

IPLEX G Lite/IPLEX G Lite-W Operation Manual

Before handling this product, please read through and follow the instructions and precautions in the instruction manual of the IPLEX G Lite/G Lite-W.

This operation manual is an excerpt from the descriptions and instructions in the instruction manual of the IPLEX G Lite/G Lite-W, which include the setup procedures during the use of the product, the functions of the basic operating components, descriptions on the indicator and menu displays, and safety precautions.

Intended use

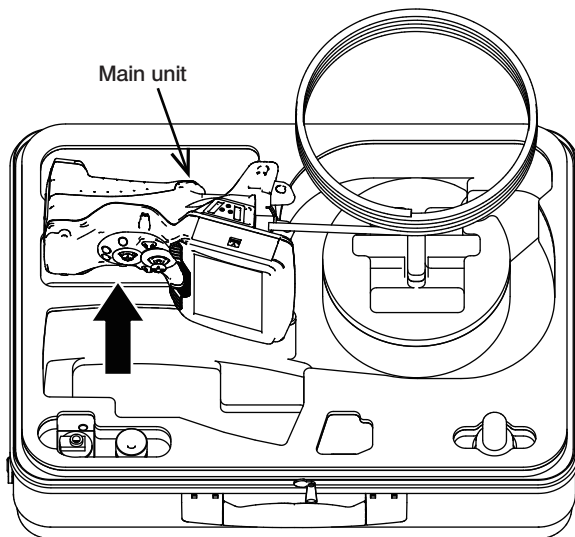
This instrument is intended for inspecting and observing the interior of machinery, equipment, materials, and other objects, without damaging the object being inspected.

Setting up the IPLEX G Lite/G Lite-W

This product can be set up easily for inspection to be performed immediately. Simply follow the five steps below to complete the setup.

1. Removing components from the case

Hold and lift the main unit and the coiled insertion tube out of the case.

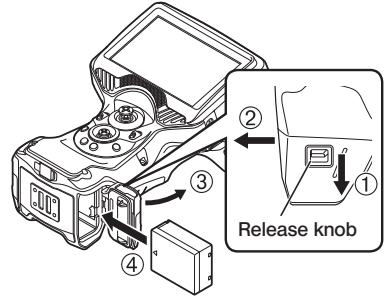


2. Preparing the power supply

■ Using battery

Follow the steps below to load the battery.

- ① Move the release knob of the battery compartment door in the direction indicated by the arrow.
- ② With the release knob kept in this position, slide the battery compartment door in the direction indicated by the arrow.
- ③ The battery compartment door is now open.
- ④ Insert the battery while paying attention to the orientation of the battery. Check that the battery is locked in place and close the compartment door.

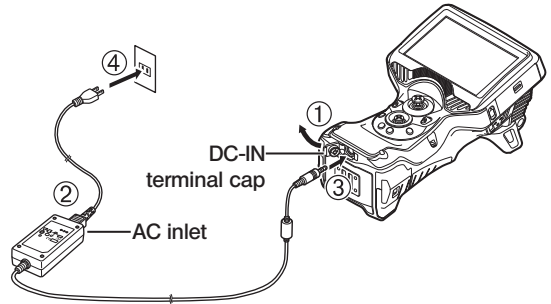


Confirm that the battery compartment door is locked.

■ Using AC adapter

Follow the steps below to connect the AC adapter.

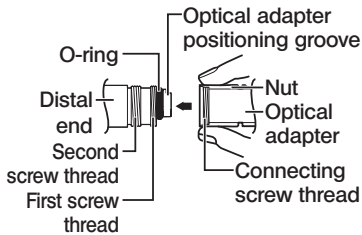
- ① Open the DC-IN terminal cap on the main unit.
- ② Connect the AC power cord to the AC inlet of the AC adapter.
- ③ Connect the output connector of the AC adapter to the DC-IN terminal of this instrument.
- ④ Then, connect the plug of the AC power cord securely to a power outlet.



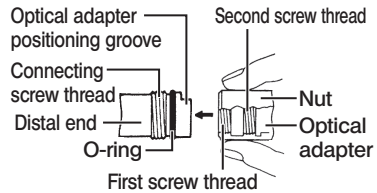
3. Attaching the optical adapter

- ① Holding the optical adapter and the distal end so that they make one straight line each other, carefully insert the optical adapter into the distal end.

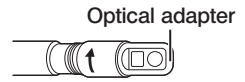
■ 4-mm type



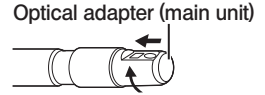
■ 6-mm type



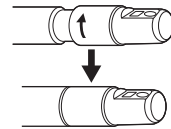
2 Rotate the nut of the optical adapter clockwise until the connecting screw thread passes over the first screw thread.



3 After passing the first screw thread, rotate the entire main body of the optical adapter clockwise while pushing gently until the optical adapter main body fits into the positioning groove of the insertion tube and stops rotating anymore.



4 Rotate the nut of the optical adapter clockwise to attach the connecting screw thread to the second screw thread. Tighten the nut until it stops completely.

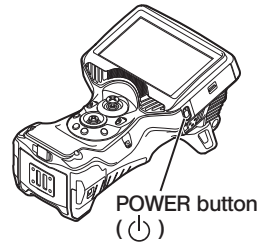


NOTE

- If using the stereo optical adapter, please refer to the instruction manual of IPLEX G Lite.
- The IPLEX G Lite-W unit is used exclusively for forward view. The optical adapter is not replaceable. The following items below described in this manual are not applicable to the IPLEX G Lite-W.
 - Items related to optical adapter
 - Items related to stereo measurement (scaler measurement is possible)

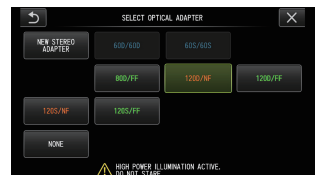
4. Turning ON the power

Press the [POWER] button (⏻) of the main unit for about 1.5 to 2 seconds. The 4 buttons light up and the power turns on. The light automatically turns on when the power is turned on. The display screen and menu operations become enabled approx. 10 seconds after the [POWER] button (⏻) is pressed.



5. Selecting an optical adapter

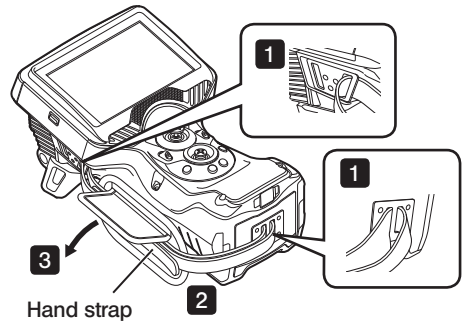
A list of optical adapters is displayed when the power is turned on. Select the optical adapter to use, and press the [MEAS/OK] joystick.



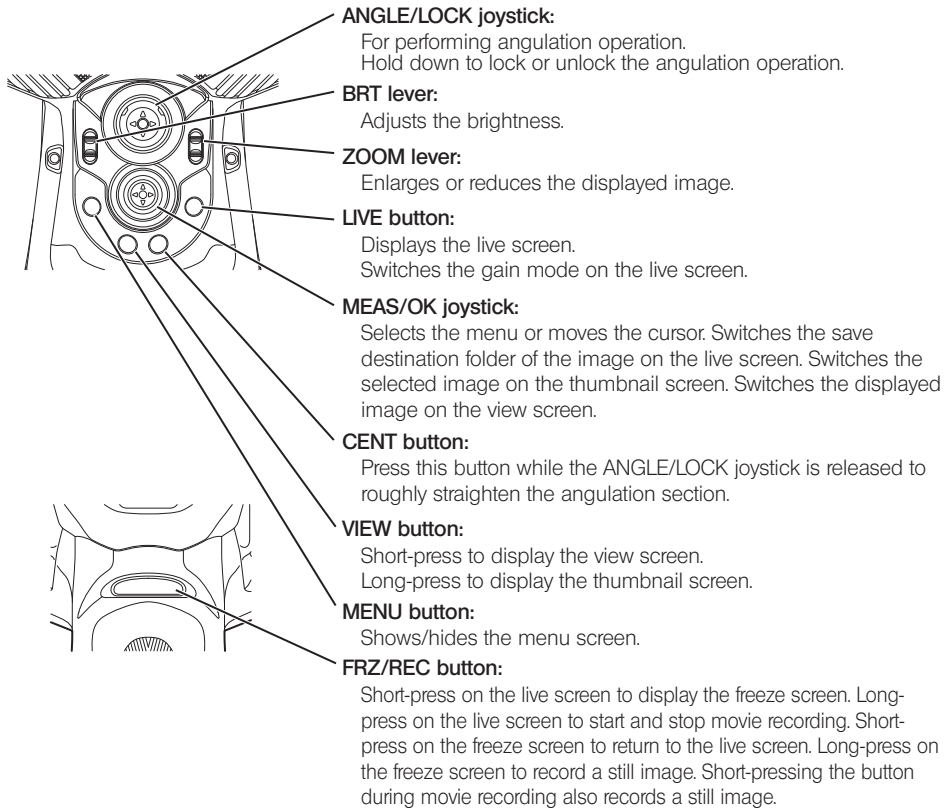
Setup is now complete.

Using the hand strap

- 1** Pass the hand strap through the two strap holders.
- 2** Adjust the length of the hand strap by the length adjuster buckle.
- 3** Check to ensure that the hand strap is securely fastened.
(The figure shows the instrument held with the left hand.)



Part names and functions



TIP

- The buttons on the two sides of the LCD monitor screen can also be operated. For more details, please refer to the instruction manual of the IPLEX G Lite/G Lite-W.

Perform the angulation operation

1. Operate the [ANGLE/LOCK] joystick carefully in the direction you want to observe.

Lock the angulation status

1. While the angulation section is bent, press the [ANGLE/LOCK] joystick to lock the angulation section.
2. Even though the angulation is locked, the angulation operation can be adjusted finely by operating the [ANGLE/LOCK] joystick.

Record images

When using a media (SDHC card) for recording images for the very first time, format the SDHC card on this instrument before recording images. For more details on the procedure, please refer to the instruction manual of the IPLEX G Lite.

Record still images

1. Short-press the [FRZ/REC] button while the live screen is displayed to freeze the image.
2. Long-press the [FRZ/REC] button while the freeze screen is displayed to save the image in the folder.

Record movies

1. While the live image is displayed, long-press the [FRZ/REC] button.
2. After a still image is recorded, a movie recording confirmation dialog appears.
3. Selecting "Yes" on the LCD monitor to start movie recording.
4. To end movie recording, long-press the [FRZ/REC] button.

Playing back the recorded image

View screen

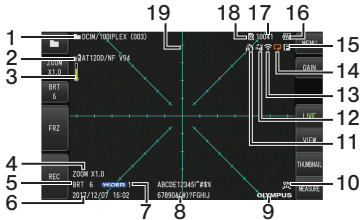
1. Short-press the [VIEW] button to display the newly recorded image.
2. Operate the [MEAS/OK] joystick to switch between images.

Thumbnail screen

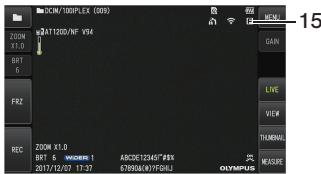
1. Long-press the [VIEW] button to display the thumbnail screen.
2. Operate the [MEAS/OK] joystick to select an image and press the [MEAS/OK] joystick to display the View screen.

LCD monitor nomenclature

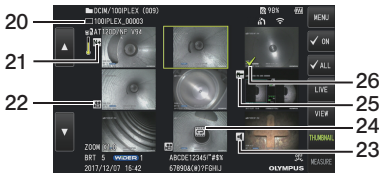
Live screen



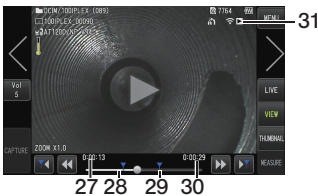
Freeze screen



Thumbnail screen



View screen



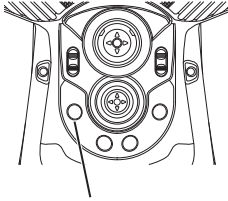
No.	Icon/ Indicator	Name
1	-	Folder name
2	-	Optical adapter name
3		Distal end temperature indicator
4	-	Zoom level
5	-	Brightness level
6	-	Date/Time
7		Gain mode icon

No.	Icon/ Indicator	Name
8	-	Title
9	-	Logo
10		LED icon
11		Angle lock icon
12		Angle centering icon
13		Wireless LAN icon
14		Constant video recording icon
		Movie recording in progress icon
		Sound recording in progress icon
15		Freeze icon
16		Battery indicator
17	-	Number of recordable images
18		SD card icon
19	-	Grid
20	-	File name
21		Note icon
22		Movie icon
23		Sound icon
24		Constant video icon
25		Measurement icon
26		Check-mark icon
27	-	Movie playback time
28	-	Movie playback position bar
29	-	Index mark
30	-	Total movie duration
31		Play movie icon
		Pause movie icon
		End movie playback icon
		Playing back sound icon

Menu screen display

Press the [MENU] button to display the menu screen.

*For the IPLEX G Lite-W, the “optical adapter selection” icon will not appear.



[MENU] button


























Using the live screen/freeze screens

TIP







GL ST : Functions usable with IPLEX G Lite (stereo measurement)

Main menu	Sub menu	Item
TITLE 	-	Inputs a title. Puts a title on the live screen and recorded images. Up to 30 characters can be inputted.
WHITE BALANCE 	-	Adjusts the white balance (Live screen only). Specifies whether to adjust the white balance or not. <ul style="list-style-type: none"> • CANCEL : Do not adjust. • EXECUTE : Adjust. When replacing parts like the optical adapter, adjust the white balance by capturing an image of a white object, such as a piece of paper, from a distance of 50 to 60 mm.
IMAGE MODE 	IMAGE INVERSION 	Flips the image. LCD and HDMI output images can be flipped. The options available are OFF, HORIZONTALLY REVERSE, VERTICALLY REVERSE and ROTATE. This option cannot be used for the freeze screen.
	DYNAMIC NOISE REDUCTION 	For specifying settings on Dynamic Noise Reduction. You can specify whether to enable or disable Dynamic Noise Reduction. <ul style="list-style-type: none"> • OFF : Disable • ON : Enable This option cannot be used for the freeze screen.
STEREO IMAGE DISPLAY GL ST 		Selects the screen in monocular view or binocular view. Sets the live image whether to display in monocular view or binocular view when the stereo optical adapter is attached. <ul style="list-style-type: none"> • MONOCULAR IMAGE : Displays the image in monocular view (one screen) • BINOCULAR IMAGE : Displays the image in binocular view (two screens) This option cannot be used for the freeze screen.
	IMAGE DISPLAY MODE 	For selecting a forward view or side view display. For specifying the display mode when the AT100D/100S-IV76 optical adapter is used. <ul style="list-style-type: none"> • DUAL VIEW : Displays both forward and side views. • FORWARD VIEW : Displays only the forward view. • SIDE VIEW : Displays only the side view. This option cannot be used for the freeze screen.



Main menu	Sub menu	Item
IMAGE MODE 	GRID 	Displays the grid on the screen. The grid display can be selected from OFF or three grid types. The grid is displayed on the live screen.
RECORD MODE 	FILE NAME MARK 	Automatically adds a file mark to the end of the file name of the recorded image. <ul style="list-style-type: none"> • OFF : The mark is not attached. • ON : The mark is attached. You can select the marking to be added when recording the image. The markings can be selected from "None, _A, _B, _C and _D".
	SD FORMAT 	Formats (initializes) the SDHC card. <ul style="list-style-type: none"> • CANCEL : Does not perform formatting. • EXECUTE : Executes formatting.
	microSD FORMAT 	Formats (initializes) the microSDHC card. <ul style="list-style-type: none"> • CANCEL : Does not perform formatting. • EXECUTE : Executes formatting.
	MOVIE FRAME RATE 	For selecting the frame rate for movie recording. <ul style="list-style-type: none"> • 30 Frames/Sec • 60 Frames/Sec
	STILL AUDIO 	For specifying settings on sound recording. You can specify whether to perform sound recording during still image or movie recording. A headset is required for sound recording. <ul style="list-style-type: none"> • OFF : Disable • ON : Enable
	CONSTANT VIDEO 	For specifying setting on constant video recording. You can specify whether to perform constant video recording while the live screen is displayed. <ul style="list-style-type: none"> • OFF : Disable • ON : Enable
REC FUNCTION 	For specifying the type of image to record using the [FRZ/REC] button. You can specify the type of image to record when using the [FRZ/REC] button to perform recording. The unit functions as follows when you press and hold down the [FRZ/REC] button. <ul style="list-style-type: none"> • STILL+MOVIE : Live mode: Records both still images and movies Freeze mode: Records only still images • STILL ONLY : Live mode: Records only still images Freeze mode: Records only still images 	

Main menu	Sub menu	Item
SYSTEM SETUP 	DISPLAY 	For selecting the information to display on the screen. You can select whether to display the zoom, brightness, date/time, title, logo and optical adapter options.
	DATE TIME 	Specifies date and time. Specifies date and time.
	LANGUAGE 	Specifies the display language. Selects the language used for menus and messages. English and other languages are supported. The default setting is "English".
	VERSION 	Displays the version information. Displays the software program version of the main unit, initial data version and the grade information of the main unit.
	START UP 	Saves the settings that are currently being applied. <ul style="list-style-type: none"> • OFF : Restores the initial settings at the next startup • ON : Applies the settings at the power off state at the next startup This can be used to set the brightness level, zoom ratio, gain mode and light.
	BUTTON LIGHT 	For setting the button light. For specifying whether to light up the button during operation. <ul style="list-style-type: none"> • OFF : Light off • ON : Light on
	LIGHT 	Turn on the light of the insertion tube. You can specify a setting for the light. The options available are OFF, ECO and ON.
WIRELESS MODE 	CONNECT 	For setting wireless communication. <ul style="list-style-type: none"> • OFF : Disable • ON : Enable
	DEFAULT 	Initializes the wireless settings. <ul style="list-style-type: none"> • CANCEL : Does not execute formatting. • EXECUTE : Executes formatting.
PLAY CONSTANT VIDEO 	-	Plays back the constant video. Playback starts automatically if there are recorded constant videos.
SELECT OPTICAL ADAPTER 	-	Displays the optical adapter list. Select an optical adapter from the list that is to be connected to the system. This option cannot be used for the freeze screen.

Using the thumbnail screen

Menu	Available settings
<p>DELETE</p> 	<p>Deletes the recorded image.</p> <ul style="list-style-type: none"> • CANCEL : Do not delete image. • EXECUTE : Delete image. <p>Deletes the images selected on the thumbnail screen or images with the mark (✓).</p>
<p>MOVE FILE</p> 	<p>Moves image files from one folder to another.</p> <p>Recorded images can be moved to a different folder.</p> <p>The currently selected image or all images that are marked (✓) on the thumbnail screen are moved.</p>
<p>RENAME FILE</p> 	<p>Changes the image file name.</p> <p>You can change the name of a recorded image file (within 30 letters).</p>
<p>CHANGE FOLDER</p> 	<p>Switches the folder for image recording or playback.</p> <p>You can switch a folder for image recording and playback. The initial setting is set to "DCIMO100IPLEX".</p> <p>You can switch to the folder displayed on the menu screen. For operations on switching to a folder that is not displayed on the menu screen, see the instruction manual of IPLEX G Lite.</p>
<p>MAKE FOLDER</p> 	<p>Creates a new folder for image recording and playback.</p> <p>You can create a folder for image recording and playback. Up to 1,000 folders can be created in each folder.</p>
<p>RENAME FOLDER</p> 	<p>Renames a folder for image recording and playback.</p> <p>You can rename a folder for image recording and playback.</p>

Using the view screen

Menu	Available settings
DELETE 	Deletes the recorded image. <ul style="list-style-type: none">• CANCEL : Do not delete image.• EXECUTE : Delete image. Deletes the image displayed on the view screen.
NOTE 	Inputs the note information (TEXT/MARK/FREE DRAWING) to the desired position on the screen (view screen for still image only). You can input note information (TEXT/MARK/FREE DRAWING) on the still image that is being played back.

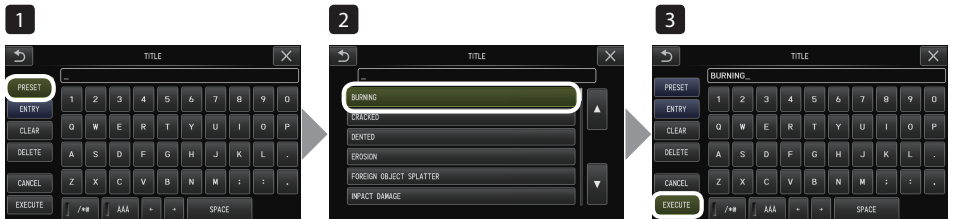
Inputting a title

Input using the software keyboard



- 1 Select the input mode.
- 2 Select the text buttons you want.
- 3 Select [EXECUTE].

Select a preset title for input

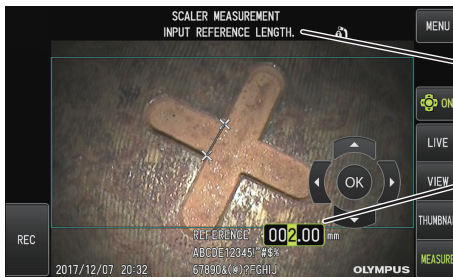


- 1 Select [PRESET].
- 2 Select the strings from the preset title list.
- 3 Select [EXECUTE].

Making scaler measurements

Scaler measurement measures the length of an object using the reference length value that is preset according to a known length inside the observation image.

- 1** Attach an optical adapter and select the optical adapter using the menu operations. Check the instruction manual of IPLEX G Lite for an optical adapter that can be used.
- 2** Press the [MEAS/OK] joystick to start the scaler measurement when the target to be measured is displayed.
- 3** Follow the instructions in the message box and perform the following operations to obtain the measurement values.
 - ① Configure the reference points
Move the cursor to the 2 points at both ends of the area of a known length and press the [MEAS/OK] joystick.
 - ② Enter the reference length
Enter the known length using the up/down/left/right operations of the [MEAS/OK] joystick.
 - ③ Specify the measuring points
Move the cursor to the 2 points at both ends of the area to be measured and press the [MEAS/OK] joystick.



Message box

Displays information related to operation.

Reference length

For entering the dimensions of the parts where the length measurement is known.

CURSOR/OK button

Operate the cursor and enter the reference length on the screen.

Point

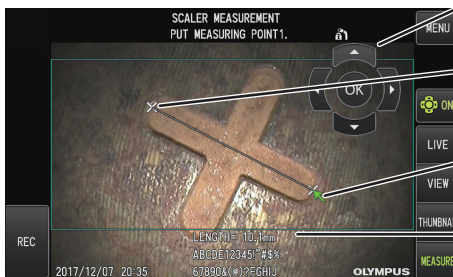
Reference point or measuring point that has been entered.

Cursor

For specifying the reference point or measuring point.

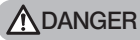
Measured value

Displays the measurement for the entered points.



Marks used in this manual

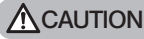
The following symbols are used in this manual.



DANGER : Indicates an imminently hazardous situation which, if not avoided, will result in death, serious injury or damage of observation object.



WARNING : Indicates a potentially hazardous situation which, if not avoided, could result in death, serious injury or damage of observation object.



CAUTION : Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices or potential material damage.

NOTICE or



NOTE : Indicates a potential situation which, if not avoided, may result in failure of this instrument.



TIP : Indicates additional helpful information.

Safety precautions

General safety precautions

Comply strictly with the precautions described below when handling this instrument. The safety cannot be ensured when the instrument is used in ways that are not specifically described.



DANGER

- **Never use the instrument for observing inside of the human or animal cavity.**
Otherwise, death or the serious injury of the person or animal may result.
- **Never use the instrument in the following environments.**
 - Where flammable atmospheres are present
 - Where metal dust or other dust is presentOtherwise, an explosion or fire may result.



WARNING

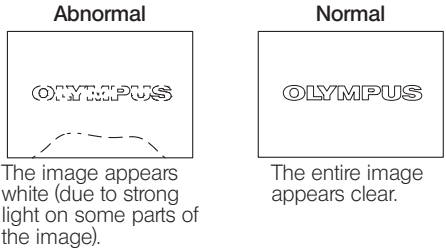
- **Do not repair, disassemble or remodel the instrument.**
Never repair, disassemble or remodel the instrument. Otherwise, the injury of human bodies or the damage of the instrument may result. Only personnel who are authorized by Evident are allowed to repair the instrument. Evident is not liable for any accidents or instrument damage that occurs as a result of repairs attempted by personnel who are not authorized by Evident.
- **Stop using the instrument immediately at the first sign of heat, smoke, abnormal odor, abnormal noise or any other abnormality.**
Even if the instrument is still operable, turn OFF the power.
- **Do not insert the insertion tube into an inspection object that is in operation or conducting electricity.**
Otherwise, the insertion tube may be damaged by being caught inside of the inspection object, etc., or the insertion tube may touch the object, which results in electric shock.
- **Before storing the instrument in its carrying case, be sure to turn OFF the power and remove the battery.**
Leaving the battery loaded during storage causes it to be hot, which may cause fire.
- **The gas tube must not be used for grounding.**
Otherwise, it may cause an explosion.

CAUTION

- **Do not use the instrument in any environment (including strongly radioactive environments) other than the specified operating environment.**
Otherwise, unexpected accidents that may damage the insertion tube may result.
- **Note the following precautions when moving this unit to or using it at an elevated location.**
 - Conduct a prior inspection
 - Take measures to prevent the unit from falling off
 - Implement thorough safety measures
- **Pay careful attention to the temperature of the distal end and the insertion tube right after using this instrument in high temperature environments as the temperature does not cool down immediately.**
Otherwise, you may get burned.
- **Do not grip the control for a prolonged period of time when using the unit under a high temperature.**
Otherwise, it may cause low-temperature burns. Take precautionary measures such as wearing protective gloves to prevent low-temperature burns.
- **Pay attention not to trip over the power cord or cables of the insertion tube.**
- **Do not use commercially-sold electronic transformers for overseas travel use (travel converters).**
- **Use only the power cord and the AC adapter specified by Evident and connect the power cord to the power outlet within the rated range.**
Otherwise, smoke, fire, or electric shock may occur.
- **Do not use the power cord specified for this instrument for other products.**
- **Do not use the AC adapter outdoors.**
Otherwise, electric shock, smoke or fire may occur, which may cause damage to the instrument.
The AC adapter is designed for indoor use.
- **Do not apply a strong impact to the AC adapter by hitting it against the wall or dropping it to the floor, etc.**
Otherwise, the malfunction or damage may be caused and result in electric shock.
- **If you sense any abnormality while inserting the insertion tube into the inspection object, do not attempt to insert it forcibly any more but carefully pull out the insertion tube.**
Note the following when pulling out the insertion tube.
 - Do not pull out the insertion tube from the inspection object while the angulation is locked or while the angulation section is bent.
 - If the insertion tube is caught on something during pulling it out, rotate the insertion tube gently while continuing to pull out.
- **Note the following precautions when handling the distal end of the insertion tube.**
 - Do not drop the optical adapter or subject it to strong impact.
 - Do not subject the distal end to severe impact or pulling.
 - Do not subject the angulation section to strong pressure or bending.
 - Do not move by holding the distal end of the insertion tube.
 - Do not use this instrument if the O-ring of the distal end of the insertion tube is damaged or torn.Otherwise, the glass lenses and the precision components which constitute the distal end and the angulation section may be damaged.
 - Do not tilt or strongly scratch the distal end of the insertion tube against the retention hole for the distal end of the insertion tube when inserting or removing the distal end.Otherwise, the angulation section may be damaged.
- **Always attach the optical adapter before using this instrument.**
If you use the instrument without attaching the optical adapter to the insertion tube, parts (screws, etc.) are easily deformed due to contact with hard objects, etc. If the insertion tube parts are deformed, the optical adapter cannot be attached or may fall off.
- **Never use the optical adapter if any of its parts are loose.**
Otherwise, the loose parts may fall off.
- **If the optical adapter cannot be attached or removed because the nut does not rotate, stop using it.**
Contact Evident.




- **If abnormality is found in the observation image, stop using immediately and pull out the insertion tube from the inspection object carefully.**

If the optical adapter is about to fall off from the distal end of the insertion tube while it is being inserted into the inspection object, the entire or a part of the observation image will appear whitish due to light of the illumination, or a part of the view may be lost. Continued use in this condition may cause the optical adapter to fall off from the distal end of the insertion tube. In this case, pull out the insertion tube carefully from the inspection object and attach the optical adapter firmly again according to "Attaching the optical adapter" (page 2).



- **If you sense any abnormality while performing the angulation operation, do not attempt to force the angulation operation.**
Otherwise, the insertion tube or the inspection object may be damaged.
- **When hanging this unit from your neck using the shoulder strap, do not allow it to be caught on other objects.**
Be careful so that it does not strangle your neck.
- **Do not allow metal or other foreign objects to enter the main unit through connector terminals or any other openings.**
Otherwise, the malfunction or electric shock may result.
- **Do not use the parts other than the insertion tube underwater or clean them under running water.**
Otherwise, water creates the risk of electric shock. Other than the insertion tube, the unit is waterproof when the DC-IN terminal cap, and the doors of the battery compartment and other interfaces are tightly closed. Do not use or store the instrument in an environment where it is submerged in water.
- **Do not subject the LCD monitor to strong impact, strong pressure or to scratching by a hard or pointed object.**
Otherwise, the LCD monitor may be cracked or scratched, or the damaged monitor may cause personal injury.
- **Use SDHC card and microSDHC card recommended by Evident to record images.**
This instrument comes with an SDHC card.
- **Do not remove the battery or the AC adapter during operation.**
Otherwise, the recorded data may be damaged.
- **Do not remove the SDHC card or the microSDHC card while recording or replaying the image.**
Otherwise, the recorded data or the image recording media may be damaged or lost.
- **Do not repeat inserting or removing the SDHC card or the microSDHC card continuously.**
Otherwise, the recorded data or the image recording media may be damaged or may not function properly.

CAUTION

- **Note the following precautions when the illumination is turned ON.**
 - Do not leave the distal end of the insertion tube near the flammable substances for a long time.
 - The light goes off during replacement of the optical adapter.
 - Do not stare at the light emitted from the distal end.
 - When using a UV LED unit or IR LED unit, check that the LED icon (  ) lights up on the live screen or other screens.
 - When used in combination with the LED guide tube, please read through "Safety Precautions - Precautions Concerning the Illumination" in the instruction manual of the LED guide tube to ensure its proper use.
 - Use the equipment in accordance with the regulations for Workers Health and Safety, if any.

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- RISK GROUP2
 - **CAUTION** : Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to the eyes.
 - **NOTICE** : UV emitted from this Product. Minimize exposure to eyes or skin. Use appropriate shielding.
 - **NOTICE** : IR emitted from this Product. Use appropriate shielding or eye protection.

- **Do not store the instrument in the following locations.**
 - Environments exposed to high temperature, high humidity and large amounts of dust or particulate
 - Locations exposed to direct sunlight or radiation
 - Locations exposed to gas that includes halide^{*1}Otherwise, the instrument may be damaged.
***1 The performance of some electrical parts may deteriorate due to the halide in insecticides, pesticides and gaseous extinguishing agents, etc.**
 - **Do not continue to use the instrument when it is wet with condensation.**

In case of a sudden temperature change, such as entering a warm room from cold outside, condensation may be caused inside the instrument. Using the instrument while it is wet with condensation may cause malfunction. If condensation occurs, leave the instrument in the environment where it will be used and allow the condensation to dry before using it.
 - **Do not insert the insertion tube into the inspection object which is in an environment that exceeds the operating temperature range.**

The continued use may damage or deteriorate the performance of the instrument.
 - **Do not use the instrument if the contaminants are attached to the outer surface of the instrument.**

The instrument may be damaged or the performance may be deteriorated.
 - **Do not cover the main unit with a plastic bag or other objects.**

The inside of the instrument may not be cooled down sufficiently, which may damage the instrument.
 - **Do not allow any liquids other than water, saltwater, machine oil or diesel oil to be attached to the insertion tube.**

Otherwise, the insertion tube may be damaged.
 - **Note the following precautions when handling the battery compartment door and interface doors.**
 - Do not open or close the doors when there is water on the surrounding surfaces
 - Do not open or close covers with your wet hands.
 - Do not open or close covers in the area exposed to high humidity and/or dust.
 - Close covers when storing the instrument and when the terminals are not in use.
 - **Note the following precautions with regard to the terminals on this unit and those on the LED unit.**
 - Do not touch the terminals directly with your hands
 - Prevent dirt and water droplets from coming in contact with the terminals.
 - **Note the following precautions when taking out the instrument from the carrying case.**
 - When taking out the main unit, do not hold it up with the insertion tube.The instrument may be damaged.
 - **Do not pull the insertion tube and other cables with force or carry them around.**
 - **Note the following precautions when storing the instrument in the carrying case.**
 - Make sure that the distal end has cooled down sufficiently before storing it.
 - Make sure that the insertion tube is not twisted before storing it.
 - **Do not lift the carrying case when the cover of the case is not closed.**
 - **When disposing of this product, be sure to do so in accordance with all local laws, rules and regulations.**

Before disposing of this product, check your local laws, rules and regulations, and follow them accordingly.
-

Battery precautions

If you experience any problems when using this instrument with batteries, contact Evident. Comply strictly with the precautions described below when handling the battery. If the batteries are handled improperly, the battery fluid leakage, excessive heat generation, smoke, battery burst, electric shock and/or burns may result.

DANGER

Before use, thoroughly read the instruction manual provided with the battery charger to fully understand the information contained in them, and observe their instructions during use.

- **Use the battery BLH-1 and charge the battery using this unit or the charger BCH-1.**
- **Do not use the battery charger outdoors.**
Otherwise, the electric shock, smoke or fire may occur, which may cause the damage to the charger.
The battery charger is designed for indoor use.
- **Do not subject the battery to strong impact.**
- **Do not allow terminals to be short circuited with metal objects.**
- **Do not throw the battery into fire or subject it to heat.**
- **Do not open or modify the battery.**

WARNING

- **Do not cover the battery charger with clothing, bedding or other materials while charging.**
- **After charging is complete, always be sure to unplug the AC power cord of the charger from the electrical outlet.**
- **If you sense any abnormality such as heat generation, abnormal odor, abnormal noise or smoke, disconnect the power plug of the battery charger immediately and stop using it.**
Contact Evident.
- **If the battery charger does not complete recharging the battery in the specified recharging time, stop attempting to recharge the battery.**
- **Do not allow the battery compartment to become deformed and never put any foreign object into it.**
- **Do not allow metal or water, or any other fluid to get into the battery compartment or onto the battery terminals.**
If any foreign object enters the main unit, remove the battery and disconnect the AC adapter, and immediately contact Evident.
- **Do not remove the battery immediately if the instrument was used continuously for a long time.**
The heat generated by the battery causes the risk of burn injury.
- **Do not touch the battery terminals with your wet hands.**
- **If you plan not to use the instrument for a long time, remove the battery from the main unit and store it in a dry place.**
Otherwise, the battery fluid may leak and the heat generation may result in a fire or injury.
- **Keep the battery out of the reach of small children.**
- **If liquid leaking from the battery comes into contact with your body, rinse it off immediately with clean water from the tap, etc. and seek medical attention if necessary.**

CAUTION

- **If you are experiencing problems in inserting the battery, do not attempt to insert it forcibly.**
Check the orientation of the battery and check the terminals for abnormalities. Attempting to insert the battery forcibly into the compartment may cause malfunction.
- **If you are experiencing problems removing the battery from the instrument, do not attempt to remove it forcibly.**
Contact Evident.
- **Contact the airlines in advance if you plan to transport the battery by aircraft.**
- **When replacing the battery, do not repeat inserting or removing it rapidly.**
Otherwise, the power may not be turned ON.
- **Do not store the battery in the following locations.**
 - Environments exposed to water, high temperature, high humidity, low humidity and dust
 - Locations exposed to direct sunlight or radiation
 - Locations exposed to gas containing halide^{*1}

^{*1} The performance of some electrical parts may deteriorate due to gas containing halide in insecticides, pesticides and gaseous extinguishing agents, etc.
- **Do not use, charge or store the battery in areas exposed to direct sunlight, in a closed automobile in the sun, or near a heater, etc.**
- **Do not use a battery if it shows any irregularity such as fluid leak, discoloration, deformation, abnormal odor or other abnormality.**
- **Do not immerse the battery in fresh water or sea water, or allow the battery to get wet.**
- **When disposing of a battery, be sure to do so in accordance with all local laws, rules, and regulations.**

NOTE

- The contamination of battery electrodes with sweat or oil will cause the contact failure. If the battery is dirty, wipe it with a dry cloth before use.
- Use the battery correctly. If the battery is used incorrectly, battery fluid leakage, heat generation or damage may result. Insert the battery in the correct orientation when replacing it.
- Temperature range for Li-ion battery operation
 - Discharge (when using this unit): -10 °C to 40 °C
 - Charging : 0 °C to 40 °C
 - Storage : -10 °C to 45 °C (Recommended: 20 °C)

Using the battery under a temperature exceeding the temperature ranges described above will result in degradation of its performance and service life. Before storing the instrument, be sure to remove the battery from the main unit.

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