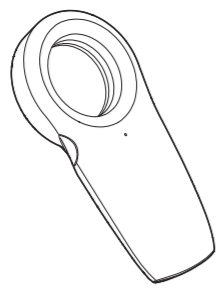


DERMOSCOPE

Model **DZ-S50**

User's Guide



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Thank you for purchasing this CASIO product.

- Be sure to keep all user documentation handy for future reference.
- Read the "Safety Precautions" before using this product to ensure that you use it correctly.

Read this first!

- 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 CASIO COMPUTER CO., LTD. is forbidden under copyright laws.
- CASIO COMPUTER CO., LTD. shall not be held liable for any damages or lost profits suffered by you or any third party due to the use or malfunction of this product.
- The illustrations shown in this manual may differ from the actual product.

Operating Principle

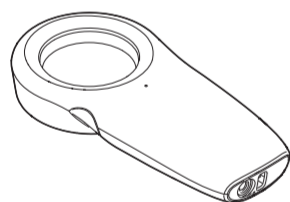
When you turn the dermoscope on, the LED lights around the lens on the rear of the dermoscope light. Look through the lens from the front while these lights illuminate the patient's skin to observe the affected area without touching the skin. Pressing the polarizing selector button toggles the emitted LED light between polarized and non-polarized.

Intended Purpose

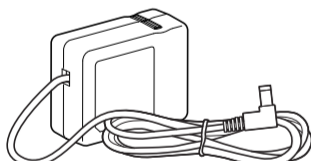
This dermoscope should only be used for observing skin lesions. It is intended for observing the surface of the skin over the entire body. No restrictions apply to the age or gender of the patient being observed. Use of this dermoscope is restricted to physicians and other healthcare professionals. It should not be used by patients themselves.

Items Included

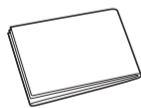
When you open the package, check that it contains all the items listed below. If any items are missing, refer to the contact information provided in "Inquiries Regarding Functioning, Operation or Purchase".



DERMOSCOPE (DZ-S50)



AC adaptor for dermoscope charging



User's Guide

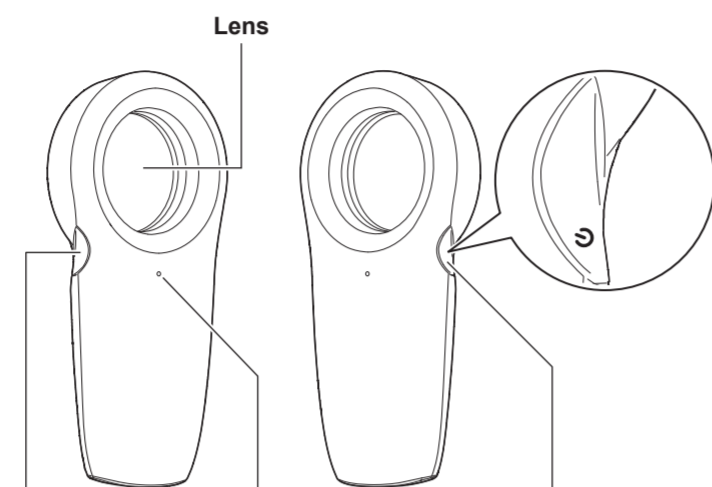
Optional Products



Conversion Lens (DSL-50M)
• The conversion lens is packaged with a cap fitted as shown at left.

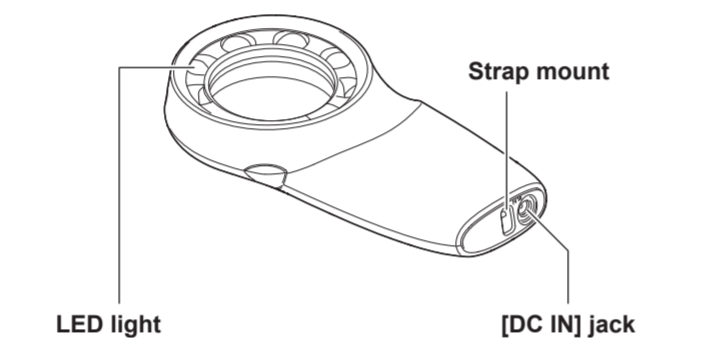
Component Names

Front



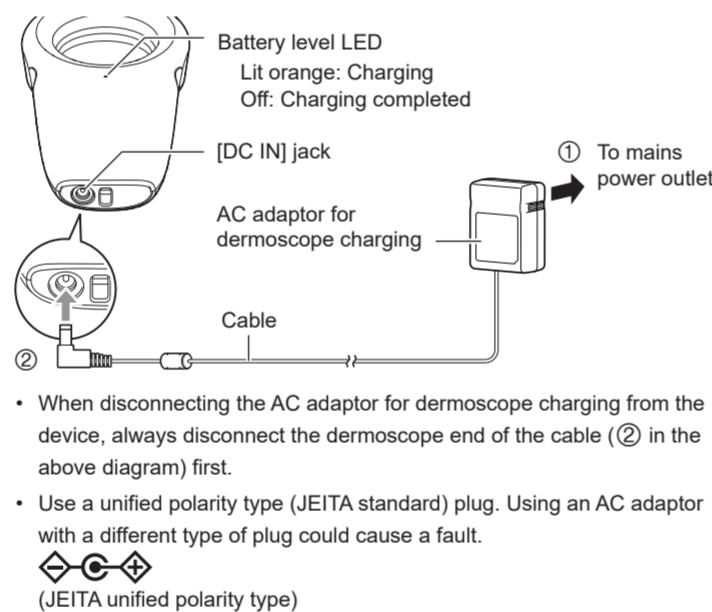
- Lens**
- Polarizing selector button**
 - Pressing the polarizing selector button toggles the LED light between polarized and non-polarized.
- Battery level LED**
 - Shows the status of the rechargeable battery. Refer to "Battery Level LED Display".
- [ON] (Power) button**
 - Pressing the button turns the dermoscope on or off.

Rear



Charging the Dermoscope

- With the dermoscope switched off, connect the cable in the sequence shown in ① and ②.
- Charging time: Approx. 160 minutes



- When disconnecting the AC adaptor for dermoscope charging from the device, always disconnect the dermoscope end of the cable (② in the above diagram) first.
- Use a unified polarity type (JEITA standard) plug. Using an AC adaptor with a different type of plug could cause a fault.

Battery Level LED Display

The LED lights or flashes orange to show the dermoscope state.	
Off	Normal state. The battery level indicator LED is off if the dermoscope is switched on and operating normally.
Flashing slowly (approx. 2 second intervals)	The battery level is low. Recharge the battery.
Lit	Charging. The LED goes off once charging is completed.
Flashing rapidly (approx. 0.5 second intervals)	Indicates that the battery cannot be charged. See "When the Battery Level LED Flashes Orange During Charging".

When the Battery Level LED Flashes Orange During Charging

- When the battery level LED flashes rapidly at approx. 0.5 second intervals, this indicates that the battery cannot be charged because the ambient temperature or the battery temperature is too high or too low. Disconnect the cable and leave the dermoscope at room temperature for some time. Then resume charging within the operating temperature requirements.
- If you take the above steps and the battery level LED is still flashing, the battery may be defective. Refer to the contact information in "Inquiries Regarding Repairs".

Other Important Notes on Charging

- Charge the dermoscope using the methods specified in this manual.
- If the battery has become hot after being used, it may not be possible to fully charge it. Allow the battery to cool down before recharging 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.
- Do not use the AC adaptor for dermoscope charging with products other than this dermoscope.
- 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 dermoscope, unplug the AC adaptor from the mains power socket.
- Do not place this dermoscope in a location that interferes with connecting or disconnecting the AC adaptor.
- Use the AC adaptor for dermoscope charging to charge this dermoscope.

Using the Dermoscope

This dermoscope enables you to view the affected area at 6x magnification.

1 Press the [ON] (Power) button

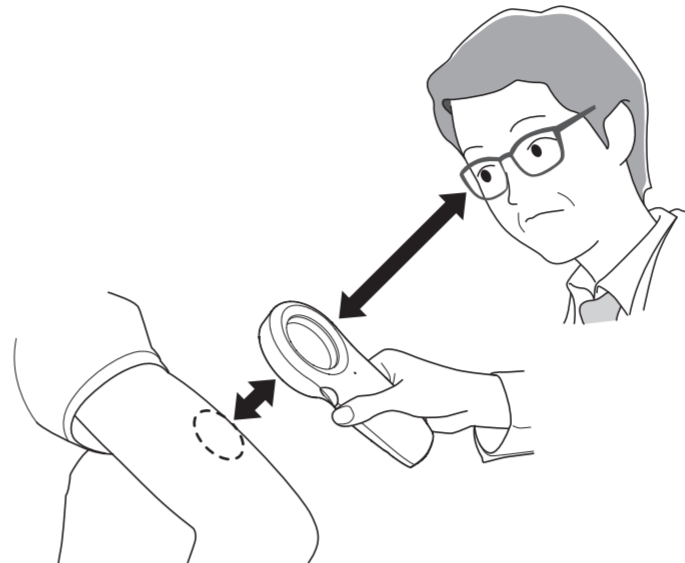
- The dermoscope LED lights turn on in polarized mode.



With LED lights lit in polarized mode

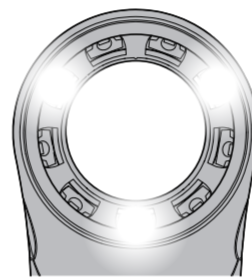
2 Adjust the position of the dermoscope

- Position the dermoscope to give the best view of the area to be observed.



3 Observe the affected area

- Press the polarizing selector button to select either polarized or non-polarized LED light.



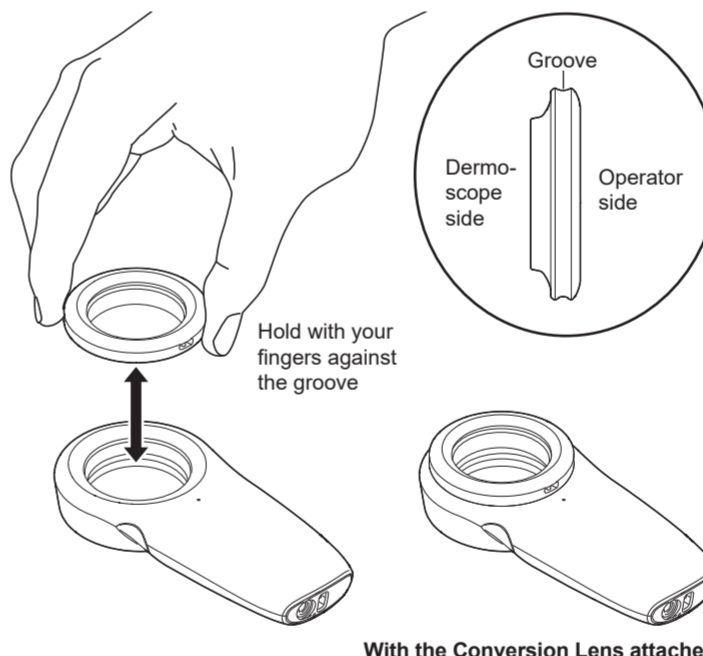
With LED lights lit in non-polarized mode

- Approximately 3 minutes after it is switched on, the dermoscope automatically shuts down (Auto Power Off function).
- When the dermoscope is switched on and the battery level LED flashes slowly at approx. 2 second intervals, this indicates that the battery level is low. Recharge the battery.

Attaching the Conversion Lens

Attaching the optional Conversion Lens (DSL-50M) enables you to view the affected area at 9x magnification.

- Remove the cap provided with the lens and attach the lens to the front of the dermoscope.
- The conversion lens attaches magnetically.



- After completing the observation, remove the conversion lens from the dermoscope and store it with the cap re-attached, taking care not to scratch the lens.

Icons & Symbols

	Warning icon	ISO7010-W001 Indicates a general, non-specific warning
	Class II equipment icon	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
	Power (ON/OFF) icon	IEC60417-5009 Power (standby)
	WEEE Directive icon	IEC60417-6414 A mark indicating that this product is subject to the WEEE Directive
	DC icon	IEC60417-5031 A mark indicating direct current (DC)
	AC plug icon	JEITA CP-1104B-01030 A mark applied to equipment that complies with JEITA unified polarity
	Indoor use icon	A mark indicating that the equipment is specified for indoor use only

Troubleshooting

I can't charge the dermoscope

- Check that the AC adaptor for dermoscope charging is connected to an AC power outlet.
- Disconnect and reconnect the cable for the AC adaptor for dermoscope charging.

The dermoscope won't switch on

- You might be pressing the polarizing selector button. Press the button on the opposite side and check that the LED lights turn on.
- The battery may be fully discharged. In this event, recharge the battery.
- If the battery immediately runs flat after charging, the battery has reached the end of its service life. Refer to the contact information in "Inquiries Regarding Repairs".

The affected area being observed is difficult to see

- Check that there is no dirt or dust on the lens. If you find dirt or dust on the lens, remove it using a blower.
- Any soiling that cannot be blown off should be wiped off using a clean gauze or soft cloth soaked in ethanol for disinfection at the appropriate dilution.
- Check that there are no chips or cracks in the lens. If any chips or cracks are found, refrain from using the dermoscope and refer to the contact information in "Inquiries Regarding Repairs".

The dermoscope switched itself off for no reason

- The Auto Power Off function may have been triggered. Press the Power button again.
- You may have pressed the Power button while the dermoscope was starting up. Press the Power button again.
- The battery may be fully discharged. In this event, recharge the battery.

The battery level LED is flashing

- If the dermoscope is in use and the battery level LED flashes slowly at approx. 2 second intervals, this indicates that the battery level is less than 20%. In this event, recharge the battery.
- If the battery level LED flashes rapidly at approx. 0.5 second intervals during charging, this indicates that the battery cannot be charged. Disconnect the cable and leave the dermoscope at room temperature for some time. Then resume charging within the operating temperature requirements. If you resume charging and the battery level LED is still flashing, the battery may be defective. Refer to the contact information in "Inquiries Regarding Repairs".

Notes on Using the Dermoscope

- Note that this product is not a diagnostic device. It should only be used for observing skin lesions.
- The dermoscope is a medical device for dermal observations and consists of components including a lens and LEDs for illumination.
- The distance between the dermoscope and the operator should be no greater than 40 cm (15.7").
- Do not press the Power button on the dermoscope unnecessarily. Doing so could inadvertently shine light from the LEDs directly into someone's eyes.
- Do not bring the dermoscope into direct contact with the affected area during use.
- In cold locations, the characteristics of the battery are such that the time for which the battery can be used when fully charged may be shorter.
- Charge the battery within the operating temperature requirements. At temperatures outside the recommended range, charging may take longer or it may not be possible to charge the battery fully.
- Do not damage or peel the outer seal off a battery that has been removed for disposal.
- If the time for which the battery can be used is significantly shorter even immediately after charging, the battery may have reached the end of its service life. Refer to the contact information in "Inquiries Regarding Repairs".
- Do not directly touch the lens or LED lights.
- Attach a third-party strap to the dermoscope to avoid dropping it during use.
- Before and after use, check that there is no soiling, chipping or splitting in the dermoscope body and lens.
- Do not use the dermoscope when it is damaged.
- Do not attempt to clean or maintain the dermoscope while the LED light is on.

Specifications




DERMOSCOPE (DZ-S50)

Size	67.5 × 140.2 × 23.1 mm (2.7" × 5.5" × 0.9") (W × H × D)
Weight	Approx. 125 g (4.4 oz) or 145 g (5.1 oz) (with optional Conversion Lens attached)
Lens magnification	6x 9x (with optional Conversion Lens attached)
Focal distance	f = 50 mm f = 31.25 mm (with optional Conversion Lens attached)
Maximum effective diameter	40.5 mm (1.6")
No. of LED lights	Polarized: 6 Non-polarized: 3
Power supply	Lithium-ion battery (built-in)
Battery life	Approx. 120 min. (LED lights lit continuously) • The battery life figures are an approximate guide to how long the battery will last when used at a temperature of 23°C (73.4°F) and constitute no guarantee of operating time. Battery life will be shorter at lower temperatures. • These figures are for a new, fully charged battery. Battery life will gradually shorten with repeated charging. • These figures are not guaranteed for battery life in actual use.
Service life	5 years
Operating temperature requirements	10°C to 35°C (50°F to 95°F)
Applicable standards	IEC60601-1 IEC60601-1-2
Applicable emissions class/Group immunity test level	CISPR11 group 1, class B IEC61000-4-3 Radiated RF electromagnetic field Residential healthcare environments IEC61000-4-6 Conducted disturbance caused by RF electromagnetic fields Residential healthcare environments
Medical electrical equipment safety standards	ME equipment with internal power supply (AC adaptor not used) Class II ME equipment (AC adaptor used) ME equipment with no applied parts
Operating mode	Continuous operation (running)


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 triangle symbol (▲) means that the user should be careful.


















 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 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 Built-in 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. 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.
	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 Adaptor	
	Observe the precautions below in order to avoid AC adaptor fire and electric shock. Use only the specified type of AC adaptor. Use the AC adaptor 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 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.  Should the power cord become damaged, refer to the contact information in "Inquiries Regarding Repairs".
	Do not touch the plug with wet hands. Doing so creates the risk of electric shock.
	If the AC adaptor or power cord becomes damaged, refer to the contact information in "Inquiries Regarding Repairs". Continued use creates the risk of fire and electric shock. Do not use the AC adaptor 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 adaptor or power cord. Water creates the risk of fire and electric shock.  Before leaving the product unattended, unplug the AC adaptor 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.
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. Other areas where there are high or low temperatures (operating temperature range: 10°C to 35°C (50°F to 95°F))
	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 adaptor, unplug its power plug from the power outlet. 3. Refer to the contact information in "Inquiries Regarding Repairs".
Disassembly and Modification	
	Do not attempt any disassembly or modification. For any internal inspection, adjustment, or repair, refer to the contact information in "Inquiries Regarding Repairs". Doing so creates the risk of electric shock, burn injury, and personal injury.

	WARNING
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 adaptor. Should any such matter get into the product, immediately perform the steps below. Continued use creates the risk of fire and electric shock. 1. Turn off power. 2. If you are using an AC adaptor, unplug its power plug from the power outlet. 3. Refer to the contact information in "Inquiries Regarding Repairs".
	Do not locate a flower vase or other liquid container on top of or next to the product or AC adaptor. Liquid spilling from a container creates the risk of fire and electric shock.
Conversion Lens (optional product)	
	Do not use the product with the Conversion Lens (optional product) attached on patients such as those with cardiac pacemakers. The Conversion Lens is attached magnetically. This magnetic force could cause a cardiac pacemaker or other medical device to malfunction.

	CAUTION
Rechargeable Built-in 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, refer to the contact information in "Inquiries Regarding Repairs".
AC Adaptor	
Observe the precautions below in order to avoid AC adaptor fire and electric shock.	
	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.
User Maintenance	
	Before cleaning the product, turn off power and unplug the AC adaptor from the power outlet. Failure to do so creates the risk of electric shock. Leaving the AC adaptor plugged in creates the risk of damage to the power cord, fire, and electric shock.
Connections	
	Connect only specified devices and items to connectors. Connecting to other devices and items creates the risk of fire and electric shock.
Strap	
	If you have attached a third-party strap to the product, do not swing the product around by the strap. Doing so could damage the product or cause injury.
LED Lights and Other Light Emitting Functions	
	Do not use the LED lights or other light emitting functions with the product pointed at a person or close to a person's face. Doing so could result in damage such as impaired vision.
	Take care that your fingers, gloves, or other items are not touching the LED lights. Touching the flash window can lead to burn injury, smoke, discoloration, or malfunction.
	Do not use the LED lights while they are dirty, dusty or otherwise soiled with foreign matter. Doing so can lead to smoke emission and discoloration.

Notes on Handling the Dermoscope

- Use the dermoscope indoors. (consulting/examination rooms, rooms for home health care, etc.)
- Do not operate with wet hands.
- Do not subject the dermoscope to sterilization using equipment such as an autoclave.
- Do not use lighting or communications equipment that emits electromagnetic waves near the dermoscope. Doing so could cause a malfunction.
- When observing skin lesions, take care not to hit the lens against other objects, drop the dermoscope or otherwise subject the dermoscope to strong impacts.
- Do not use the dermoscope in ways that subject the lens to excessive force, such as holding the dermoscope by the lens when conducting observations.
- When carrying the dermoscope in a bag or other container, avoid subjecting the dermoscope to excessive force.
- Do not drop the dermoscope or otherwise subject it to strong impacts.
- Do not attempt to disassemble or modify the dermoscope.
- 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 dermoscope.
- Take care not to shine the lights at other people. Take particular care not to shine the LED lights into other people's eyes. When observing skin lesions close to the eye, take care not to shine light directly into the patient's eye.
- Do not look directly into the LED lights. This could lead to the eye being exposed to strong light which could cause impaired eyesight.
- Always use only the specified AC adaptor. The use of other products may lead to faults or malfunctions.
- If you notice any unusual odors, overheating, discoloration, distortion or any other abnormality when using, charging or storing this dermoscope, immediately stop using it. Continued use of the dermoscope could cause the battery to overheat, rupture or catch fire.

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

Operating Environment

- Operating Temperature Requirements: 10 to 35°C (50 to 95°F)
- Operating Humidity: 10 to 85% (non-condensing)
- Do not place the dermoscope in any of the following locations.
 - In an area exposed to direct sunlight, or large amounts of moisture, dust, or sand
 - Near heating or cooling devices, or in other areas subjected to extreme changes in temperature or humidity
 - Inside of a motor vehicle on a hot day, or in an area subjected to strong vibration
 - Locations accessible to children
 - In an elevated or other such location from which the dermoscope could fall and be damaged and/or cause injury
- The dermoscope should be used in a dedicated medical treatment facility or home health care situation.

Condensation

If the dermoscope 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 the dermoscope and cause a fault. To prevent condensation in such situations, place the dermoscope 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.

Maintenance for the Dermoscope

- Do not rub the lens surface as this could scratch the lens.
- Check that there is no dirt or dust on the lens. If you find dirt or dust on the lens, remove it using a blower.
- Any soiling that cannot be blown off should be wiped off using a clean gauze or soft cloth soaked in ethanol for disinfection at the appropriate dilution.
- To prevent possible infection, keep the dermoscope clean and hygienic before and after use.

Disposal or Recycling Precautions

- Disposal and/or recycling of the dermoscope, the AC adaptor for dermoscope charging and the Conversion Lens should be carried out in accordance with the directions given by your local government authority for environmental protection.

Other Notes

- The dermoscope 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 the dermoscope. Proximity to such equipment may impair device performance.
- Transportation temperature: -20 to 60°C (-4 to 140°F)
- Transportation humidity: 10 to 85% (non-condensing)

Notes on Storing the Dermoscope

- Storage temperature: -20 to 60°C (-4 to 140°F)
- Storage humidity: 10 to 85% (non-condensing)
- Switch the dermoscope off, wipe the dermoscope body clean and store it in hygienic conditions.
- Store the dermoscope in a location that is not subject to high temperatures or humidity or exposed to direct sunlight.
- Store the dermoscope out of the reach of children.
- Do not store the dermoscope in an elevated or other such location from which it could fall and be damaged and/or cause injury.
- 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 the dermoscope.
- 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 drain the battery charge fully before storing the dermoscope.