography in MICROSCOPE mode (MICROSCOPE)

With the microscope adapter (DMS-100M (sold separately)) fitted, this mode allows you to shoot still images by mounting it onto a microscope.

### 1. Mount the microscope adapter on the camera.

Mount the microscope adapter onto the camera and fasten it in place by screwing the mounting screw for the adapter into the camera's tripod mount.

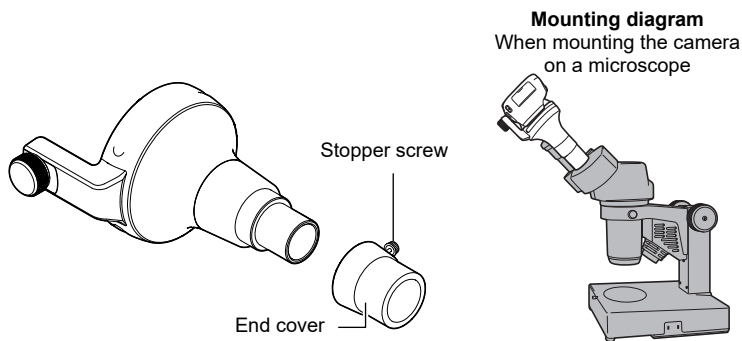


### 2. Mount the camera on the microscope.

The microscope adapter has two differently sized eyepieces (30 mm (1.2") dia. and 23.2 mm (0.9") dia.).

When mounting the 30 mm (1.2") dia. eyepiece, leave the end cover fitted on the adapter.

When mounting the 23.2 mm (0.9") dia. eyepiece, loosen the stopper screw and remove the end cover.



### 3. Set the recording mode to "MICROSCOPE".


### 4. Adjust the microscope focus by looking at the camera's LCD monitor.

---

**5. Press the shutter button down halfway to focus the image.**

---

**6. Press the shutter button down fully.**

- A still image is photographed.
  - You can also take the shot by tapping .
- 

**7. Remove the microscope adapter.**

Remove the microscope adapter from the microscope eyepiece.  
Loosen the mounting screw on the microscope adapter and remove the microscope adapter from the camera.

---

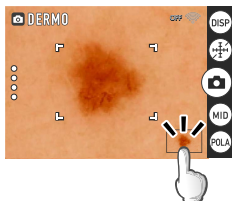
**NOTE**

- The microscope adapter corresponds to roughly 10x eyepiece magnification.
- Use the adapter size that best suits your microscope eyepiece (30 mm (1.2") dia. or 23.2 mm (0.9") dia.).

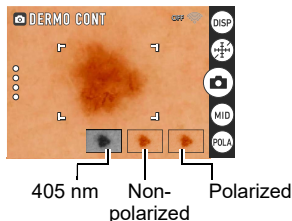
## Viewing Images Immediately After Shooting

After you take a picture, a thumbnail version of the photographed image appears at the bottom right of the screen.

Modes other than  
DERMO CONT



DERMO CONT mode

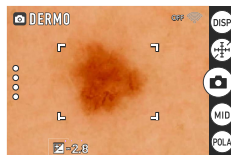


Tap the thumbnail to view the playback image.

## Adjusting the Brightness (Exposure Compensation)

You can manually adjust the exposure compensation value (EV value) according to the brightness when the shot is taken.

- Exposure compensation value:  $-2.0$  to  $+2.0$  EV
- Adjustment increment:  $0.1$  EV



### 1. Press [EV+] or [EV-] to adjust the exposure value (EV value).

[EV+]: Increases the EV value in increments of  $0.1$ . Press to brighten the image.

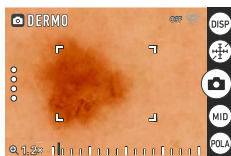
[EV-]: Decreases the EV value in increments of  $0.1$ . Press to darken the image.

## Using the Zoom

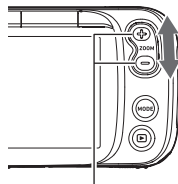
With the digital zoom (a method for digitally zooming in on the central part of an image), you can zoom in on your shots up to 8x.

**1. In recording mode, pinch in to zoom out or pinch out to zoom in.**


- You can change the scale using the zoom buttons.



Pinch-in/Pinch-out



Zoom button

**2. Tap  or press the shutter button to take the shot.**

### NOTE

- You can zoom the image while shooting video.

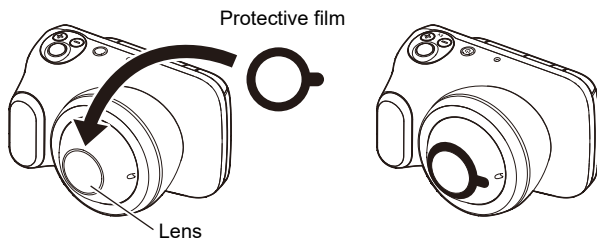
## Applying Protective Film to Take Photos

You can apply protective film (DFP-100M (sold separately)) to the camera lens to protect it against scratches and soiling.

- Before using the protective film, carefully read the “Notes on Using this Product” provided with the film to ensure that you use it correctly.

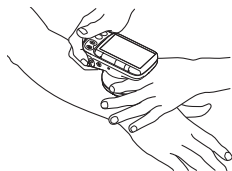
### 1. Apply the protective film to the camera.

Remove the backing paper from the protective film and apply the film to the lens. When using the protective film, peel off the blue sheet on the surface of the film.




### 2. Set the recording mode to “DERMO CONT” or “DERMO”.

### 3. Place the protective film directly onto the affected area and press the shutter button down halfway to focus the image.



### 4. With the camera fixed in place, press the shutter button down fully.

- A close-up still image is photographed.
- You can also take photos by tapping .

### 5. Peel off the protective film.

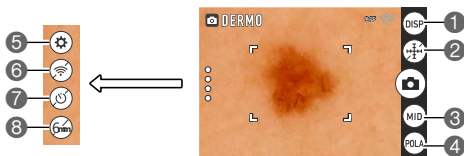
Once you have finished taking photos, peel the protective film off the camera lens.

This is a single-use product only and cannot be re-used.

# Getting Better Images

This camera features a range of settings that can be accessed via screen icons.

## Photography Settings



- 1 Information display selector icon
- 2 Scale display icon
- 3 Light selector icon
- 4 Filter selector icon
- 5 Settings icon
- 6 Wi-Fi connection selector icon
- 7 Self-timer icon
- 8 Adapter selector icon

## Viewing Image Information

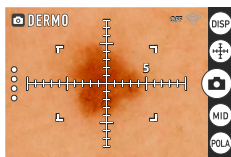
Tap **DISP** to display the photography information. Tap the icon again to hide the photography information.

## Displaying the scale on the LCD monitor when shooting

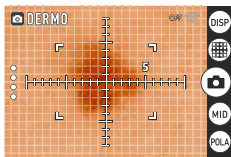
Tap **+/-** to display the scale. This is useful for approximating the size of the affected area.

Tap the icon again to display the scale and the grid. The scale changes each time you tap **+/-**.

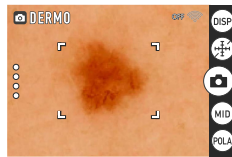
Scale displayed



Scale + grid displayed



Scale hidden





- These cannot be used in NORMAL, MOVIE NORMAL or MICROSCOPE modes.









### NOTE

- The scale and grid displays shown on the LCD monitor are purely indicative and are not accurate values.

## Changing the light brightness for shots

Tap  or  to change the brightness of the light.


The available light settings vary depending on the recording mode.

- NORMAL, MOVIE NORMAL:  AUTO (default) →  LOW →  MIDDLE →  HIGH →  OFF
- DERMO CONT, DERMO, DERMO AIF, MOVIE DERMO:  MIDDLE (default) →  HIGH →  LOW






### NOTE

- In MICROSCOPE mode, the setting cannot be changed. The  icon is displayed.

## Changing the filter for shots

Tap  to switch between the polarizing, non-polarizing and 405 nm photography filters.

The available filter settings vary depending on the recording mode.


- NORMAL, MOVIE NORMAL:  Non-polarized (default) →  Polarized
- DERMO CONT, DERMO, DERMO AIF, MOVIE DERMO:  Polarized (default) →  Non-polarized →  405 nm (if enabled)

### NOTE

- In MICROSCOPE mode, the setting cannot be changed.

## Using the self-timer

Tap  to enable the self-timer.

This allows you to shoot still images with a 2-second delay after you tap  or press the shutter button.

### NOTE

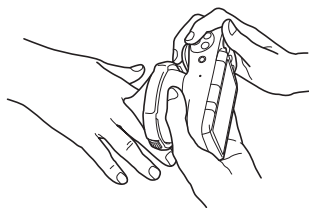
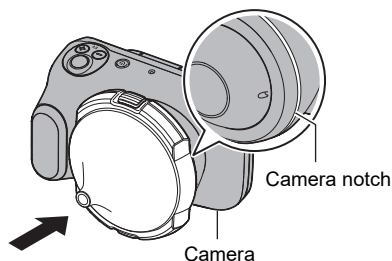
- In MOVIE NORMAL and MOVIE DERMO mode, the setting cannot be changed.

## Shooting with the small-diameter adapter


When photographing lesions in difficult-to-focus locations, such as between fingers, fit the small-diameter adapter (sold separately) to the camera to take the shot.

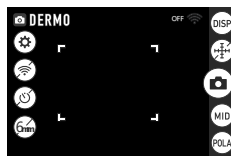
### 1. Fit the small-diameter adapter on the camera.

Ensure that the raised flange on the small-diameter adapter is securely fitted into the notch on the camera.

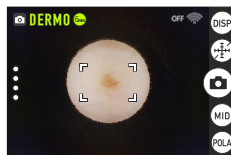


### 2. Tap (recall) on the left side of screen and select .


The mode name at the top left of the screen changes from white to green.  
 appears.



### 3. Place the small-diameter adapter lens directly onto the affected area and press the shutter button down halfway to focus the image.



### 4. With the camera fixed in place, press the shutter button down fully.

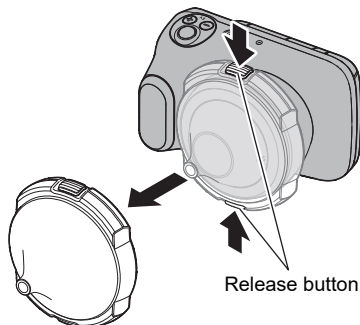
- A close-up still image is photographed.
- You can also take pictures by tapping .
- A thumbnail version of the photographed still image appears at the bottom right of the screen.



---

## 5. Remove the small-diameter adapter.

To remove the small-diameter adapter, press the release button on the rim of the adapter as you remove it from the camera.



---


### NOTE

- To maintain a consistent angle of view for shots taken with the small-diameter adapter mounted, take care not to press too hard on or apply excessive force to the small-diameter adapter.
- The small-diameter adapter cannot be used in NORMAL, MOVIE NORMAL or MICROSCOPE mode.
- The default zoom magnification setting is 3x. You can zoom images up to a maximum of 8x. If you zoom out from the default setting, the construction of the camera is such that LED light reflections will be captured in the shot, but this will not affect the photographed image.
- When cleaning the camera, wipe the front glass element of the adapter lens clean with a soft cloth. If any dust gets inside the small-diameter adapter, use a blower or similar tool to clean it off.
- When cleaning the lens, or any part of the camera that touches patient's skin, clean with either an isopropyl alcohol wipe 70% or a solution made of 70% isopropyl alcohol and allow at least 2 minutes to dry.
- Images shot with the small-diameter adapter mounted may appear different from those shot without the adapter due to differences in the illumination.

## Adjusting the color tones (White Balance)

You can adjust the white balance of still images and videos shot in NORMAL mode. The white balance of still images and videos shot in other modes cannot be adjusted.


1. Tap  (recall) on the left side of screen.

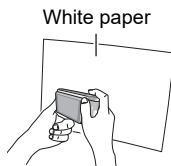
2. Tap  (Setting).

The Setting menu appears.


3. Tap “White Balance”.

The white balance settings are displayed.

Setting	Details
Auto	The white balance is adjusted automatically
Fluorescent N	Color tones for shots taken with the color cast under white or neutral white fluorescent lighting suppressed
Fluorescent D	Color tones for shots taken with the color cast under daylight fluorescent lighting suppressed
Tungsten	Color tones for shots taken with the effects of electric bulb lighting removed
Manual	Manual adjustment to correct the colors for various types of lighting ① Take a photograph where a sheet of white paper fills the entire screen. ② Select “Manual”. ③ When the “Completed” message appears, tap  .



4. Tap a setting to select it.

5. Tap  to finish the white balance settings.

# Viewing Still Images and Videos

## Viewing Photographed Still Images and Videos

Refer to page 50 for more information on the procedure.

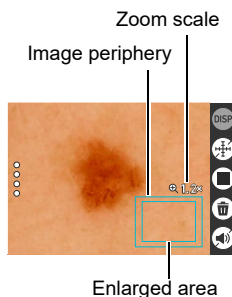
### Zooming in on images

**1. Set the camera to playback mode and swipe left or right to show the image you want to view.**


**2. Pinch-out on the image or press the zoom button (+) to zoom in on the displayed image.**


You can swipe to zoom in on a different area. Pinch-in on the image or press the zoom button (-) to zoom out from the displayed image.

- When information is displayed on the LCD monitor, the enlarged area appears in the bottom right of the image.
- Images can be enlarged up to a maximum of 8x, but enlargement up to 8x may not be possible for some image sizes.



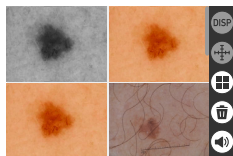
### Viewing the image list (thumbnail display)

**1. Set the camera to playback mode and tap  (Switch to thumbnail display).**

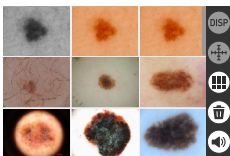
Tapping  (Switch to thumbnail display) allows you to change the number of columns used for thumbnail display (2, 3 or 4 columns).

To return to the normal view (single-image display), tap the image you want to view.

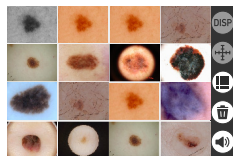
2-column (4-image) display



3-column (9-image) display



4-column (16-image) display



# Other Playback Functions

This section describes functions that you can use and configure in playback mode.

## Using various playback functions and settings

### Displaying a scale on playback images

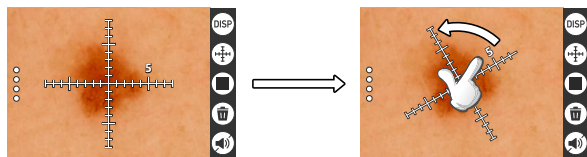
Displaying the scale enables you to estimate the size of an affected area.

**1. Set the camera to playback mode and tap  $\oplus$  (Scale display).**

The scale appears in the center of the screen.

**2. Touch the scale to rotate it.**

You can rotate the scale to the direction you want to assess.



- The gradation label is not shown during rotation.


#### NOTE

- The scale and grid displays shown on the LCD monitor are purely indicative and are not accurate values.

## Resetting the Doctor ID or Patient ID

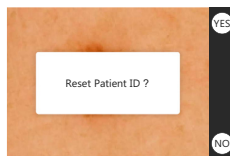
You can reset the Doctor ID and Patient ID registered in a photographed image.

**1. Display the image with the Doctor ID or Patient ID you want to reset.**

**2. Tap  to display the photography information.**

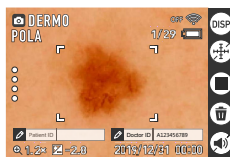
**3. Tap the Doctor ID or Patient ID.**

The “Reset Doctor ID ?” or “Reset Patient ID ?” message appears.



**4. Tap .**

The reset ID field is cleared.





## Setting the video playback volume




**1. Display the video.**

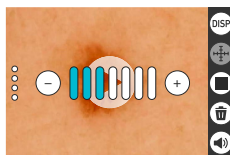
**2. Tap .**

The volume setting appears.



**3. Tap  or  on the screen to set the volume.**

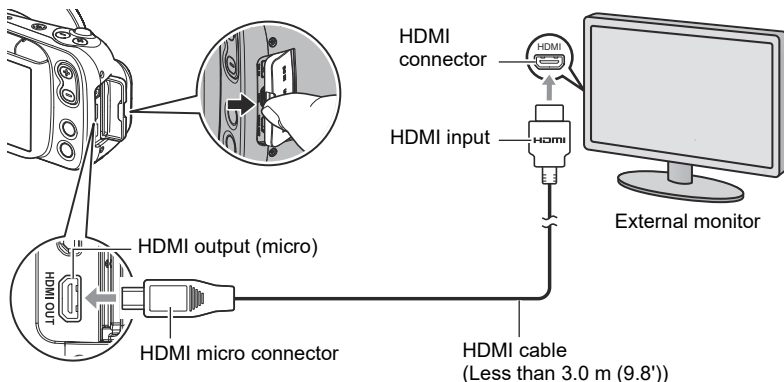
If you use  to mute the video,  changes to .



## Viewing images on an external monitor

### 1. Switch off the camera and use a third-party HDMI cable to connect the camera to the external monitor.

- Use only HDMI cables (third-party) that carry the logo shown at right.
- Switch the camera off before connecting or disconnecting the cable. Configure the external monitor as described in the manual for the monitor before connecting or disconnecting the cable.



### 2. Switch the camera on.

The image displayed on the LCD monitor appears on the external monitor.

#### NOTE

- The HDMI cable used should be less than 3.0 m (9.8') long and should be shielded and compatible with the HDMI high-speed specification (ver. 1.4).
- The external monitor used should be compliant with the IEC/UL/CSA/EN60950-1 or JIS C 6950-1, or with the VCCI-B, FCC-B or CE standard.
- The use of products that do not comply with the specified standards may result in lowered resistance to external electromagnetic waves and/or an increase in unwanted electromagnetic wave emissions.
- External monitors should be kept at least 1.5 m (4.9') away from the patient during use.
- The touch panel cannot be used while an HDMI cable is connected.

# Connecting the Camera to a Computer (Wi-Fi connection)

This camera is equipped with a Wi-Fi (wireless LAN) connection function. Connecting this camera to a computer via Wi-Fi enables you to transfer photographed images to the computer. To use the Wi-Fi connection, you must install the D'z IMAGE Viewer D image management software on your computer.

## **IMPORTANT!**

- Depending on the version of the Windows OS installed on your computer and the amount of available storage, you may not be able to save videos or still images on your computer. Once images have been received on your computer, check that they have been saved on the computer.
- You cannot transfer images shot on other cameras.
- Using a memory card equipped with a Wi-Fi function in this camera could cause problems.

## **NOTE**

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- When you use the Wi-Fi function, you will consume more power than usual. Only use Wi-Fi when there is plenty of charge in the battery.

## **Image Management Software**

Download the D'z IMAGE Viewer D image management software from the website below.

This website also provides information on the system requirements.

<https://dz-image.casio.jp/products/derm/#viewer>

Double-click the downloaded installer. Follow the on-screen instructions to install the software.

## **IMPORTANT!**


- The software functions and system requirements are subject to change without notice.

## **NOTE**

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- D'z IMAGE Viewer D is not intended to provide the information for diagnosis.
- D'z IMAGE Viewer D is not intended to control the physiological processes.

## Wi-Fi Mode

Tap  (Enable Wi-Fi) to enable or disable the Wi-Fi connection.

### ■ Icons displayed on screen during Wi-Fi connection

When you enable the Wi-Fi connection between the camera and a computer (page 90), icons indicating the communication status appear on the camera screen.

	Wi-Fi connection is disabled.
	Wi-Fi connection is enabled and you are connected in AP mode.
	Wi-Fi connection is enabled but is operating in STATION mode, but you are not connected.
	Wi-Fi connection is enabled and you are connected in STATION mode. The "XXXXXXXXXX" section in the display at left indicates the connected SSID.
 (Shown flashing)	Wi-Fi connection is enabled and image files are being transferred in AP mode.
 (Shown flashing)	Wi-Fi connection is enabled and image files are being transferred in STATION mode. The "XXXXXXXXXX" section in the display at left indicates the connected SSID.



## Setting Up the Wi-Fi Connection the First Time

To connect the camera to a computer via Wi-Fi, you must configure the Wi-Fi connection. This procedure is only necessary the first time.

<b>AP</b>	Connects the camera to a computer via Wi-Fi.
<b>STATION</b>	Connects the camera to a wireless LAN router.
<b>SSID</b>	DZ-D100 (default setting, used in AP mode)
<b>Password</b>	00000000 (default setting, used in AP mode) <ul style="list-style-type: none"><li>• To protect personal information, this should be changed (page 80).</li></ul>

### ■ Wi-Fi connection via AP mode

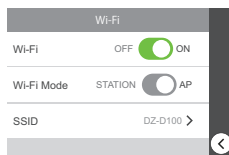
1. Tap  (recall) on the left side of screen.

2. Tap  (Setting).

3. Tap “Wi-Fi”.

4. Set “Wi-Fi” to “ON”.

5. Set “Wi-Fi Mode” to “AP”.



Refer to the website below for information on the procedure on your computer.

<https://dz-image.casio.jp/products/derm/#viewer>

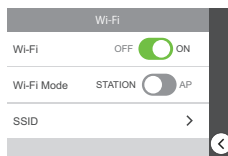
## ■ Wi-Fi connection via STATION mode

1. Tap  (recall) on the left side of screen.

2. Tap  (Setting).

3. Tap “Wi-Fi”.

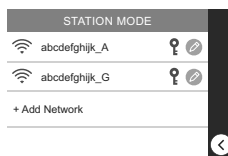
4. Set “Wi-Fi” to “ON”.




5. In “Wi-Fi Mode”, select “STATION”.

6. Tap “SSID”.

7. In the STATION MODE screen, select the SSID you want to connect to.



### If the desired SSID is shown

- 1) Select the SSID for the router you want to connect to and enter the password for the router.
- 2) Tap .

### If the desired SSID is not shown


If the stealth settings are enabled, SSIDs are not shown. Check the router settings and then use the procedure below to configure the settings.

- 1) Tap “+Add Network”.
- 2) Enter the SSID.
- 3) Select the router authentication method.

<b>None</b>	If no password is set
<b>WEP</b>	For the WEP method
<b>WPA/WPA2 PSK</b>	For the WPA PSK/WPA2 PSK method

- 4) Select the router IP address setting.

<b>DHCP</b>	To allocate IP addresses automatically
<b>Static</b>	To enter the IP address manually Input details: Static IP address, gateway address, network prefix length

- 5) Tap .
- The added SSID appears in the STATION MODE screen.

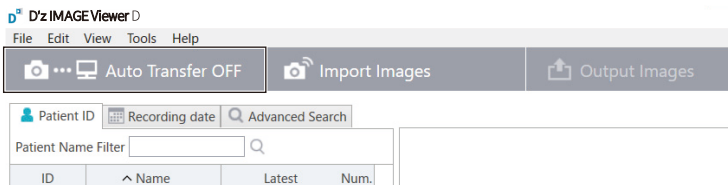
Refer to the website below for information on the procedure on your computer.

<https://dz-image.casio.jp/products/derm/#viewer>

## Transferring images to a computer (Auto Transfer)


You can transfer photographed images to your computer using the camera's Wi-Fi connection function and the D'z IMAGE Viewer D image management software.


1. Double-click the  icon for D'z IMAGE Viewer D on the computer screen.
2. In the startup screen, click "Auto Transfer OFF".



When "Auto Transfer OFF" changes to "Transferring...", image transfer begins.



When image transfer is completed,  (Update) appears.

3. Click  (Update).  
The images are saved in D'z IMAGE Viewer D.



## Changing the password for Wi-Fi connection

---

You can change the password used when connecting the camera to a computer via Wi-Fi (AP mode).

To protect personal information, it is recommended that you change the password.

### **IMPORTANT!**

- Terminate the Wi-Fi connection before changing your Wi-Fi connection password.

**1. Tap  (Setting).**

---

**2. Tap “Wi-Fi”.**


---

**3. Tap “SSID” to display the Password field.**

---

**4. Tap “Password” to open the password settings screen.**

---

**5. Once you have changed the password, tap .**

### **NOTE**



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- Changing the password for the Wi-Fi connection terminates the connection to the computer. Configure the Wi-Fi connection settings again.
- Either leave the password unset or enter 8 or more characters as a password.

# Using a Computer

## Functions available on a computer

Connecting the camera to a computer enables the following.

<b>Saving and viewing images on your computer</b> 	<ul style="list-style-type: none"><li>• Manually saving and viewing images on the computer (USB connection) (pages 82, 85).</li><li>• Automatically transferring images to the computer for viewing via wireless LAN (page 75). The D'z IMAGE Viewer D image management software must be installed.</li></ul>
<b>Playing back video</b> 	<ul style="list-style-type: none"><li>• You can also play back videos (pages 84, 87).</li></ul>

The procedure for this is different on Windows PCs and Macintosh computers.

- For Windows PCs, see “Using a Windows PC” (page 82)
- For Macintosh computers, see “Using a Macintosh Computer” (page 85)

## Using a Windows PC

Depending on the performance of your PC, how it is set up and which software is installed, you may not be able to successfully view or save still images and videos on your PC.

### Saving and viewing images on a PC

Connecting the camera to a PC allows you to save images (files such as still images and videos) to the PC and to view images on the PC.

**Do not use a PC to manipulate images in built-in memory or on memory cards, including modifying, deleting, moving or renaming the images.**

Doing so causes inconsistencies with the image management data and may prevent images being played back on the camera or radically alter the number of images shot. Operations such as image modification, deletion, relocation and renaming should be carried out on images saved on the PC.

#### **IMPORTANT!**

- Do not disconnect the cable or operate the camera while viewing or saving images. Doing so could cause file corruption.

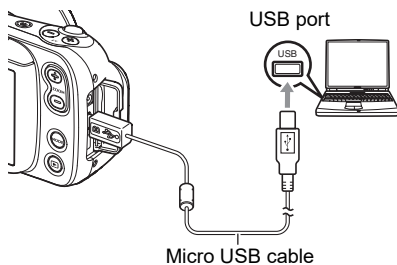
#### **NOTE**

- You can also import images directly from a memory card using a third-party card reader or the card slot on the PC. Refer to the manual for your device for details.

### Connecting the camera to a PC to save files

**1. Switch off the camera and connect it to a USB port on the PC using a micro USB cable.**

- The PC used should be compliant with the IEC/UL/CSA/EN60950-1 or JIS C 6950-1, or with the VCCI-B, FCC-B or CE standard. The use of products that do not comply with the specified standards may result in lowered resistance to external electromagnetic waves and/or an increase in unwanted electromagnetic wave emissions.
- The PC should be kept at least 1.5 m (4.9') away from the patient during use.



A micro USB cable is not included with this camera.

The micro USB cable should only be connected to the camera to save data to a PC.

---

## **2. Press [⏻] (Power) to switch the camera on.**

When you switch the camera on, check that the camera's operation check indicator has changed to being lit green. Note that, at this point, the LCD monitor is not switched on.

- The first time you connect the camera to a PC via a USB cable, an error message may appear on the PC. In this event, briefly disconnect and then reconnect the USB cable.
  - Do not use the camera for observations while a micro USB cable is connected to the camera.
- 

## **3. Windows 10: Click “Start” and then “File Explorer”, and then click “This PC” in the sidebar.**

**Windows 8.1: Click “Desktop” and then “File Explorer”.**

**Windows 7: Click “Start” and then “Computer”.**

---

## **4. Double-click “Removable Disk”**

- Memory cards and built-in memory are each recognized as a “Removable Disk”.
- 

## **5. Right-click the “DCIM” folder**

---

## **6. Click “Copy” in the menu.**

---

## **7. Windows 10/Windows 8.1: Click “Documents”.**

**Windows 7: Click “Start” and then “Documents”.**

- If there is already a saved “DCIM” folder, it will be overwritten. Rename or move the existing saved “DCIM” folder before copying the new folder.
- 

## **8. Windows 10/Windows 8.1: In the “Documents” menu, click “Home” and then “Paste”.**

**Windows 7: In the “Documents” menu, click “Organize” or “Edit” and then “Paste”.**

The “DCIM” folder (the folder containing the saved image files) is copied to the “Documents” folder and the images are also saved on the PC.

- Once copying is completed, it is recommended that you right-click the “DCIM” folder and rename the folder.
- 

## **9. When copying is completed, disconnect the camera from the PC.**

Disconnect the USB cable.

---

## ■ Viewing images saved on a PC

**1. Double-click the copied “DCIM” folder to open it.**

---

**2. Double-click to open the folder containing the images you want to view.**

---

**3. Double-click the image file you want to view to display the image.**

- See “Folder structure in memory” (page 89) for more information on file names.

## ■ Notes on playing back video

- Once you have saved a video file to your PC, double-click that image file to play the video. Video files on a network or on a memory card may not play back correctly.
- Depending on the performance of your PC, playback may not run correctly. In this event, try the following:
  - Close any other software that you have open. Also shut down any resident software.

If a file will not play back correctly on your PC, you may still be able to play it back on a TV with an HDMI port by using a third-party HDMI cable.



## Using a Macintosh Computer

Depending on the performance of your Macintosh computer, you may not be able to successfully view or save still images and videos on your computer.

### Saving and viewing images on a Macintosh computer

**Do not use a computer to manipulate images in built-in memory or on memory cards, including modifying, deleting, moving or renaming the images.**

Doing so causes inconsistencies with the image management data and may prevent images being played back on the camera or radically alter the number of images shot. Operations such as image modification, deletion, relocation and renaming should be carried out on images saved on the computer.

#### **IMPORTANT!**

- Do not disconnect the cable or operate the camera while viewing or saving images. Doing so could cause file corruption.

#### **NOTE**

- You can also import images directly from a memory card using a third-party card reader or the card slot on the computer. Refer to the manual for your device for details.

### ■ Connecting the camera to a computer to save files

#### **1. Switch off the camera and connect it to a USB port on the computer using a micro USB cable (page 82).**

- The computer used should be compliant with the IEC/UL/CSA/EN60950-1 or JIS C 6950-1, or with the VCCI-B, FCC-B or CE standard.
- The computer should be kept at least 1.5 m (4.9') away from the patient during use.

A micro USB cable is not included with this camera.

The micro USB cable should only be connected to the camera to save data to a PC.

---

## 2. Press [⏻] (Power) to switch the camera on.

When you switch the camera on, check that the camera's operation check indicator has changed to being lit green. Note that, at this point, the LCD monitor is not switched on.

The computer recognizes built-in memory or memory cards in the camera as drives. The icon displayed differs depending on the Mac OS version used.

- The first time you connect the camera to a computer via a USB cable, an error message may appear on the computer. In this event, briefly disconnect and then reconnect the USB cable.
- Do not use the camera for observations while a micro USB cable is connected to the camera.

---

## 3. Double-click the displayed drive.



---

## 4. Drag & drop the "DCIM" folder to the desktop to copy the images to the computer.

---

## 5. Once copying is completed, eject the drive or drag & drop it to the Trash (Bin).

---

## 6. Disconnect the camera from the computer.

Check that the operation check indicator is not flashing red and then disconnect the USB cable.

## ■ Viewing images saved on the computer

**1. Double-click the displayed drive.**

---

**2. Double-click the “DCIM” folder to open it.**

---

**3. Double-click to open the folder containing the images you want to view.**

---

**4. Double-click the image file you want to view to display the image.**

- See “Folder structure in memory” (page 89) for more information on file names.

## ■ Notes on playing back video

- Once you have saved a video file to your computer, double-click that image file to play the video. Video files on a network or on a memory card may not play back correctly.
- Depending on the performance of your Macintosh, playback may not run correctly. In this event, try the following:
  - Shut down any other software that is running.

If a file will not play back correctly on your Macintosh, you may still be able to play it back on a TV with an HDMI port by using a third-party HDMI cable.

## Files and Folders

Individual photographed still images and other data are recorded on this camera as discrete blocks of data. Each such discrete block of data is referred to as a "file". Files are grouped together into "folders". Files and folders are automatically named so that they can be identified.

- For detailed information on the folder structure, see "Folder structure in memory" (page 89).

Name and maximum number created	Sample
<b>Files</b>	
Up to 9,999 files, numbered "CIMG0001" to "CIMG9999", are created in a single folder. The file extension used differs depending on the file format.	Name of the 26th recorded file:  CIMG0026.JPG          Serial No. Extension (4-digit)
<b>Folders</b>	
Up to 900 folders, from "100CASIO" to "999CASIO", are created.	Name of the 100th folder:  100CASIO   Serial No. (3-digit)

- The significance of the folder name and file name shown at the top right of the screen during still image or video playback is as follows:  
E.g.) 100-0023: The 23rd file in the "100CASIO" folder
- The folder names and file names can be viewed on a computer.
- The number of folders and files that can be saved varies depending on the capacity of the memory card used.

## Data in memory

Images photographed with this camera are stored in the camera's memory using a method that complies with the DCF (Design rule for Camera File system) standard.

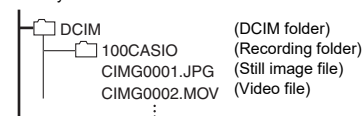
### ■ DCF standard

- Images shot with this camera can be viewed on other DCF-compatible brands of camera.
- Images shot with this camera can be printed on other DCF-compatible brands of printer.
- Images shot with other DCF-compatible brands of camera can be viewed on this camera.

Note that the above items are not all guaranteed to function.

### ■ Folder structure in memory

Memory



### ■ Image files supported by this camera

- Image files photographed with this camera
- Image files that comply with the DCF standard

Some functions may not be available for some DCF-compliant image files. Note also that playing back images shot on other cameras may take some time.



### ■ Notes on handling built-in memory and memory cards on a computer

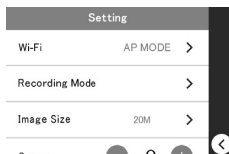
- When you store content from the camera's memory on a computer, save it in "DCIM" folders. Renaming DCIM folders using information such as the date can be useful for organizing your images later. However, when copying files saved on your computer back onto the camera, change the folder name back to "DCIM" beforehand. Folders with names other than "DCIM" are not recognized by this camera. This also applies to other folders inside the DCIM folder that you have renamed.
- To ensure that folders and files are correctly recognized by the camera, the folder structure in memory must match the structure shown on page 89.

# Other Settings

## Modifying other settings

This section describes menu options that can be configured in both recording mode and playback mode.

1. Tap  (recall) on the left side of screen.
2. Tap  (Setting).
3. Choose the option you want to set and select a setting.



### Configuring Wi-Fi

Menu item: **Wi-Fi**

<b>Wi-Fi</b>	Select ON or OFF.
<b>Wi-Fi Mode</b>	AP: Connects the camera to a computer via Wi-Fi. STATION: Connects the camera to a wireless LAN router.
<b>SSID</b>	DZ-D100 (default setting, used in AP mode)
<b>Password</b>	00000000 (default setting, used in AP mode) • To protect personal information, this should be changed (page 80).

### Configuring the recording mode options

Menu item: **Recording Mode**

Sets whether the available options are shown (ON) or hidden (OFF) when you select the recording mode.

### Setting the still image size

Menu item: **Image Size**

Selected size: 20M, 12M, 5M

Default: 20M

## Changing the LCD monitor brightness

---

Menu item: **Screen**

Settings: -2, -1, 0, +1, +2

Default: 0

## Configuring the camera sounds

---

Menu item: **Sounds**

<b>Startup</b>	
<b>Half Shutter</b>	ON: The tone sounds.
<b>Shutter</b>	OFF: No tone sounds.
<b>Operation</b>	
<b>Operation Vol</b>	Sets the volume for the operation tones. Range of settings: 0-7 (default: 3)

## Resetting the camera date and time

---

Menu item: **Adjust**

Tap the year, month, day, hour, minute or am (or pm)/24h option and then swipe up or down to change the setting.

After changing the date or time, tap **OK** to confirm the change.

- You can enter any date between 1 January 2018 and 31 December 2099.

## Changing the date style

---

Menu item: **Date Style**

You can choose from 3 styles for displaying the date on the screen.

E.g.) 10 July 2019

<b>yyyy/mm/dd</b>	19/7/10
<b>dd/mm/yyyy</b>	10/7/19
<b>mm/dd/yyyy</b>	7/10/19

## Changing the display language

---

### Menu item: Language

Sets the language used for on-screen messages.  
You can switch between 日本語 (Japanese) and English.

## Adjusting the white balance

---

### Menu item: White Balance

You can adjust the white balance of still images and videos shot in NORMAL mode.  
See page 70 for details.

## Setting the Doctor ID

---

### Menu item: Doctor ID

Enables/disables input of a Doctor ID when the camera starts up.  
To change the Doctor ID, tap “Doctor ID” and register a new ID.

## Setting the Patient ID

---

### Menu item: Patient ID

Enables/disables input of a Patient ID when the camera starts up.  
To change the Patient ID, tap “Patient ID” and register a new ID.

## 405 nm ON/OFF setting

---

### Menu item: 405 nm

Enables/disables the 405 nm light.

## Trash setting

---

### Menu item: Trash

Enables/disables the Trash function.

<b>ON</b>	Selected files are moved to the Trash.
<b>OFF</b>	Selected files are permanently deleted.

## Setting the date labels for thumbnail display

---

### Menu item: Date Label

Enables/disables display of the date label in the thumbnail display.



## PIN setting

---

### Menu item: PIN

Enables/disables input of a PIN when the camera starts up.

To change the PIN, tap “PIN” and register a new PIN.

## Formatting memory

---

### Menu item: Format

If a memory card is inserted in the camera, you can format the memory card. If not, you can format the built-in memory.

- Formatting deletes all the data in memory. Data deleted in this way cannot be recovered. Check that you really want to format the memory before proceeding.
- When you format memory, images are deleted even when Trash (page 92) is enabled.
- When formatting, ensure that you are using a battery with ample remaining charge. Switching the camera off during formatting could prevent correct formatting and cause the camera to malfunction.
- Never open the battery cover during formatting. Doing so cause the camera to malfunction.

## Resetting the camera to the factory defaults

---

### Menu item: Reset

See page 96 for more information on the factory default settings.

The settings below are not reset.

- Adjust, Language

## Checking the camera's firmware version

---

### Menu item: Version

This shows the camera's model name, the firmware version installed in the camera and its MAC address.

- The MAC address is a fixed number assigned to identify network devices.
- Check this screen after you upgrade the camera's firmware.

### Charging

#### ■ If the camera's operation check indicator flashes red during charging

- This indicates that charging cannot proceed because the ambient temperature or the battery temperature is either too high or too low. Disconnect the cable and leave the camera at room temperature for some time. Then resume charging within the recommended operating temperature range.
- Check for soiling on the battery contacts. If the contacts are dirty, wipe them clean with a dry cloth.

If you take the above steps and the operation check indicator is still flashing, refer to the contact information in "Inquiries Regarding Repairs".

### Notes on the battery

#### ■ Notes on using the battery

- In cold locations, the characteristics of the battery are such that the time for which battery can be used when fully charged may be shorter.
- Charge the battery within the recommended operating temperature range. At temperatures outside the recommended rate, charging may take longer or it may not be possible to charge the battery fully.
- Do not damage or peel off the outer seal on the battery.
- If the time for which the battery can be used reduces significantly even immediately after charging, the battery may have reached the end of its service life. Purchase a new battery. Do not continue to use an old battery.

#### ■ Notes on storing batteries

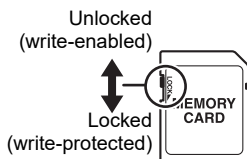
- Storing a charged battery for long periods may adversely affect the battery's characteristics. If the battery will not be used for some time, drain the battery charge fully before storing it.
- When the camera is not being used, remove the battery from the camera. When the battery is left in the camera, small amounts of current continue to flow even when the camera is switched off. This could drain the battery, lengthen the charging time or cause camera damage.
- Store batteries in a dry, cool location (20°C (68°F) or less).
- To prevent over-discharging, at least once every 6 months you should fully charge the battery and then fully use up the charge with the camera before storing the battery.

## Memory Cards

See page 41 for information on the supported memory cards and how to insert a memory card.

### ■ Memory cards

- SD, SDHC and SDXC memory cards are all fitted with write-protection (lock) switches. Use this switch if you are concerned about accidentally deleting your data. However, note that you cannot use a locked card for photography, format the card or delete data without first unlocking the card.
- Because recorded data can be deleted or corrupted by factors such as electrostatic charge or electrical noise, you are advised to always back up important files to another media (optical disk (Blu-ray, DVD, etc.), hard disk, etc.).



### ■ Notes on Using Memory Cards

- Processing speeds may be slower for some types of memory card. Always use ultra high-speed memory cards whenever possible. Note that not all operations are guaranteed, even for ultra high-speed memory cards.
- It is recommended that you use only CASIO-approved memory cards. For specific details such as manufacturers and supported capacities, visit <https://dz-image.casio.jp/products/derm/>.

### ■ Notes on transferring or disposing of memory cards and the camera body

The “Format” and “Delete” functions in this camera only change the file management information on the memory card. The data itself is left unchanged. The management of data on a memory card is the responsibility of the customer. Some recommended methods are outlined below.

- When disposing of a memory card, physically destroy the memory card itself, or use third-party dedicated data eraser software or a similar tool to completely delete the data on the memory card.
- When transferring a memory card, use third-party dedicated data eraser software or a similar tool to completely delete the data on the memory card.

It is also recommended that you use the “Format” function (page 93) to completely delete the data in built-in memory before transferring or disposing of the camera body.

## Resetting and reset content

The list below shows the settings in the recording mode and playback mode menus that are reset (initialized) by the Reset procedure (page 93).

- Settings marked as “–” below are not reset.

### **IMPORTANT!**


- Some menu options may not be available depending on the recording mode used.


<b>Wi-Fi</b>	Wi-Fi:	OFF	<b>Adjust</b>	–	
	Wi-Fi Mode:	AP		<b>Date Style</b>	yyyy/mm/dd
	SSID:	DZ-D100		<b>Language</b>	–
	Password:	00000000		<b>White Balance</b>	Auto
<b>Recording Mode</b>	NORMAL:	ON	<b>Doctor ID</b>	Input At Startup: OFF	
	DERMO CONT:	ON	<b>Patient ID</b>	Input At Startup: OFF	
	DERMO:	ON	<b>405 nm</b>	OFF	
	DERMO AIF:	ON	<b>Trash</b>	OFF	
	MOVIE NORMAL:	ON	<b>Date Label</b>	OFF	
	MOVIE DERMO:	ON	<b>PIN</b>	Input At Startup: OFF	
<b>Image Size</b>	20M				
<b>Screen</b>	0				
<b>Sounds</b>	Startup:	ON			
	Half Shutter:	ON			
	Shutter:	ON			
	Operation:	ON			
	Operation Vol:	3			


## Trouble shooting

### Symptoms and solutions

Symptoms	Probable cause and solution
<b>Power Supply</b>	
The camera won't switch on.	<ol style="list-style-type: none"><li>1) The battery may be loaded the wrong way round (page 37).</li><li>2) The battery may be fully discharged. If so, recharge the battery (page 38). If the battery immediately runs out even so, the battery has reached the end of its service life. Purchase a new CASIO lithium-ion battery (DNP-100M) (sold separately).</li></ol>
The camera switched itself off for no reason.	<ol style="list-style-type: none"><li>1) The Auto Power Off function may have been triggered (page 40). Switch the camera back on.</li><li>2) The battery may be fully discharged. If so, recharge the battery (page 38).</li><li>3) Protective action may have been triggered because the camera exceeded a set temperature. Leave the camera switched off for a while until it cools down before using it again.</li></ol>
The camera won't switch off. Nothing happens when I press the buttons.	Briefly remove the battery from the camera and then reload the battery.
<b>Charging</b>	
The operation check indicator does not light orange and I can't charge the camera battery.	<ol style="list-style-type: none"><li>1) Connect or disconnect the cable for the AC adapter for camera charging connected to the camera.</li><li>2) Briefly remove the battery from the camera and then reload the battery (page 38).</li><li>3) If reconnecting the AC adapter for camera charging or reloading the battery does not enable charging, the battery may be damaged due to an electrostatic discharge or similar event. Replace the battery.</li></ol>
<b>Photography</b>	
Pressing the shutter button doesn't take pictures.	<ol style="list-style-type: none"><li>1) If the camera is in playback mode, press [▶] or the shutter button to switch to recording mode.</li><li>2) If "Memory Full" is displayed, transfer some image to your computer and then delete images you no longer need on the camera. Otherwise, load another memory card.</li></ol>
I'm using Auto Focus but I still can't get the image in focus.	<ol style="list-style-type: none"><li>1) If the lens is dirty, wipe it clean.</li><li>2) Align the center of the focusing frame with the subject.</li></ol>



Symptoms	Probable cause and solution
The subjects in photographed images are blurred.	The image may not be focused. Align the focusing frame over the subject you want in focus and then take the shot.
The battery went dead while I was shooting with the self-timer.	The battery may be fully discharged. If so, recharge the battery (page 38).
Images displayed on the LCD monitor are slightly out of focus.	The adapter selector setting may be wrong. Use the correct setting for the recording mode (page 68).
There is noise in the image.	The camera automatically increases its sensitivity when the subject is dark, which may generate noise. Use a light or similar means to make the shot brighter.
Photographed images are not saved.	1) If the battery ran flat before recording was completed, the image is not saved. If the battery level indicator is  , immediately charge the battery (page 40). 2) If the memory card was removed before recording was completed, the image is not saved. Do not remove the memory card until recording is completed.
The image goes out of focus during video shooting.	1) The adapter selector setting may be wrong. Use the correct setting for the recording mode (page 68). 2) The lens may be dirty. If so, clean it (page 28).
I can't stop the camera shooting video.	An electrostatic discharge or similar event may be preventing the monitor screen from changing and stopping you from ending video shooting. Disconnect the AC adapter cable or reload the battery to switch the camera off and then on again.
The camera suddenly stops shooting video for no reason.	Protective action may have been triggered because the camera exceeded a set temperature. Let the camera cool down before using it again.
I can't change the function settings. The setting options are not displayed.	Some setting options are not available in some recording modes.

Symptoms	Probable cause and solution
<b>Playback</b>	
Images are not displayed.	If you used a memory card containing images shot on another camera that is not compliant with the DCF standard, the images are in a different file management format and cannot be played back.
<b>Wi-Fi function</b>	
I can't connect to the wireless LAN. The connection drops out.	<ol style="list-style-type: none"> <li>1) If the computer or wireless LAN router are too far from the camera, it cannot maintain a connection.</li> <li>2) The computer may be connected to another wireless device. Check that this camera is selected in the Wi-Fi connection settings on the computer (page 77).</li> <li>3) The connection may drop out if there is a microwave oven, cordless phone or other wireless device nearby. Keep the camera well away from other devices when using it.</li> <li>4) If none of the above problems apply and you still cannot establish or maintain a connection, the camera may have been damaged by an electrostatic discharge or similar event. Refer to the contact information in "Inquiries Regarding Repairs".</li> </ol>
<b>Other</b>	
The date and time shown on the screen and the dates for recorded files are incorrect.	The date and time settings are incorrect. Reset the date and time (page 91).
The words shown on the screen are in a foreign language.	The display language settings are incorrect. Reset the language (page 92).
Images are not imported when I connect to the computer via USB.	<ol style="list-style-type: none"> <li>1) The USB cable may not be securely connected. Check the connectors and ensure that they are securely plugged in.</li> <li>2) If the camera is not switched on, switch it on again.</li> <li>3) If you connect the USB cable to the computer via a USB hub or similar device, the camera may not be recognized correctly. Connect the USB cable directly to a USB port on the computer.</li> <li>4) You cannot communicate via USB when the battery level indicator shows . Recharge the battery before connecting to the computer.</li> </ol>

Symptoms	Probable cause and solution
When I switch the camera on, the time setting screen appears.	<p>1) The camera is not set to the factory defaults, or the camera has been left with the battery fully discharged. Configure the settings correctly (pages 40, 45).</p> <p>2) The memory management area inside the camera may be corrupted. If so, use the Reset procedure to restore the default camera settings (page 93). Then configure the settings. If the time setting screen still does not appear when you switch the camera back on, refer to the contact information in "Inquiries Regarding Repairs".</p>
Various icons and numbers appear on the screen.	Such displayed items include the screen displays needed for photography and information on images you have shot. Tapping  allows you to toggle between showing and hiding information on the screen (page 36).
If you set the time after purchasing the camera and then immediately remove the battery, the set time is reset.	<p>Load the battery and reset the time (page 45). Then leave the battery in the camera for at least 24 hours.</p> <ul style="list-style-type: none"> <li>If you have left the battery in the camera for at least 24 hours and the time is still reset every time you remove the battery, the function for retaining the camera settings may be corrupted. In this event, refer to the contact information in "Inquiries Regarding Repairs".</li> </ul>
The buttons do not work immediately after I switch the camera on.	If you are using a high-capacity memory card, more time is required between switching the camera on and being able to use the buttons.



## Messages displayed on the screen

<b>Card ERROR</b>	<p>Displayed where there is an error on the memory card. Switch the camera off and re-insert the memory card. If the same message reappears when you switch the camera back on, format the memory card (page 93).</p> <p> <b>IMPORTANT!</b></p> <ul style="list-style-type: none"> <li>Note that formatting the memory card will delete all the content (files) on the card. Before formatting the memory card, use a computer or other device to save any uncorrupted files on the memory card.</li> </ul>
<b>This card is not formatted.</b>	<p>Displayed where there is the memory card has not been formatted. Format the memory card (page 93).</p>
<b>The card is locked.</b>	<p>The LOCK switch provided on the SD, SDHC or SDXC memory card is in the locked position. You cannot record or delete files on a locked memory card.</p> <p style="text-align: right;">LOCK switch  </p>
<b>This file cannot be played.</b>	<p>You are trying to play back a file that is corrupted or that cannot be played on this camera.</p>
<b>Battery is low.</b>	<p>Appears when the battery has run flat.</p>
<b>There are no files.</b>	<p>You have not recorded any files, or all the recorded content has been deleted and there are no files on this camera.</p>
<b>LENS ERROR</b>	<p>If the lens is operated unexpectedly, this message appears and the camera shuts down. If the same message still appears after you switch the camera back on, refer to the contact information in “Inquiries Regarding Repairs”.</p>
<b>Send failed.</b>	<p>Displayed when an attempt to send images to the D’s IMAGE Viewer D image management software failed.</p>
<b>Communication stopped.</b>	<p>Displayed when communication to the computer via a Wi-Fi connection is interrupted.</p>
<b>Could not connect to Wi-Fi</b>	<p>Displayed when the Wi-Fi connection to the connected computer drops out.</p>

## No. of Remaining Still Image Shots/Remaining Shooting Time

### Still images

Image size (pixels)	File size	No. of shots in built-in memory*1	No. of shots on SD memory card*2
20M (5184×3888)	8.06MB	5	1860
12M (3968×2976)	4.72MB	9	3190
5M (2560×1920)	1.97MB	23	7590

### Video

Image size/ pixels (audio)	Transfer rate (frame rate)	1 file Max. size	Recording time in built-in memory*1	Max. available recording time on SD memory card*2	File size for 1-minute recording	Available continuous shooting time per shot*3
UXGA 1600×1200 (monaural)	18Mbps (30 frames/sec.)	Up to 1.4GB	18 sec.*4	Approx. 1hour 55 min.	140MB	Approx. 10 min.

\*1 For built-in memory capacity after formatting (approx. 40.0MB).

\*2 For a 16GB SDHC memory card (by SanDisk Corporation). The number of available shots/recording time may differ depending on memory card being used.

\*3 If you use an SD memory card with a capacity that is smaller than the maximum size for one file, the time may be shorter than that shown.

\*4 The built-in memory cannot fully meet the video transfer rate. Use an ultra high-speed memory card (page 41).

- The values given for the number of shots, shooting time and recording time are intended purely as a guide. The actual performance may be lower depending on the image content.
- The numbers provided for the file size and transfer rate are intended purely as a guide. Actual performance may vary depending on the subject photographed.
- If you use memory cards with different capacities, the number of images you can shoot should be roughly in proportion with the card capacity.

## Main Specifications/Optional Products

**Image file formats** Still images: JPEG (Exif Ver. 2.3/DCF2.0-compliant/DPOF non-compliant)  
Video: MOV format, H.264/AVC-compliant, IMA-ADPCM audio (monaural)

**Recording media** Built-in flash memory (Image recording area: Approx. 40.0MB\*)  
SD/SDHC/SDXC  
\* Built-in memory capacity after formatting

**Recorded pixels** Still image:  
• NORMAL, DERMO CONT, DERMO or MICROSCOPE mode  
20M(5184×3888)/  
12M(3968×2976)/  
5M(2560×1920)  
• DERMO AIF mode  
14M(4368×3280)/  
5M(2560×1920)  
Video: UXGA (1600×1200)

**Valid pixels** Approx. 20.16 megapixels

**Imaging element** Size: 1/2.3 inch CMOS (back-side illuminated)  
Total pixels: Approx. 21.14 megapixels

**Lens** F3.3/f=7.67 mm  
(Equivalent to 53.5 mm for 35mm film)

**Zoom** Digital zoom 8x  
Zoom resolution: 0.1x

**Focus** Contrast detection AF

**Shooting range** NORMAL mode:  
From lens (front glass element):  
approx. 1 cm to ∞ (0.4" to ∞)

DERMO mode:  
From lens (front glass element): 0 to approx. 3 mm (0.1")  
• Using small-diameter adapter:  
From adapter (front glass element): 0 to approx. 3 mm (0.1")

**Exposure compensation** -2.0EV to +2.0EV  
(0.1EV increments)

**Shutter type** CMOS electronic shutter

**Shutter speed** 2-1/8000 sec.

**Switchable filters** Polarizing, non-polarizing, 405 nm

**White Balance** NORMAL mode:  
Auto, Fluorescent N, Fluorescent D, Tungsten, Manual  
Close-up (DERMO) photography: Fixed

**ISO sensitivity (standard output sensitivity)** NORMAL mode: Auto  
Close-up (DERMO) photography: Fixed

**Communication Wi-Fi: functions**  
• Compliant standard: IEEE 802.11b/g/n  
• Range of frequencies used: 1-11 ch, 2412-2462 MHz  
• Encryption method: WPA2  
• Radiant power: 8.51 mW

**Image monitor** 3.0 inch TFT color LCD  
1,036,800 dots  
Capacitive touch panel

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**External connection ports** Micro USB port (Hi-Speed USB-compatible), HDMI™ output (Micro, type D), DC jack (5V, 3A)

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**Microphone** Monaural

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**Speaker** Monaural

---

**Power supply** Lithium-ion battery (DNP-100M) (1)

---

**Service life** 5 years

---

### Battery life

The battery life figures shown below are an approximate guide to how long the battery will last when used at a temperature of 23°C (73°F). They constitute no guarantee of shooting time or number of shots. Battery life will be shorter at lower temperatures.

<b>No. of still image shots*1</b>	Approx. 175
<b>Actual video recording time*1</b>	Approx. 45 min.

- Temperature: 23°C (73°F)
- Battery used: DNP-100M (rated capacity 1690 mAh)
- Recording media: 16GB SDHC memory card (by SanDisk Corporation)

\*1 Compliant with CIPA (Camera & Imaging Products Association) standards

- The above figures are for a new, fully charged battery. Battery life will gradually shorten with repeated use.
- These figures are not guaranteed for battery life in actual use.

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**Power consumption** 3.7 V DC, approx. 6.1 W

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**Size** 127.5×76.0×86.1 mm  
(5.0"×3.0"×3.4") (W x H x D)

---

---

**Weight** Approx. 395 g (13.9 oz) (including battery and memory card)  
Approx. 350 g (12.3 oz) (excluding battery and memory card)

---

**Applicable standards** IEC60601-1  
IEC60601-1-2

The monitor and computer used should be compliant with the IEC/UL/CSA/EN60950-1 or JIS C 6950-1 standard or with the VCCI-B, FCC-B or CE standard. The use of non-compliant products could result in failure to meet the applicable standards.

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**Applicable emissions class/group** CISPR11 group 1, class B  
IEC61000-4-3  
Radiated RF electromagnetic field

**Immunity test level** Residential healthcare environments  
IEC61000-4-6  
Conducted disturbance caused by RF electromagnetic fields  
Residential healthcare environments

---

**Medical electrical equipment safety standards** This product qualifies as a type B applied part.  
Referencing the icon at right Class II ME equipment



- Refer to the "Component Names" for information on applied parts.
-

### ■ Lithium-ion battery (DNP-100M)

<b>Rated voltage</b>	3.7 V
<b>Rated capacity</b>	1690 mAh
<b>Size</b>	36.0×55.2×13.7 mm (1.4"×2.2"×0.5") (W x H x D)
<b>Weight</b>	Approx. 46 g (1.6 oz)

### ■ Camera Applied Parts

<b>Glass cover</b>	Aluminosilicate glass
<b>Adhesive</b>	Acrylic UV/visible-light curing
<b>Glass retainer</b>	Polybutylene terephthalate (PBT)

### ■ Small-diameter adapter Front section

<b>Glass cover</b>	Aluminosilicate glass
<b>Adhesive</b>	Acrylic UV/visible-light curing
<b>Glass retainer</b>	Polybutylene terephthalate (PBT)

### ■ 3D adapter Front section

<b>Body</b>	Thermoplastic polyurethane elastomer
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