

SeaLife® DC2000™



Instruction Manual



Visit www.sealife-cameras.com/manuals
for **ENGLISH, FRANÇAIS, DEUTSCH, ITALIANO, ESPAÑOL** and
NEDERLANDS versions

About this Manual

- Product design, specifications and this manual are subject to change without notice. This User Manual is a general reference guide for the product.
- The illustrations in this manual are for the purpose of explanation and may differ from the actual screenshots and design of your camera.
- SeaLife and its affiliates assumes no liability for any errors or discrepancies in this user manual.

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FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION:

Any changes or modifications not expressly approved by the agency responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

RF exposure warning

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated in accordance with provided instructions and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance. FCC: SAR standard Value: 1.6 W/Kg, Maximal Measure: 0.4 W/kg

CE Mark Warning

This is a Class B product, in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Safety and Handling Precautions

- Do not take apart or attempt to service the camera yourself. Contact your local authorized SeaLife dealer if the camera becomes damaged and requires service.
- Do not expose the camera to extreme temperatures or direct sunlight for extended periods of time.
- Allow the camera to warm up when moving from cold to warm temperatures.
- Avoid sand granules from entering the speaker and microphone holes of the inner camera. Used pressured air can to clean out holes, if necessary.
- Make sure you and the camera are perfectly dry before opening or closing the battery door of inner camera
- Do not use abrasives, chemicals, cleaning solvents or detergents to clean the camera. Wipe the camera with a slightly damp soft cloth.
- Do not use the flash or LED Light near a person's eyes to prevent possible eye injury.
- While the camera is shock protected to 5 feet / 1.5 meters, avoid dropping the camera or exposing to shock.
- Do not use the camera in hot water exceeding 110°F temperature.

Battery Information

- Turn off the camera before removing the battery.
- Use only the provided battery or type of battery and wall charger included with your camera. Using other types of batteries or chargers may cause risk of explosion, damage the device and void the warranty.
- Inserting the battery upside down can cause damage to the camera and battery.
- When the camera is used for an extended period of time, it is normal for it to feel warm.
- Download all pictures and remove the battery from the camera if you are going to store the camera for a long period of time.
- Replace battery if it becomes wet, deformed or discolored.
- Extremely cold environments will shorten the battery life.
- When you are using a new battery or if the battery has not been used for an extended period of time, we recommend that you fully charge and discharge the battery once to maximize battery life.
- Always keep the battery contacts clean. Clean with pencil eraser.
- Dispose of used battery according to your local recycling laws.
- To prevent short-circuiting or fire, keep the battery away from other metal objects when carrying or storing.

USB cable and wall charger Information

- USB cable and wall charger are not waterproof. Do not expose them to high temperatures or moisture. Otherwise, it may cause short circuit, electric shock, risk of explosion and damage the camera.
- Only use the USB cable and wall charger included with the camera.
- Do not touch the plug with wet hands. Otherwise, it may cause electric shock.

Important information about using the inner camera underwater

- Read and understand the instructions contained in this manual before using underwater.
- The inner camera (without the UW housing) is designed and tested to withstand underwater depths down to 60feet/18meters, which is suitable for watersports, snorkeling or shallow diving. For SCUBA diving, we highly recommend using the included underwater housing for maximum waterproofness and easy handling.
- Make sure the waterproof rubber seal inside the battery door of the inner camera is perfectly clean and free of hair, sand or debris before closing door.
- Inspect battery door and rubber seal and surrounding area are free of any cracks, cuts or damages. If damaged, contacted your local authorized SeaLife dealer for service.
- Properly close the battery door until your hear a click sound indicating the door is fully closed. Engage battery door lock to prevent accidental opening.
- Regularly clean the inner camera with a moistened soft cloth and allow it to dry before storage.
- Warning - the inner camera IS NOT certified to be intrinsically safe. Using the camera in an environment containing combustible gases may result in explosion or fire.

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Introduction

Thank you for purchasing the SeaLife DC2000 digital underwater camera. This is not your ordinary digital camera in a waterproof housing. The inner camera is waterproof by itself and includes underwater modes with onboard color-correction and exposure programs to ensure sharp, colorful pictures and video underwater or on land. The camera is equipped with the latest digital technology for fast response and easy control.

The SeaLife waterproof housing is constructed from the finest materials to ensure long-lasting and reliable performance. Its fully rubber armored body offers superior shock protection. The durable polycarbonate underbody can withstand underwater pressure down to 200ft/60m. It's large shutter button and wide-spread controls ensures a sure-grip and easy handling, even with dive gloves on. All metallic parts are made of high-grade stainless steel to survive the punishing saltwater and marine environment.

The DC2000 is easily expandable with SeaLife Sea Dragon UW Lighting and wide angle lenses. The Sea Dragon external flash or photo-video light will add vibrant colors and brightness to your underwater pictures and video. The seemingly dark and colorless underwater world is actually bursting with magical, vibrant colors - you [and your camera] just need a light to see it. You will be amazed at the great underwater pictures you can take with the addition of the Sea Dragon Flash or photo-video lights. Please visit your local dive shop or www.sealife-cameras.com for more information about the SeaLife underwater lighting.

There are so many more features and benefits that you will surely enjoy. All of us at SeaLife hope to exceed your expectations with this new camera.

Happy diving!



DC2000 Underwater Housing and waterproof Inner Camera (SL740)



DC2000 Pro Flash Set (SL745)



DC2000 Pro Light Set (SL747)



DC2000 Pro Duo Set (SL749)

System Requirements

Your computer must meet the following system requirements in order to connect to the camera:

For Windows:

- Windows XP/Vista/Win7/Win8/Win10 and up
- Processor: Intel Pentium D 3.0GHz or equivalent AMD Athlon, or faster
- RAM: 2 GB or more
- Available memory: 300MB and up
- 32bit color display monitor
- Microsoft DirectX 9.0C

USB port

For Macintosh:

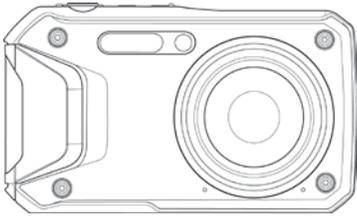
- Mac OS 10.4 and up
- Memory: 1 GB or more
- Quick Time player ver. 6.0.3 and up
- USB port

Inner Camera Performance Features

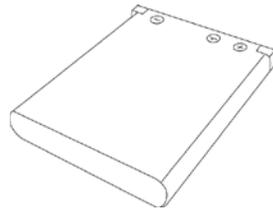
- 20 mega pixels image resolution
- 1080p Full HD video recording with stereo audio
- JPEG or RAW (.dng) image format
- Auto focus from 3.5" (9cm) to infinity
- 3" 920K high resolution color LCD monitor
- 1130 mAh, 3.7V lithium rechargeable battery
- WiFi to wirelessly preview, download and share pictures and videos
- 80MB internal flash memory
- Removable memory card: Compatible with Micro SD/SDHC/SDXC/UHS-1 cards up to 64GB
- DCF, DPOF, PictBridge compatibility
- USB port to transfer images and videos to your PC
- Full manual or automatic exposure control

Package Contents

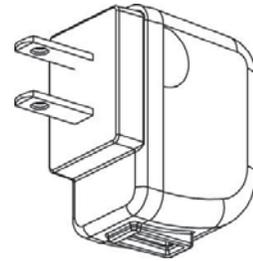
Please check the contents of your camera package. It should contain:



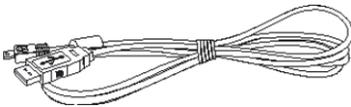
Digital camera



Rechargeable Battery



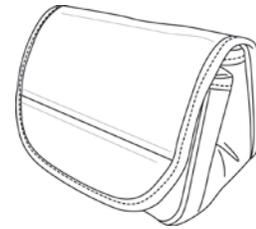
USB wall charger (with 4 Int'l plug adapters for US, EU, UK and AU)



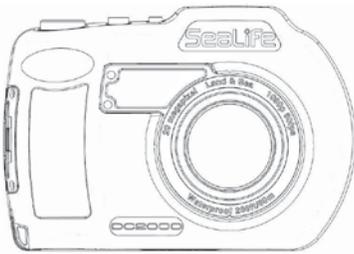
USB cable



Wrist strap
(for inner camera)



Camera pouch



Underwater housing



Wrist strap
(for UW housing)

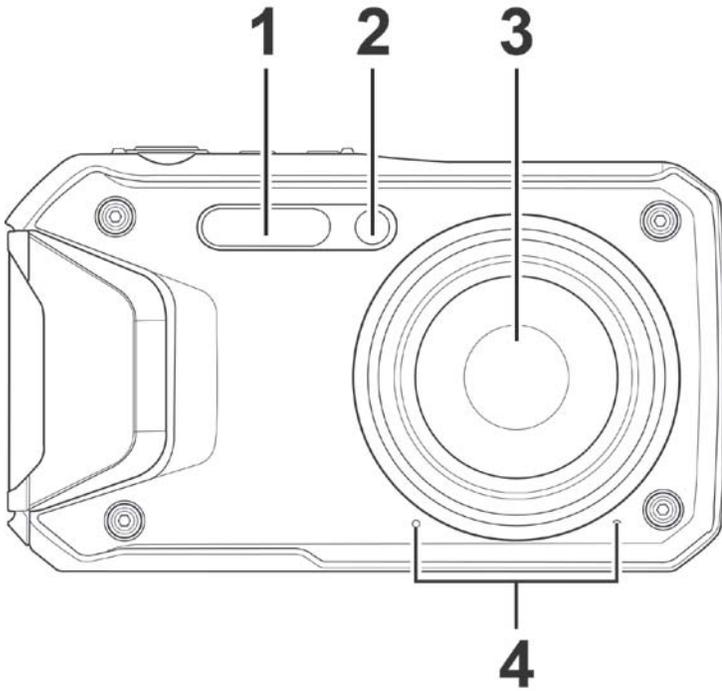


Flash Link Adapter
(for connecting optical cable to external flash accessory)

Note: If you purchased one of the DC2000 camera sets, which includes a Sea Dragon Ext Flash and/or photo-video light, additional items will be included in the package. Please refer to instruction manual included with the UW lighting accessories for more details about package contents.

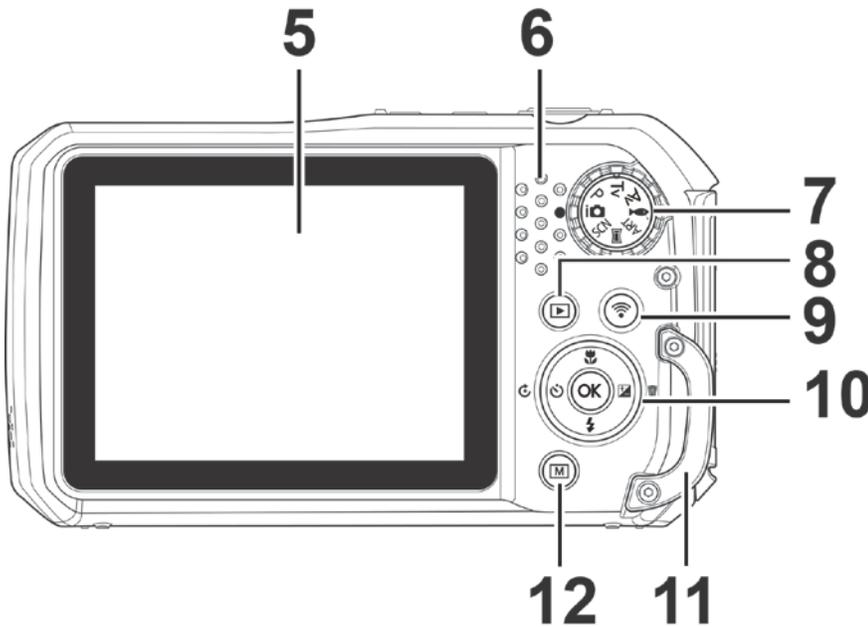
Getting to know your camera

Front view



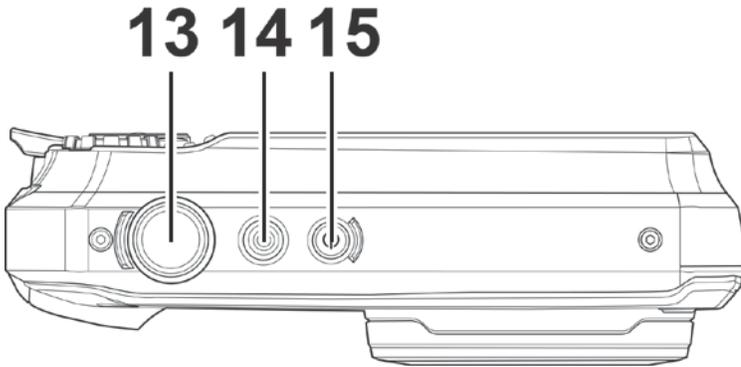
- 1 - Flash
- 2 - Self-timer LED / AF Assist Lamp
- 3 - Lens
- 4 - Microphones

Back view



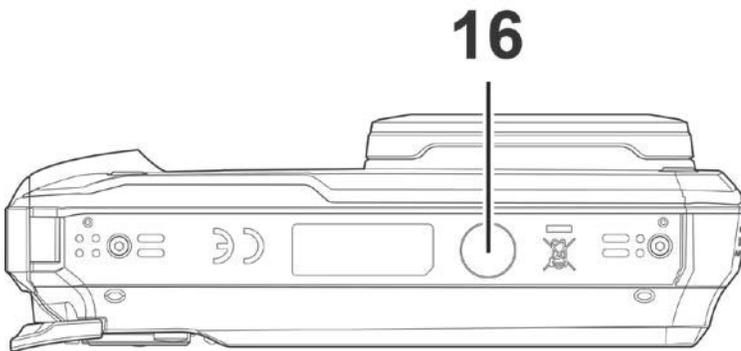
- 5 - LCD monitor
- 6 - LED indicator light
- 7 - Mode dial
- 8 - Playback button
- 9 - Wireless Auto Send button
- 10 - OK button / 4-way navigation control
- 11 - Strap connector
- 12 - Menu button

Top view



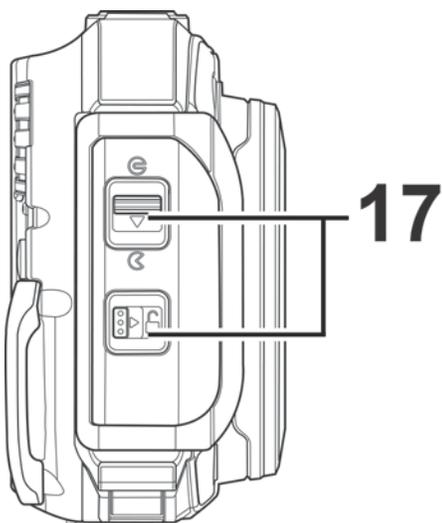
- 13 - Shutter button
- 14 - Video start/stop button
- 15 - Power button

Bottom view

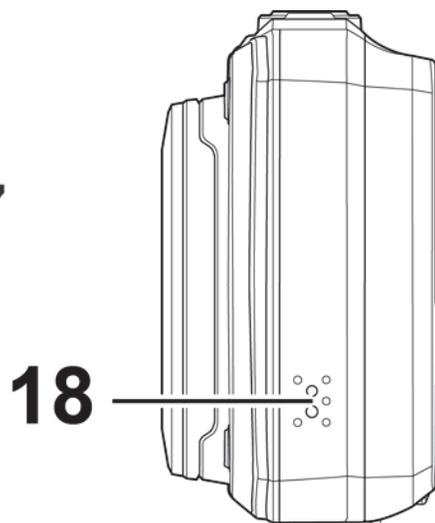


- 16 - Tripod screw hole

Right side view



Left side view



- 17 - Latch and lock for waterproof door (Access to battery, memory card and USB out).

- 18 - Speaker

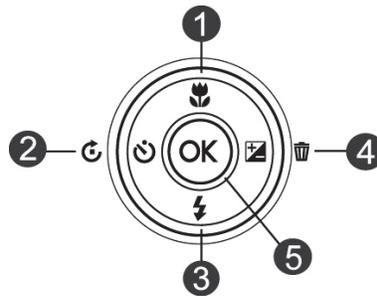
Camera Buttons

Here is a brief description for each of the 8 push buttons

Button	Description
Power	Push the Power button to turn the power on/off.
Shutter	Push to capture an image (half-push to set and lock focus).
Menu	Push to enter or exit menu/submenu.
Mode dial	There are 8 recording modes can be set. Once turning the mode dial, it enters the selected mode immediately even in Playback mode or during movie recording.
Playback	Push to enable Playback mode or return Record mode.
Movie	Push to start/stop recording video.
Wireless	Push to enter Auto Send Menu and Quick Send Navigation. Using the Wireless function" on page 77 for more details.
OK	Push to confirm menu selection.

Navigation Control

The **4-way Navigation Control** and the **OK** button allow you to access the various menus available from the On Screen Display (OSD).



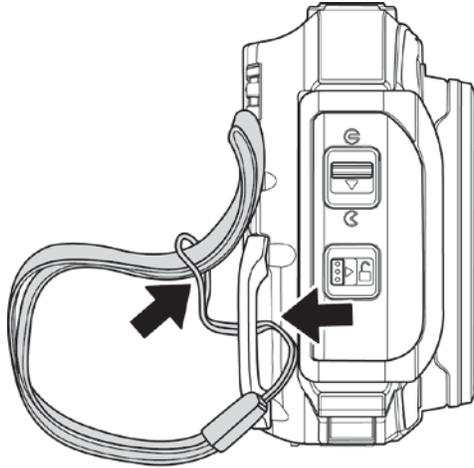
No.	Description
1	Focus / Up button
2	Self-timer / Left button (Rotate button in Playback)
3	Flash / Down button
4	EV / Right button (Delete button in Playback)
5	OK Button

Button	Description
OK	<ol style="list-style-type: none"> 1. In Menu, push to confirm a selection. 2. In Playback, push to select playback view or start video. 3. In Record mode, push to access preset shortcut or launch a submenu for the specified shooting mode. Shortcut only available in Program and UW modes.
EV / Right / Delete	<ol style="list-style-type: none"> 1. In Record mode, push to change the EV settings. EV setting is not available in Intelligent Auto, Land Scene or Panorama modes. 2. In playback, push to delete an image, video or audio clip. 3. During video playback, push to Pause/Start video. 4. In Menu, push to navigate right or enter a submenu.
Self-timer/ Left / Rotate	<ol style="list-style-type: none"> 1. In Playback, each push rotates image clockwise 90 degrees. This feature is applicable for still images only. 2. In Record Mode, push to select Self-timer options: (Off, 10 sec., 2 sec. or Double [10sec + 2 sec.]) 3. During video playback, push to stop video. 4. In Menu, push to navigate left or exit a submenu.
Focus/Up/ AE/AF LOCK/	<ol style="list-style-type: none"> 1. In Record Mode [when zoom and AE/AF Lock are disabled], push to scroll through Focus options: (AF, Macro, Super Macro or Infinity). Locks/unlocks exposure and/or focus when AE/AF Lock is turned ON. 2. In Record Mode [when zoom is enabled], push to increase zoom 3. In Playback mode, push to view the previous image or video. 4. During video playback, push to fast forward video. 5. In Menu, push to navigate up.
Flash/Down	<ol style="list-style-type: none"> 1. In Record Mode [when zoom is disabled], push to scroll through the flash options: (Auto, Red-eye Reduction, Force On, Slow Sync and Force Off). 2. In Record Mode [when zoom is enabled], push to decrease zoom. 3. In Playback mode, push to view the next image or video. 4. During video playback, push to Rewind video. 5. In Menu, push to navigate down.

Getting Started

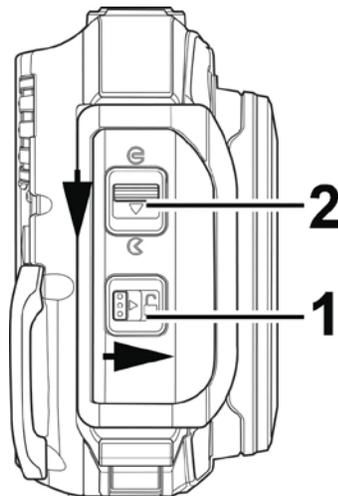
Attach the wrist strap to inner camera

Note: Remove wrist strap before inserting camera into underwater housing.

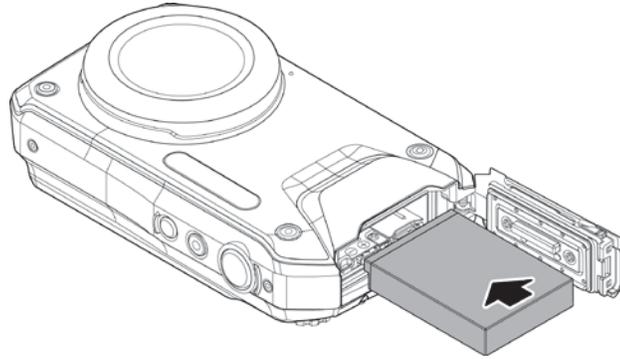


Inserting the Battery

1) Open the waterproof battery/memory card door by sliding the lock right (1) and latch down (2)

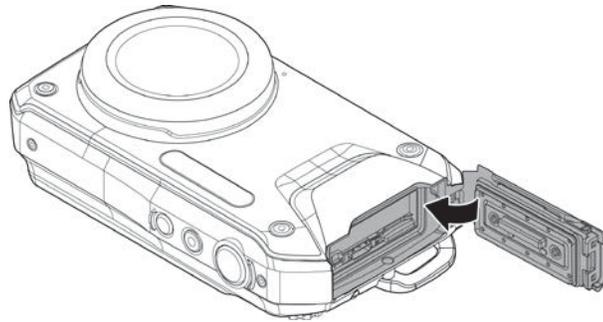


- 2) Insert the battery as shown with the 3 gold contacts oriented towards the top of the camera.
The small orange tab will lock battery into place if battery is oriented correctly.



- 3) Close the battery/memory card door as shown. Push down firmly until door locks.

Important: Make sure the rubber seal inside waterproof door is perfectly clean and undamaged.

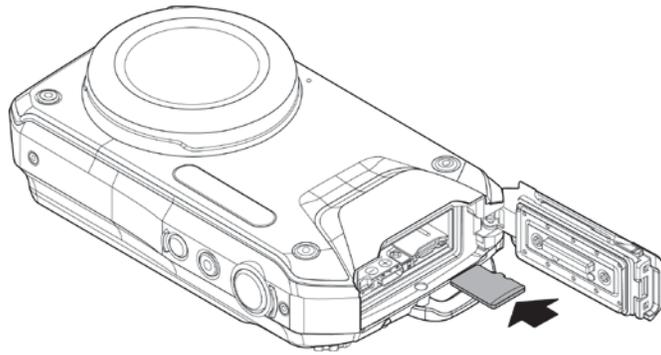


Inserting the Memory Card (card sold separately)

The camera supports Micro SD, Micro SDHC and Micro SDXC and Micro UHS-1 type memory cards up to 64GB with speed class 10 or U1. Using a memory card with speed class of 30 or U3 may cause compatibility issues and will not make the read/write speed any faster.

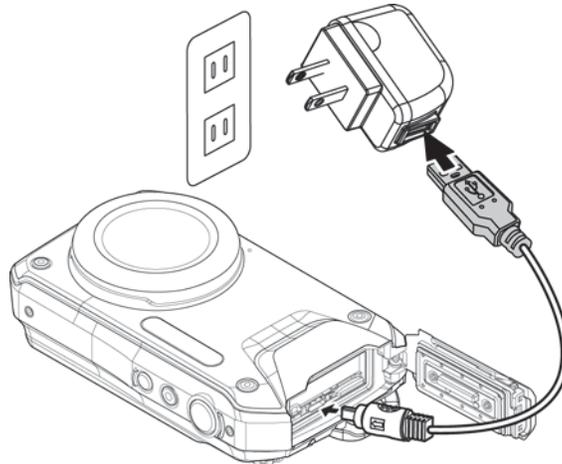
The icon  will appear on LCD display to indicate a memory card is installed. All pictures and videos are saved to the memory card when card is installed. The camera is equipped with 80MB of the internal memory used to store some pictures if there is no memory card installed. Video recording requires installing optional memory card. To ensure the memory card is working properly with your camera, we recommend taking the camera with you when purchasing the card.

Insert the memory card into the slot with the gold contacts facing the back of the camera. Push until card clicks into place. To remove the memory card, gently push the card and it will eject from the slot.



Charging the Battery

To charge the battery, connect camera to USB cable and other end of USB cable to the wall charger, as shown. It takes approximately 2.5 hours to fully charge an empty battery using the wall charger. The battery may also be charged by connecting camera to any 5V USB port, such as a computer USB port, however the charge time will be approximately 5 hours.



- The LED indicator on the back of the camera will begin flashing slowly when camera is charging and turns off when charging is complete.
- If the LED indicator does not flash when attempting to charge the battery, make sure the battery is properly installed and that the contacts are cleaned.
- If the LED indicator lights flashes rapidly, the battery may be damaged or useful life may have expired. Replace the battery in this case.

Power Camera On and Off

There are two ways to power on the camera:

- Push and hold the **Power button** until camera powers on. The camera will power on in Photo mode.
- Push and hold the **Playback button**, the camera will power on in Playback mode.
- To power OFF the camera, push the **Power button**.

Initial Settings

When powering on the camera for the first time, you will be asked to set your local language and the date/time:

Setting the Language

1. Use the 4-way navigation button (▲, ▼, ◀ or ▶) to select your preferred language.
2. Push **OK** to confirm your language selection.

Setting the Date & Time

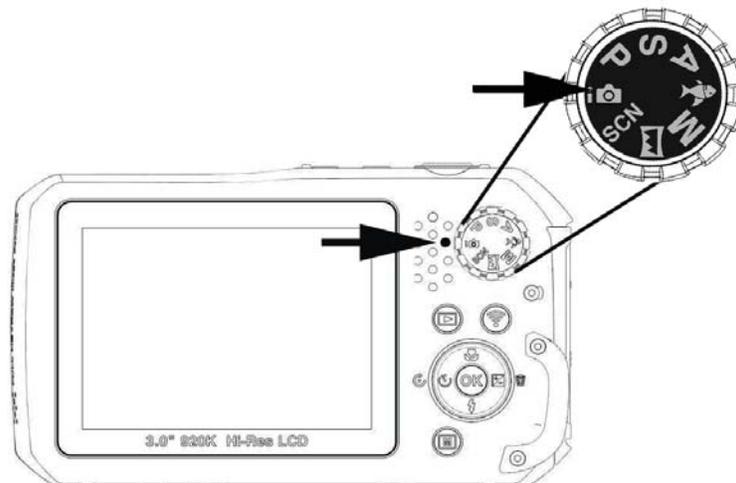
1. Push ◀ or ▶ to move through the selection.
2. Push ▲ or ▼ keys to change the value for the date and time.
3. Push **OK** to confirm your date/time selection.

Note: Pushing the Menu  button at any time will exit the language and date/time settings menu. Holding down ▲ or ▼ keys to change the values continuously.

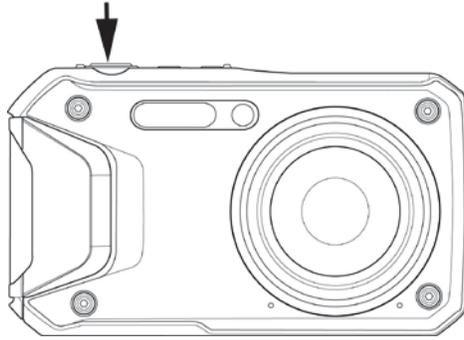
Taking a picture and recording a video clip

The camera is ready to take a picture or record video immediately after powering on the camera.

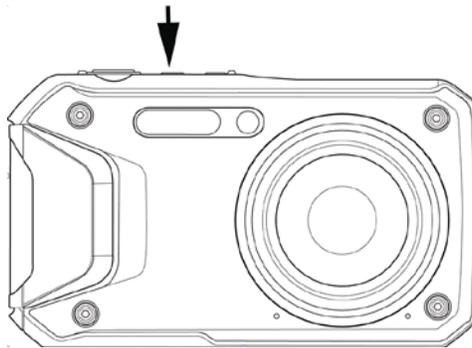
- 1) Before taking a picture or video [on land], **set the mode dial to Intelligent Auto**. More details about the mode dial and underwater modes are included later in this manual.



2) **Take a picture:** Push the shutter button down to take a picture.



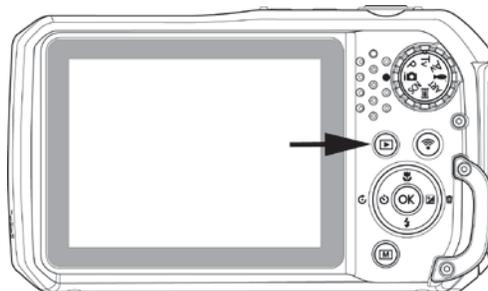
3) **Record a video:** Push the video button  down to start recording. Push video button again to stop recording.



Note: Pushing and holding the shutter button halfway will focus the camera on the subject. A green focus box indicates the camera has accurately focused on a subject. A red focus box indicates the camera has NOT accurately focused on a subject. This function is useful for checking that the camera has focused on a subject before shooting.

Playback pictures and video clips

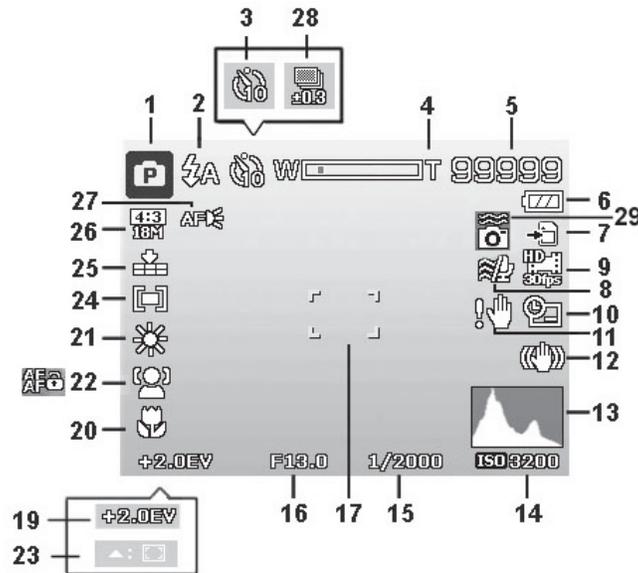
Push the **Playback button**  after the camera is turned on to view and edit captured images or playback videos. The recording of voice memo attached to images is available in this mode. Use the ▲ and ▼ keys to scroll through images. Please see page 63 for more details about Playback mode.



Using the LCD monitor

The LCD monitor shows important information about camera settings as well as a live preview for composing your pictures. The display on the LCD monitor is called the On Screen Display or OSD.

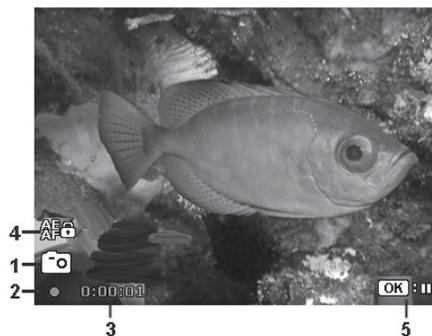
LCD Monitor Layout - Photo Mode Screen



No.	Item	Description
1	Shooting Mode	Indicates the current shooting mode.
2	Flash	Indicates flash setting.
3	Self-timer	Indicates Self-timer setting.
4	Zoom indicator	Displays zoom.
5	Shots remaining	Indicates the remaining shots available.
6	Battery	Indicates battery level.
7	Storage media	Indicates current storage media in use.
8	Wind Cut	Reduces wind noise during movie recording.
9	Movie size	Indicates video resolution.
10	Date stamp	Indicates date stamp is enabled.
11	Shake warning	Indicates the low light condition, which may cause the picture to be blurred. If the shake warning icon appears, it is recommended to enable the Flash or use a tripod to stabilize the camera.
12	Stabilizer	Indicates video stabilizer function is enabled.
13	Histogram	Graphic display of Brightness.
14	ISO	Displays ISO setting.
15	Shutter speed	Displays shutter speed setting.
16	Aperture value	Displays aperture setting.

No.	Item	Description
17	Focus area	Indicates focus area.
19	EV Compensation	Displays exposure compensation setting.
20	Focus mode	Indicates focus setting.
21	White balance	Displays white balance setting.
22	Face tracking or AE/AF Lock	Indicates face tracking or AE/AF Lock is enabled
23	Tracking AF	Indicates tracking AF is enabled.
24	Metering	Displays metering setting.
25	Quality	Displays quality setting.
26	Photo size	Displays photo size setting.
27	AF lamp	Indicates AF lamp is enabled.
28	Exposure bracketing	Displays Exposure bracketing setting.
29	Underwater indicator	Icon is displayed when inner camera is submerged underwater and underwater mode is not enabled.

LCD Monitor Layout – Video Recording Screen



No.	Item	Description
1	Picture-in-Video (PIV)	Indicates that you captured a picture while recording videos. The number displayed to the right of the icon indicates how many PIV images you captured during the video clip.
2	Recording status	Indicates recording status. A solid red dot indicates video recording is in progress. A pause icon is displayed if recording is paused.
3	Recorded time	Indicates recording time remaining in minutes:seconds (MM:SS). You can record up to 29 minutes of continuous recording for each video clip.
4	AE/AF Lock	Indicates auto exposure (AE) and/or auto focus (AF) is locked
5	Button indicator	Push OK button to pause/unpause recording.

LCD Monitor Layout – Playback Mode Screen

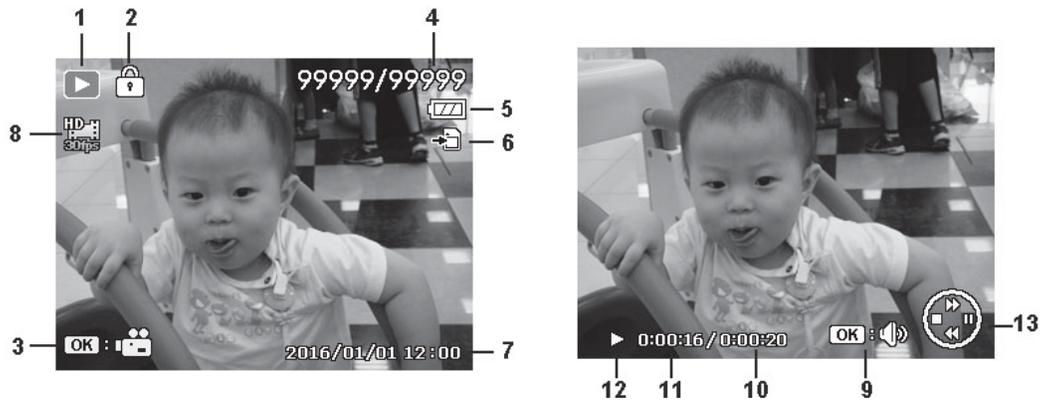
The Playback mode display varies depending on the type of image being viewed.

Playback mode display for still images:



No.	Item	Description
1	Playback mode	Indicates playback mode.
2	Protect	Indicates file is protected.
3	Button indicator	Displays the button info of Playback mode.
4	File no./ Total no.	Indicates the file number over the total number of files in the storage card.
5	Battery	Indicates battery level.
6	Storage media	Indicates used storage memory.
7	Recording information	Displays recording information of the file.
8	Photo Size	Displays the photo size setting.
9	DPOF	Indicates the file is marked for printing.

Playback mode for video clips:



No.	Item	Description
1	Playback mode	Indicates playback mode.
2	Protect	Indicates file is protected.
3	Button indicator	Displays the OK button function in Playback mode. Push to start video playback.
4	File no./Total no.	Indicates the file number over the total number of files in the storage card.
5	Battery	Indicates battery level.
6	Storage media	Indicates used storage memory.
7	Recording date & time	Displays the date/time of the vide recording.
8	Video size	Indicates the size of the video clip.
9	Button indicator	Displays the OK button function in Playback mode. Push to adjust audio volume during video playback.
10	Video length	Display the total length of the video clip.
11	Played time	Indicates the played time of the video.
12	Playing status	Displays playing status.
13	Button indicator	Indicates what button to Push on the camera to control video playback. You can select Stop, Pause, Fast Forward and Rewind.

Recording Images and Videos

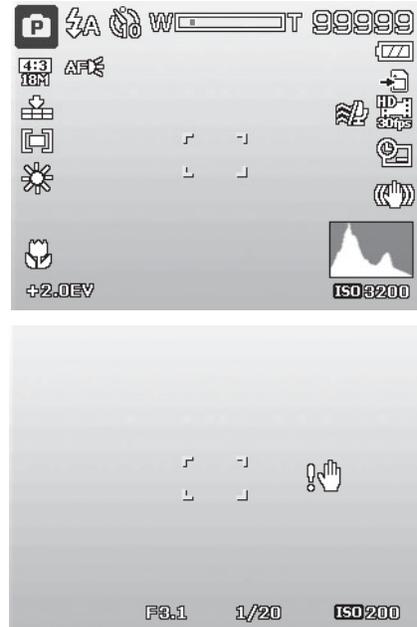
Taking Images

Now that you are familiar with camera controls and menu layout, here are some more important details on using the camera.

1. Push and hold the **Power button** to power on the camera.
2. Compose the shot using the focus bracket on the LCD monitor. See illustration on the right.
3. Pushing the **Shutter button** down halfway automatically focuses and adjusts the exposure, and Pushing the **Shutter button** down fully captures the images.

When the shake warning icon  appears, hold the camera steady. It is recommend to, turn on Flash or use a tripod to stabilize the camera to prevent blurred images.

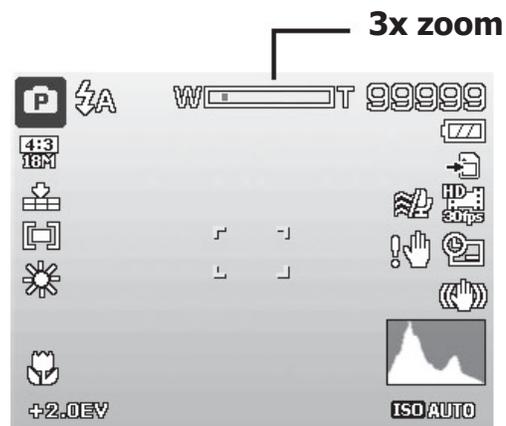
When pushing the shutter halfway, the focus bracket turns green if the camera has focussed on a subject and red if the camera was unable to focus accurately. Common causes for a red focus bracket include incorrect focus setting, insufficient lighting or subject has low contrast (i.e. white wall)



Setting the Digital Zoom Control

Use the 3X digital zoom feature to magnify far-away subjects. To adjust the zoom:

1. Turn ON zoom setting by pushing the Menu button and scrolling down to "Digital Zoom". As a shortcut, may also push the OK button to turn zoom ON or OFF.
2. Once zoom is activated, push ▲ or ▼ keys to increase or decrease zoom from 1x to 3x.



Using EV Compensation

Images can be captured with the overall scene intentionally made brighter or darker. These settings are used when a suitable brightness (exposure) cannot otherwise be obtained in circumstances where the difference in brightness between the subject and the background (the contrast) is large, or when the subject that you wish to capture is very small within the scene. Available for still images only.

- Push the **EV/Delete/Right** button to launch the EV Compensation function.
- To adjust EV settings, Push the ▲ or ▼ keys to increase/decrease the value. As you adjust the EV settings, you will see the resulting effect on the LCD monitor.
- Push the **OK** button to save and apply changes.
- The EV setting is only available in shooting still images.
- The EV setting button is not accessible when the camera is inside the housing, however, EV can be set as a Shortcut so it is accessible by pushing the OK button. See page **59** for details about using the Shortcut setting.



EV/Delete/Right button



Using the Flash

When taking pictures in low light or challenging lighting conditions, use the **Flash** to get brighten the image exposure. The flash function is not available for videos or continuous shooting.

To activate Flash:

- Push the **Flash/Down** button to launch the Flash function.
- Push the ▲ or ▼ keys to select the desired flash setting.
- Push the **OK** button to save and apply changes.



Flash/Down button

Your camera is equipped with five flash modes:

⚡A Auto Flash - The flash fires automatically in low light conditions.

⚡👁 Red-eye reduction - The flash fires twice to reduce the red-eye effect.

⚡ Forced on - The flash fires whenever you Push the Shutter button regardless of lighting conditions.

⚡sl Slow sync - The flash fires with a slow shutter speed. This is for artistic effect where you want to illuminate and “freeze” the subject in the foreground while showing motion blur in the background.

🔌 Forced off - The flash is turned off.



Note: Flash function is only available in shooting still images, but not available in Continuous Shooting/Landscape/Sunset/Dawn/Night Scene/Fireworks/Sports/Candlelight/Background Defocus/HDR/Time Lapse/Panorama/GIF Capture/Art Effect (except Fisheye Lens) or when shooting video.

When the flash fires, the white balance (WB) is automatically locked to 5500K to match the color temperature of the camera’s flash. The flash will cancel any other WB setting, including underwater color correction. It is possible to adjust the WB setting when the flash fires. See “Flash WB” setting on page 51.

Using Self-timer

The Self-timer allows you to take images after a pre-defined delay. This function is only available in recording still images. The Self-timer setting is automatically set to off when you turn off the camera.

To activate Self-timer:

- Push the **Rotate/ Self-timer/Left** button to launch the Self-timer function.
- Push the ▲ or ▼ keys to select the desired Self-timer setting.
- Push the **OK** button to save and apply changes.



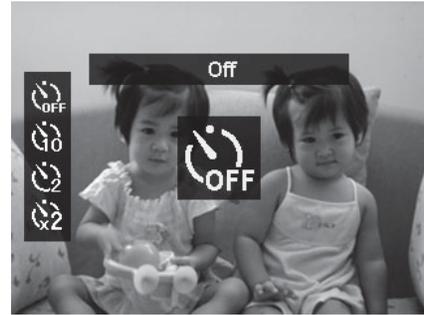
Your camera is equipped with 4 Self-timer modes:

 **Off** - Captures an image without time delay.

 **10 Sec** - Sets a 10-second delay to capture image after Pushing the Shutter button.

 **2 Sec** - Sets a 2-second delay to capture image after Pushing the Shutter button.

 **Double** – Captures two images; First image with 10 second delay and second image with 2 seconds delay.



Note: The Self-timer function resets to **Off** after every shot or when powering off the camera. The Self-timer function is not available when the camera is inside the UW housing.

Setting the Focus Mode

The camera uses auto focus lens to adjust focus from 4" (10cm) to infinity depending on what focus setting is used.

To set the Focus mode

- Push the **Focus/Up** button to launch the Focus settings.
- Push the ▲ or ▼ keys to select the desired focus setting.
- Push the **OK** button to save and apply changes.

Your camera supports the 4 focus modes:

AF Auto Focus – Use this for most shooting conditions. The camera will automatically focus on subjects at shooting distance between 6" (15cm) to infinity.

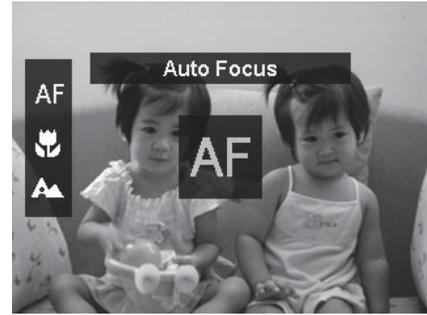
 **Macro** – Use this for shooting close-ups. The camera will automatically focus on subjects at shooting distance between 3.5" (9cm) to 20" (50cm).

 **Super Macro** – Use this for shooting smaller objects at close-up shooting distance. The camera will magnify the subject by 1.7x and automatically focus at shooting distances between 3.5" (9cm) to 20" (50cm).

Focus/Up button



▲ Infinity - Use this for shooting landscapes and moving objects beyond 2ft (60cm) shooting distance . The camera will lock the focus so all subjects are in focus from 2ft (60cm) to infinity.



Note: This function is only available when the Zoom is turned OFF.

The Macro and Super Macro focus settings only apply to pictures and not videos. The focus range for video recording is 3.5" (9cm) to infinity.

Using the Delete Button



Use the **Delete** button on your camera to delete a pictures, videos and audio clips.

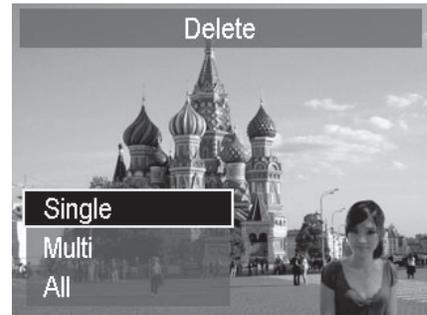
The Delete function allows you to remove unwanted files from the camera's memory. Protected files cannot be erased, to delete, unprotect the file first. See "Protect" on page 69.

To delete an image/video clip:

1. Push the **Playback button**  on the camera.
2. View images/videos clips in Single navigation mode.
3. Use the ▲ or ▼ keys to scroll through images/videos.
4. When the unwanted image/video clip is displayed on the LCD monitor, Push the **Delete/Right** button.
5. A confirmation selection appears on screen.
6. To close the Delete function and go back to the single navigation mode, Push **Menu** button.

To delete a single file:

1. After a confirmation selection appears on screen. Select **Single**.
2. Push the **OK** button and select **Delete** to delete.
3. The next image is displayed on the LCD monitor. To delete another file, use the ◀ or ▶ keys to scroll through the images/videos clip. Repeat steps 1 to 2.
4. Push the **Menu** button to exit the Delete function and go back to the single navigation mode.



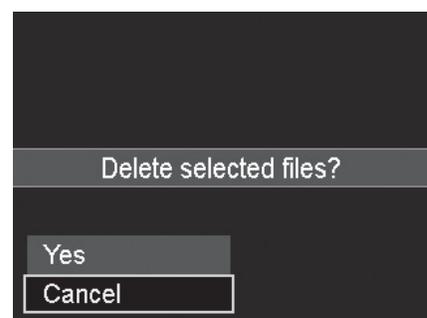
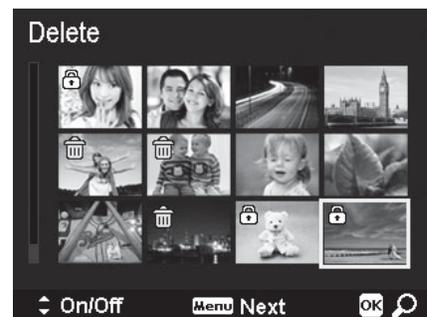
To delete attached voice memo:

1. After a confirmation selection appears on screen. Select **Single**.
2. A delete voice memo option will be added to the selection.
3. Select and Push **OK** to delete voice memo.
4. Or select **Delete** to delete both image and its embedded voice memo.



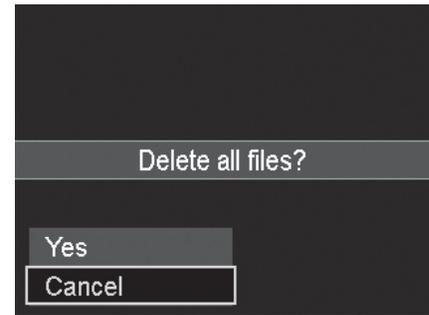
To delete multiple files:

1. After a confirmation selection appears on screen. Select **Multi**.
2. The images are displayed in thumbnail view on the LCD monitor.
3. Use the ◀ or ▶ keys to move through the files.
4. When the desired image/video clip is highlighted, use the ▲ or ▼ keys to mark/unmark image/video clip for deletion.
5. Repeat step 4 until all desired images for deletion are marked.
6. Push the **Menu** button and a confirmation selection will appear.
7. Select **Yes** to confirm.
8. Push the **OK** button to delete marked files.



To delete all files:

1. After a confirmation selection appears on screen. Select **All**.
2. Select **Yes**.
3. Push the **OK** button to delete all files.



Note: The Delete button is not available when the camera is inside the UW housing. To delete image files when the camera is inside the UW housing, push the Playback button, select the image you want to delete and push the shutter button. Select "Single" and push the OK button. Select Delete and push okay. The file is now deleted.

Recording Videos

The camera features Full HD 1080p video function for recording movies. The available recording time depends on the capacity of the memory card installed in the camera. Videos can be recorded until the maximum memory capacity has been reached. The length of a single video clip is limited to 29 minutes or 4GB for easier file management.



1. Push the **Video button**  to start recording.
2. If Zoom function is set to On, push the ▲ or ▼ keys to zoom in and out while recording.
3. Push the **OK** button during recording can pause/resume the recording.
4. Push the **Video button**  again to stop recording.

Note:

- The camera will automatically stop recording when the memory capacity is full.
- It will automatically stop recording when the recording time is over 29 minutes or the file size is over 4 GB.
- When the temperature of CMOS Sensor is over 145°F (63°C), the camera will display the warning message.
- When the temperature of CMOS Sensor is over 150°F (65°C), the camera will shut down automatically.
- Video recording will stop if paused for more than 5 minutes to prevent overheating the camera.

Using Picture-in-Video (PIV) function

While recording a video, you can shoot 2MP pictures by pushing the shutter button halfway. An icon  displays on the bottom left of the LCD indicating PIV has been captured. The PIV feature is only applicable to movie size: 1080p60, 1080p30 and 720p30.

Note:

- When the movie size is 1080p (60fps) or 1080p (30fps), the capture photos are saved at 1920 x 1080 resolution.
- When the movie size is 720p (30fps), the capture photos are saved at 1280 x 720 resolution.
- See page 56 for information about the video settings menu.

About the Mode dial

There are 8 different photography modes that can be quickly set by turning the Mode dial. Each mode is a specific photographic function or effect as described below. Turning the Mode dial will immediately enter the selected mode, even when camera is in Playback mode or during movie recording.

Icon	Mode	Description
	Program	The camera automatically adjusts exposure based on ambient lighting conditions. Allows full access to all menu settings and menu setting changes are saved when powering off the camera. This mode is intended for land but may be used underwater when menu settings are set correctly.
	Intelligent Scene	The camera detects the shooting conditions and automatically switches to the appropriate scene mode. Menu setting changes are limited. See "Using Intelligent Scene" on page 33 for more details. This mode is intended for land but may be used underwater when menu settings are set correctly.
	Land Scene	Select among 25 common land scene mode options. Each scene mode automatically adjusts the camera settings for a specific shooting condition. The selected scene will be saved when powering off the camera or returning to the SCN mode later on. Menu setting changes are limited. See "Setting the Land Scene Mode" on page 34 for more details. This mode is intended for land but may be used underwater for desired effect.
	Panorama	Use this feature to create a panoramic photo by panning or tilting the camera. Menu setting changes are limited. See "Using Panorama Mode" on page 40 for more details. This mode is intended for land but may be used underwater for desired effect.
	Manual	Allows full exposure control by manually adjusting the aperture, shutter speed and ISO. Allows full access to most menu settings, except for EV compensation and Exposure Bracketing. See "Using Manual Mode" on page 41 for more details. This mode may be used for land or underwater.
	Underwater	After selecting Underwater mode, push the Menu button to select among 4 underwater scenes – Dive, Snorkel, Ext Flash or Ext Light. The selected scene will be saved when powering off the camera or returning to the Underwater mode later on. Each UW scene automatically adjusts the camera settings for a specific shooting condition or camera setup. Allows full access to most menu settings, except Maximum ISO and AF Lamp. See "Setting Underwater Scene Modes" on page 42 for more details. This mode is intended for underwater use.

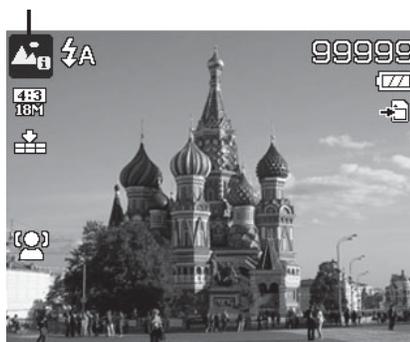
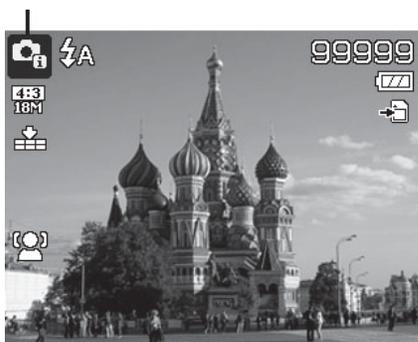
A	Aperture Priority	This feature lets you manually adjust the aperture value while the camera automatically adjusts shutter speed to ensure proper image exposure. Allows full access to menu settings. See "Using Aperture Priority Mode" on page 44 for more details. This mode may be used for land or underwater.
S	Shutter Priority	This feature lets you manually adjust the shutter speed while the camera automatically adjusts aperture to ensure proper exposure. Allows full access to menu settings. See "Using Shutter Priority Mode" on page 45 for details. This mode may be used for land or underwater.

Using Intelligent Scene -

This feature is most useful for novice users to capture great images on land even without basic knowledge of photography. Simply frame the shot with the help of Intelligent Scene Mode, the camera automatically recognizes 7 kinds of scenes - Portrait, Landscape, Macro, Backlight, Backlight Portrait, Night Scene and Night Portrait - and selects the ideal settings. Intelligent Scene mode is intended for land use but may also be used underwater for desired effect

After the camera detects the shooting conditions, the Intelligent scene icon changes to show the detected scene mode.

In this example, the camera changed to Landscape mode automatically.



To activate Intelligent Scene

1. Turn the Mode dial to icon .
2. Push the shutter button half way to focus the camera on the subject.
3. The camera detects the shooting conditions and switches to an appropriate scene mode. The detected scene mode icon will be displayed on the LCD monitor.
4. Push the Shutter button to take the shot.

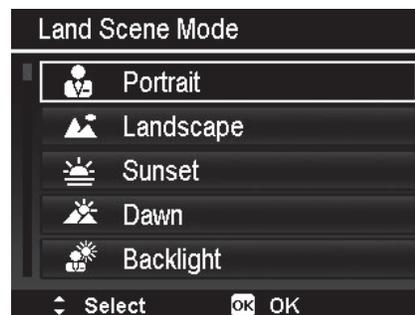
NOTE: If camera does NOT detect suitable scene mode, it will automatically adjust focus and exposure to capture best possible picture.

Setting the Land Scene Mode - **SCN**

Select among 25 common land scene modes. Each scene mode automatically adjusts the camera settings for a specific shooting condition. Intelligent Scene mode is intended for land use but may also be used underwater for desired effect

The selected scene will be saved when powering off the camera or returning to the SCN mode later on.

1. Turn the Mode dial to icon **SCN** to enter last used Scene mode (Default: Portrait). Push Menu button to select other scene modes.
2. Use the navigation controls to move through the selection.
3. Push the **OK** button to save and activate the selected scene mode.



The table below shows the available scene mode settings.

Icon	Item	Description
	Portrait	The camera focuses on the person in the foreground while blurring the background.
	Landscape	This feature is used to emphasize wide scenic views. The camera's focus locks to infinity and flash is disabled.
	Sunset	This feature enhances the natural warm color tones visible during sunsets. The camera's focus locks to infinity and flash is disabled. EV is set to -0.7.
	Dawn	This feature makes the sky more visible and enhances bluer color tones. The camera's focus locks to infinity and flash is disabled. EV is set to -1.0.
	Backlight	The camera exposes properly on subjects standing in front of a bright background. The camera's flash is forced ON.
	Kids	The camera uses faster shutter speed to capture still images of moving kids. The camera's flash is set to red-eye reduction.
	Night Scene	This feature enhances the night sky. EV is set to -1.0 for better exposure of moon and stars. The camera's focus locks to infinity and flash is disabled. It is recommended to use a tripod or place camera on stable surface to prevent motion blur.

	Fireworks	This feature slows shutter speed to capture firework in motion. It is recommended to use a tripod or place camera on stable surface to prevent motion blur.
	Beach	This feature is used to enhance bright beach scenes with EV compensation set to +0.3.
	Snow	This feature is used to enhance bright snow scenes with EV compensation set to +0.3.
	Sports	This feature uses faster shutter speed to capture images of fast moving subjects. Camera shoots 3 pictures within 1 second, ideal for capturing a fast moving racing car or a golf swing. The flash is disabled.
	Party	This feature is used for taking pictures of people in low light indoor settings, like weddings or parties. The camera's flash is set to red-eye reduction.
	Candlelight	This feature is used to capture warm candle light effects. The camera's flash is disabled.
	Night Portrait	This feature is used to capture portrait pictures with night or dark background. The camera's flash is set to red-eye reduction.
	Soft Skin	This feature enhances skin color tone to make skin appear smoother.
	Food	This feature increases color saturation to make food appear more enticing. The camera's flash is set to auto and focus is set to macro.
	Background Defocus	Use this feature to take pictures with the sharp focus on the subject in the foreground, while the background is out of focus. If the the shooting environment is too dark or the background cannot be recognized, an error message "Defocus Failed" will be displayed on the LCD monitor when pushing Shutter halfway.
	Love Portrait	This feature uses face tracking to auto detect faces and capture a portrait without the help of others. When two faces are detected, the camera automatically focusses and starts 2-second count down before capturing the picture.

	Self Portrait	<p>This feature uses face tracking to auto detect a face and capture self portrait without the help of others. When one face is detected, the camera automatically focuses and starts 2-second self timer before capturing the picture. Tips to make a great shape by self portrait photography:</p> <ul style="list-style-type: none"> • Lean in towards the camera to reduce double chin. • Angle your body and bend your arms to look slimmer. • Keep your shoulders back.
	Smile Shutter	<p>This feature uses face tracking to auto detect faces and smile detection to capture continuous pictures whenever the person smiles.</p>
	HDR	<p>This feature applies digital processing to enhance highlights, shadows and contrast. Use for high contrast scenes, for example, when photographing brightly light outdoor scenery through a door/window, or taking pictures of shaded subjects on a sunny day. Hold camera still during image capture.</p>
	Time Lapse	<p>Use this feature to take photos automatically at the specified time intervals. See "Using Time Lapse" on page 37 for more details.</p>
	GIF Capture	<p>Use this feature to take a specified number of images at specified shooting time intervals. The captured images will be combined into a GIF file and no longer exist individually. See "Using GIF Capture" on page 37 for more details.</p>
ART	Art Effect	<p>Use this setting to capture creative images using one of 17 different artistic effects. See "Using Art Effect" on page 38 for more details.</p>
	Continuous Shooting	<p>Use this setting to capture a series of images using one of 6 different shooting modes. See "Using Continuous Shooting mode" on page 39 for more details.</p>

Using Time Lapse [Land Scene mode]

Use this feature to take photos automatically at the specified intervals. The photo size will be 16:9 (2M). In Time Lapse mode, Push **Left** button to launch the Time Lapse menu, and then Push **Up/Down** button to select the options.



Available options are 5 sec. (Default), 10 sec., 30 sec., 1 min., 5 min., 10 min. and 30 min. Push **OK** button to apply the setting and close the menu.

You can full Push the Shutter button to start recording, and full Push the Shutter button again to stop recording. The Time Lapse photos will be merged into a Time Lapse movie at 10 fps.



Note: Photos taken from Time Lapse will be combined into a movie and will **NOT** exist individually.

Using GIF Capture [Land Scene mode]

Use this feature to take a specific number of images in a specific shooting interval. The captured images will be combined into a GIF file and no longer exist individually.

Push **OK button** in Preview could launch the GIF Setting. Use **Up/Down button** can adjust the shooting interval. Available options are 1 sec, 2 sec and 3 sec.

Use **Left/Right button** can adjust the number of shot. Available options are 5 pic and 10 pic.

A pie chart will be displayed on lower right of the screen during GIF capture to show progress. If all shots have been taken, these JPGs will be combined into a GIF and will be played in loop immediately, then a confirm box shows up. Select **Save** to save the file or select **Cancel** to erase the generated GIF.

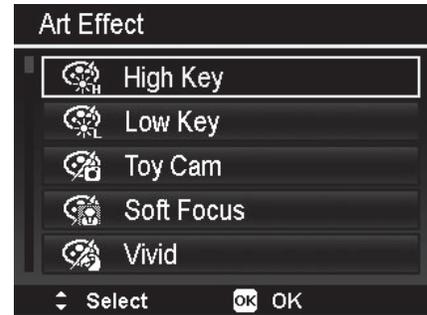


Pie chart shows progress

Note: The captured images will be combined into a GIF file and no longer exist individually.

Using Art Effect [Land Scene mode]

Show your creative side with one of these 17 artistic effects that can be presented on Preview and also apply to movie recording.



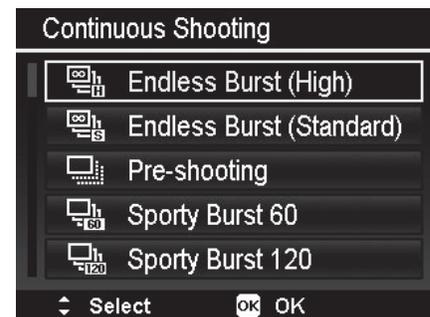
Push ▲ or ▼ keys to select between the following settings:

Icon	Item	Description
	High Key	This feature enhances the brightness to achieve a lighter tone.
	Low Key	This feature reduces the brightness to achieve a darker tone.
	Toy Cam	Images are captured with darkened edges around the image frame and alters color tones.
	Soft Focus	Produces halo around the subject to achieve a soft focus effect.
	Vivid	The camera captures the image with more contrast and saturation emphasizing on the bold colors.
	Fisheye Lens	This feature captures images with fisheye lens effects.
	Cross Process	This feature heightens a certain tone and increases the contrast to achieve a unique style.
	Extreme Color	This feature captures the image with increased saturation and contrast.
	Painting	This feature captures images with painting effects. Please note that Painting is not available in movie recording.
	B&W	Images are captured in black and white.
	Sepia	Images are captured in sepia tones.

	Color Accent (Red)	Retains red tone while the rest of the scene becomes black and white.
	Color Accent (Orange)	Retains orange tone while the rest of the scene becomes black and white.
	Color Accent (Yellow)	Retains yellow tone while the rest of the scene becomes black and white.
	Color Accent (Green)	Retains green tone while the rest of the scene becomes black and white.
	Color Accent (Blue)	Retains blue tone while the rest of the scene becomes black and white.
	Color Accent (Purple)	Retains purple tone while the rest of the scene becomes black and white.

Using Continuous Shooting [Land Scene mode]

Continuous Shooting allows you to easily capture fast-moving targets, for example children playing, running dogs or exciting sport events.



Push ▲ or ▼ keys to select between the following settings:

Icon	Item	Description
	Endless Burst (High)	Capture photos any size with 10 frames per second (fps). Push and hold the shutter button to start continuous shooting. The camera will capture images until 10 photos are taken, shutter button is released, or the memory card is full.
	Endless Burst (Standard)	Capture photos in any size with 3 fps. Push and hold the shutter button to start continuous shooting. The camera will capture images until 50 photos are taken, shutter button is released, or the memory card is full.
	Pre-shooting	Capture photos before fully pushing the shutter button. This feature begins by half-pushing the shutter button, and continues when the shutter button is fully pushed. The camera will capture up to 5 photos in a series at 15 fps, including up to 2 photos captured in pre-shooting before shutter is fully-pushed.

	Sporty Burst 60	Use this feature to capture 25 photos at 60 fps. Each image size is 2M (1920 x 1080) resolution.
	Sporty Burst 120	Use this feature to capture 50 photos at 120 fps. Each image size is 0.3M VGA (480x640) resolution.
	Smart Select	Capture photos in any size at 10fps. Push and hold the shutter button to start continuous shooting. The camera will capture 5 photos and ONLY save the sharpest one of the series. The other 4 photos will be erased automatically.

Using Panorama Mode -

Use this feature to create a panoramic photo from multiple shots that the camera stitches together into one single image.

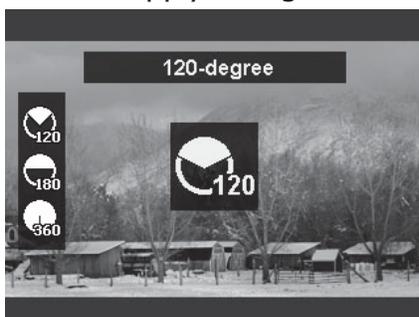


Note:

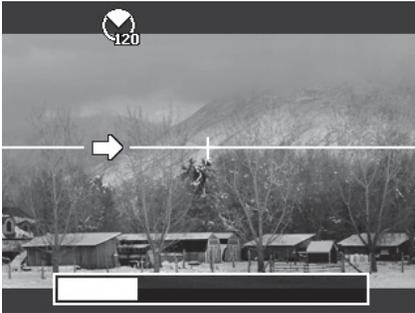
- The actual size of stitched images may be different due to the panoramic angle and processing.
- It is recommended to use a tripod to stabilize the camera, and move the camera slowly.
- The longest time of capturing is approximately 30 seconds.
- If you select **From Top to Bottom** or **From Bottom to Top** in **360-degree** panorama, it is recommended to turn the camera over 90 degrees in order to make sure the stability during capturing.
- In Panorama mode, uneven brightness may result in difference between the captured image and its actual scene.

To stitch the still image

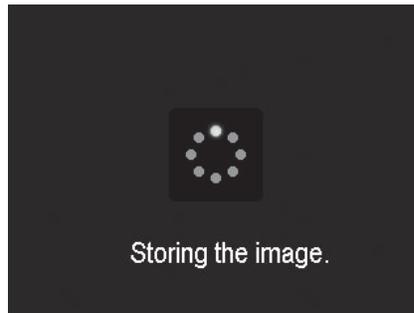
1. Push ▼ key to launch the **Angle Menu**. Use the ▲ or ▼ keys to select options. Push the **OK** button to save and apply changes.
2. Push ▲ key to launch the **Direction Menu**. Use the ◀ or ▶ keys to select options. Push the **OK** button to save and apply changes.



3. Fully push the shutter button to start shooting. When shooting starts, a white-cross locates on the center and a yellow line is displayed horizontally (or vertically) through the screen. In addition, a progress bar on the bottom of the screen shows the relative shooting position of the panoramic image capture.
4. Slowly and steadily move the camera in the specified direction, while making sure to keep the white cross centered on the yellow line. If you move camera without keeping a straight line, the yellow line will move with the scene. The camera will display an error message if a straight line is not maintained or camera is moved to fast.



5. When the white portion of the progress bar goes to the end, the camera will automatically perform stitching function and save the panorama image.



Using Manual Mode - **M**

For land or underwater use. This mode allows you to adjust both shutter speed and aperture values to achieve desired exposure and effect. Aperture may be adjusted from F1.8 to F11 in 1/3 stops. Shutter speed may be adjusted from 15" (seconds) to 1/2000 second. Auto ISO and EV compensation are locked when shooting in Manual mode. The resulting exposure value (EV) is displayed on the bottom of the screen when pushing the shutter button halfway. The EV displayed is only for your personal reference; Actual EV compensation is NOT automatically adjusted.

Manual mode is intended for experienced photographers familiar with advanced photographic principles. You have complete control over image exposure and various effects. More information about learning to shoot in manual mode is available at your local bookstore or online through various photographic training website.

To set Aperture and Shutter speed values:

1. Turn the Mode dial to **"M"** for **Manual mode**.
2. Push **OK button** to enter Aperture Adjustment mode, then, use **Up/Down button** to select the desired aperture.
3. Push **OK button** again to enter Shutter Speed Adjustment mode, then, use **Up/Down button** to select the desired shutter speed.
4. Fully push the **Shutter button** to capture the image.



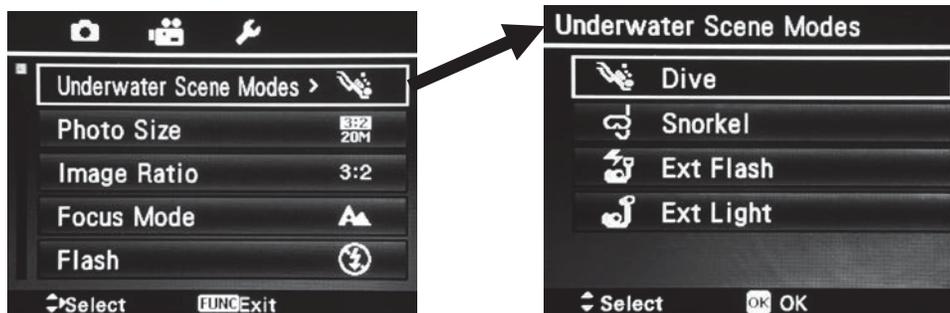
Displays aperture and shutter speed values

Setting Underwater Scene Mode -



Select among 4 underwater scene modes. Each scene mode automatically adjusts the camera settings for specific underwater environments depending on the type of optional UW lighting accessory being used with your DC2000 camera. Advanced photographers may also consider using Manual Aperture Priority, Shutter Priority modes underwater to manually control exposure and other settings.

1. Turn the Mode dial to the  [fish icon] to enter the last used Underwater Scene mode. Dive mode is the default underwater scene mode.
2. Push the Menu button to set the appropriate underwater scene modes. See table below for more details.



3. Use the navigation controls to move through the selection.
4. Push the **OK** button to save and activate the selected underwater scene mode. Scene mode is saved when powering off the camera.

The following table below shows the available UW scene mode settings.

Icon	Item	Description
	Dive	<p>For diving at depths greater than 25ft/8m <u>without external lighting accessories</u>. The camera automatically adjusts exposure and adds color-correction to compensate for deep underwater blue effect.</p> <p>The default white balance setting is Blue Water Deep, which restores the missing red and yellow colors typical in deeper underwater environments. For greener water conditions where algae bloom is present, change the WB setting to "Green Water".</p> <p>The built-in underwater color correction is most effective within depths of 60ft/18m. Below 60ft/18m, there is a complete absence of red/yellow colors and UW lighting is recommended for optimum colors.</p> <p>The default setting for camera's internal flash is set to OFF but may be turned ON for taking close-up pictures within the flash's effective range of about 12" / 30cm. Using the camera's internal flash will cancel the underwater color correction. For longer effective range, we recommend using the optional Sea Dragon Flash and/or photo-video light.</p>
	Snorkel	<p>For snorkeling or diving at shallow depths less than 25ft/8m <u>without external lighting accessories</u>. The camera automatically adjusts exposure and adds underwater color-correction to compensate for underwater blue effect at shallow depths.</p> <p>The default white balance setting is Blue Water Shallow, which adds the missing red and yellow colors typical in shallow water. For greener water conditions where algae bloom is present, change the WB setting to "Green Water".</p> <p>The default setting for camera's internal flash is set to OFF but may be turned ON for taking close-up pictures within the flash's effective range of about 12" / 30cm. Using the camera's internal flash will cancel the underwater color correction. For longer effective range, we recommend using the optional Sea Dragon Flash and/or photo-video light.</p>

	Ext Flash	<p>Ideal for any underwater depth using one or two external flash accessories, or combination external flash and photo-video light.</p> <p>The camera automatically adjusts exposure and internal flash always fires to trigger the external flash via optical cable connection. The white balance color setting is locked to match the color temperature typical for underwater flashes resulting in natural colors.</p> <p>The camera will use minimum 1/60 shutter speed to prevent motion blur and minimum F4.0 aperture to prevent over-exposing the subject. To achieve desired exposure, adjust the brightness of the external flash and/or change the camera's EV compensation setting.</p>
	Ext Light	<p>Ideal for any underwater depth using one or more photo-video lights.</p> <p>The camera automatically adjusts exposure. The default white balance setting is Daylight, which is a good color temperature match for Sea Dragon and other brands of photo-video lights.</p> <p>When shooting beyond the effective range of the photo-video light, it is recommended to use one of the 3 underwater white balance setting options. See page 49 for more details about underwater white balance</p>

Using Aperture Priority Mode - **A**

For land or underwater use. This mode allows you to adjust the aperture while the camera automatically adjusts shutter speed to achieve proper exposure. Using a larger aperture, like F1.8, allows more light to enter the lens and will produce a narrow depth-of-field, ideal for shooting close-ups with a sharp foreground and out-of-focus background. A smaller aperture, like F11, allows less light to enter the lens and produces a wide depth-of-field, ideal for producing sharp foreground and background in bright light conditions.

Aperture Priority mode may be used for capturing underwater pictures, however, it will be necessary to change the following settings:

When using Aperture Priority with one or two external flash accessories, or combination external flash and photo-video light, turn flash setting to Forced ON. You will need to synchronize your external flash with the camera's internal flash because the internal flash uses a pre-flash when firing.

When using Aperture Priority without external lighting, change white balance setting to Blue Water Deep, Blue Water Shallow or Green water according to water conditions and depth.

To set Aperture values:

1. Turn the Mode dial to "**A**" for **Aperture Priority**.
2. Push **OK button** to enter Adjustment mode, then, use **Up/Down button** to select the desired aperture value.
3. Fully Push the **Shutter button** to capture the image.



Using Shutter Priority Mode - S

For land or underwater use. This mode allows you to adjust the shutter speed value while the camera automatically adjusts the aperture to achieve proper exposure. A faster shutter speed, like 1/1000 second, is useful for capturing fast moving objects, like freezing the motion of a race car speeding by. A slower shutter speed creates a sense of motion, like water flowing.

Shutter Priority mode may be used for capturing underwater pictures, however, it will be necessary to change the following settings:

When using Shutter Priority with an external flash accessory, turn flash setting to Forced ON. You will need to synchronize your external flash with the camera's internal flash because there is a pre-flash when flash fires in Shutter Priority mode..

When using Shutter Priority without an external flash, keep the camera's internal flash OFF and change the white balance setting to Blue Water Deep, Blue Water Shallow or Green water according to water conditions and depth.

To set shutter speed values:

1. Turn the Mode dial to "**S**" for **Shutter Speed Priority**.
2. Push **OK button** to enter Adjustment mode, then, use **Up/Down button** to select the desired shutter speed.
3. Fully push the **Shutter button** to capture the image.



Displays the shutter value

Using the Main Menu

The camera's main menu allows for easy access and adjustment of photo, video and system settings. When the menu is displayed, use the 4-way navigation control and the **OK** button to move through menu selections and apply your desired settings. To close the menu anytime, Push the menu button again. When the camera is sealed inside the underwater housing, use the Up (Focus) and Down (Flash) keys to scroll through the menu.

The main menu may be accessed in any mode, except for the Playback mode. Pushing the Menu button in Playback mode will enter the Playback Menu. Refer to page 63 for details about the Playback menu.

To access the Main menu:

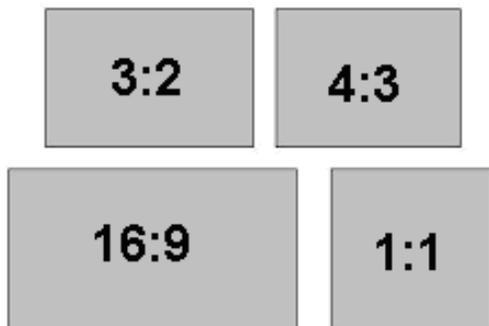
1. Turn on the camera by Pushing **Power** button.
2. Push  to launch the Main Menu.
3. Use the  or  keys to move through the menu
4. To select an item, Push  or OK button.
5. Change the submenu settings using the 4-way navigation control.
6. Push the OK button to save and apply settings.



Photo Size/Image Ratio

The Photo Size setting determines image resolution (megapixels). The default setting is 20M (20 megapixels), which has a pixel dimension of 5472x3648 pixels. A higher resolution results in larger image and file size.

The Image Ratio or "Aspect Ratio" is width of the image relative to its height. Available options are 3:2 (Default), 4:3, 16:9 and 1:1.



Different image ratios correspond to different resolution groups. The table below shows the Image Ratio and Photo Size values available for still images.

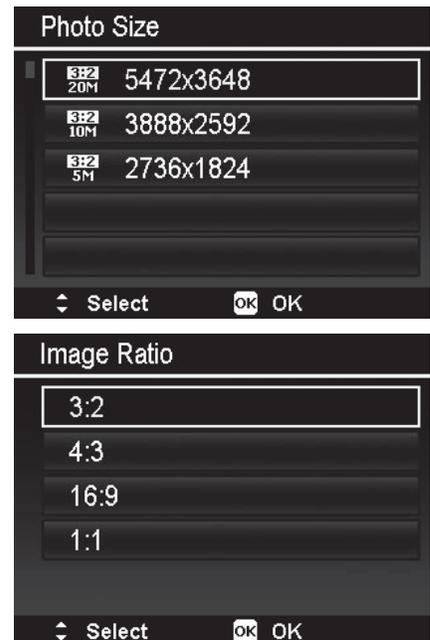


Image Ratio	Large Size	Medium Size	Small Size	Thumbnail Size
3:2	20M (5472x3648)	10M (3888x2592)	5M (2736x1824)	N/A
4:3	18M (4864x3648)	10M (3648x2736)	5M (2592x1944)	VGA (640x480)
16:9	17M (5472x3080)	7.5M (3648x2056)	4.2M (2720x1528)	N/A
1:1	13M (3648x3648)	6.5M (2560x2560)	3.7M (1920x1920)	N/A

Focus Mode

The camera automatically sets the focus depending on the shooting distance. There are 4 focus settings options available: Auto Focus (AF), Macro, Super Macro and Infinity. Refer to page 28 for more details about focus settings.



Flash

The flash setting is useful for taking pictures in low light environment. Available options on Flash Menu are Auto, Red-eye Reduction, Forced On, Slow Sync and Forced Off. Refer to page 25 for more details about Flash settings.

Pre-Flash

Allows pre-flash to be enabled in Manual and UW Ext Flash modes. The original DC2000 firmware did not use a pre-flash for UW Ext Flash and Manual modes, so there was only one primary flash. The Pre-Flash setting is always set to ON when shooting in Aperture Priority, Shutter Priority, Program, Intelligent Auto and some Land Scene modes. The default setting is Pre-Flash Off. The purpose for this setting is to allow the DC2000 camera to be compatible with some 3rd party external strobes with S-TTL or DS-TTL.

Self-timer

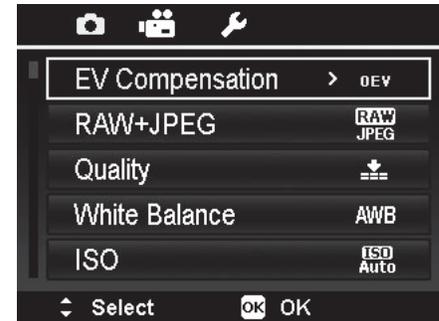
The Self-Timer setting is available for taking pictures only. Available options on Self-timer Menu are Off, 10 sec, 2 sec and Double. Refer to page 26 for more details about the Self-Timer settings.

EV Compensation

The EV Compensation setting is available for taking pictures only. Available options on EV Compensation are +2.0EV/+1.7EV/+1.3EV/+1.0EV/+0.7EV/+0.3EV/0EV/-0.3EV/-0.7EV/-1.0EV/-1.3EV/-1.7EV/-2.0EV.

Refer to page 25 for more details about the EV Compensation settings.

EV Compensation is not available when camera is set to Manual, Panorama, Land Scene and Intelligent Scene modes or when AF Tracking is enabled.



RAW+JPEG

The RAW+JPEG setting is available for taking a RAW image and JPEG image at the same time.

When RAW+JPEG is ON, the camera will save two image files (one .dng RAW image and one .jpg JPEG image) each time the shutter button is pushed. When RAW+JPEG is Off, only a JPEG image is saved. The default setting is OFF.

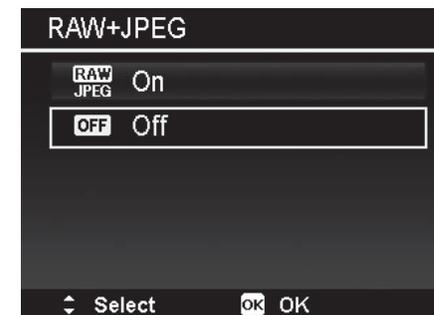
RAW images are uncompressed files that allows for virtually unlimited photo editing options. The camera uses Adobe Digital Negative (.dng) format which can be edited using Adobe Photoshop or Lightroom. This setting is recommended for experienced users familiar with advanced photo editing.

RAW images cannot be played back on camera. Only the corresponding JPEG image may be played back.

Playback functions will not be applied to RAW images (except Delete and Copy). Deleting the JPEG image will also delete the corresponding RAW image file.

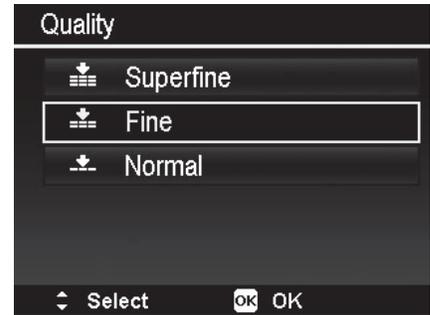
Note:

It takes the camera about 5 seconds to process a RAW+JPEG capture and write the 48MB files to the memory card. Image ratio (Aspect ratio) must be set to 3:2 or RAW+JPEG cannot be enabled.



Quality

The Quality setting determines the amount of compression used to save a JPEG image. The Superfine quality setting results in the least amount of compression with sharper details compared to Fine or Normal. However, the higher the quality, the more memory space is required.



Icon	Available Settings	Description
	Superfine	5x compression rate.
	Fine	8x compression rate.
	Normal	12x compression rate.

White Balance

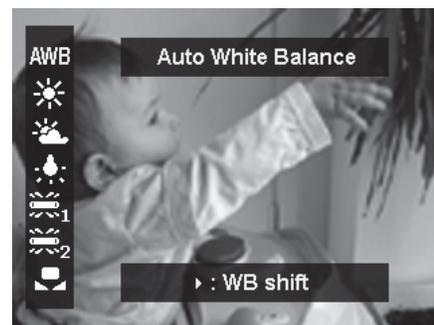
White balance (WB) is the process of removing unnatural color casts created by various lighting environments, so that objects which appear **white** in person are rendered **white** in your photo. The camera features 6 WB settings for land and 3 for underwater. The Custom setting option allows you to manually set the WB on land or underwater using a white slate.

As you scroll through the WB settings, you can see the color effect on the LCD monitor. Underwater WB settings appear red on the LCD monitor on land, but will appear natural when viewed underwater.

The WB setting applies to taking videos and pictures when flash is OFF. When camera's flash

fires, the WB is locked to 5500K to match the color temperature of the flash.

The Auto WB setting (AWB) may be fine-tuned according to your personal preference. In the White Balance menu, select AWB and push the **▶** key to enter **WB Shift** setting. Use the **◀▶** **▲▼** keys to select the desired color shift and push **OK** button to save the setting.



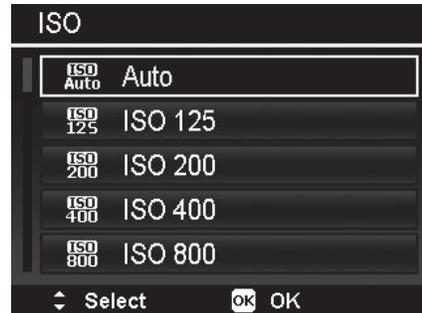
Item		Description
	Auto White Balance	The camera automatically adjusts the white balance. This is the default WB setting and recommended for most shooting environments. Auto WB does not apply for underwater use.
	Daylight	Ideal for outdoor, sunny conditions.
	Cloudy	Ideal for outdoor, cloudy conditions.
	Tungsten	Ideal for indoor images with tungsten or halogen lighting.
	Fluorescent 1	Ideal for indoor images with colder (bluish) fluorescent lighting conditions.
	Fluorescent 2	Ideal for indoor images with warmer (reddish) fluorescent lighting conditions.
	Blue Water Deep	Underwater color correction ideal for diving below 25ft/8m without external flash or photo-video light accessory. This WB setting is the default used by the Dive mode and ideal for most clear tropical waters. In darker conditions (e.g. underneath a ledge) or at depths greater than about 60ft/18m, the color correction will not be as effective and may result in dark or grainy pictures – consider using an external flash or photo-video light accessory, which works well at any depth.
	Blue Water Shallow	Underwater color correction ideal for snorkeling or diving above 25ft/8m without external flash or photo-video light accessory. This WB setting is the default used by the Snorkel mode and ideal for most clear tropical waters.
	Green Water	Underwater color correction ideal for ocean and fresh water with high concentration of algae. Water with high level of algae will take on a greenish color tone.
	Custom	Allows manual adjustment of WB in any lighting condition, on land or underwater. Select Custom WB setting and aim camera at white card or slate and push OK button to save the setting. If set correctly the white card should appear white on the LCD monitor.

Flash WB (White Balance)

The Flash WB setting allows you to customize the white balance when flash fires to match your external strobe or desired creative effect. The setting options range from 3500K to 6500K in 100K increments. The default is 5500K to match the DC2000's internal flash color temp. The Sea Dragon Flash (SL963) is 5700K without diffuser and 5400K with diffuser. This setting was added with firmware version V1.08, which is available for free download at www.sealife-cameras.com/firmware. Before adding this setting, the camera's white balance was locked to 5500K color temp whenever the flash fired.

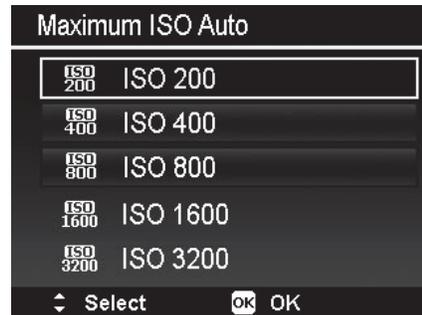
ISO

The ISO setting controls the light sensitivity of the image sensor for capturing images. A higher ISO value increases the sensor's light sensitivity and allows for photography in low-light environments, but the more pixelated (grainier) the image will appear. A lower ISO value reduces the sensor's light sensitivity and is ideal for brighter environments. Available options are Auto (Default), 125, 200, 400, 800, 1600, 3200, 6400, 12800 and 25600.



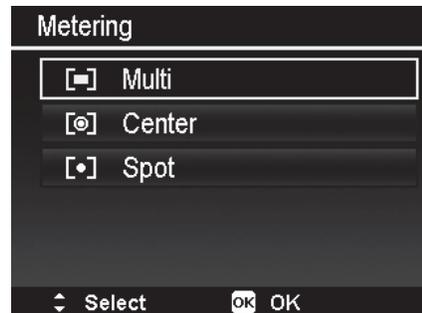
Maximum ISO Auto

This feature allows the camera to adjust Auto ISO from 125 to the maximum set value. Available options are 200, 400, 800, 1600, 3200, 6400 and 12800 (Default). When camera is set to any of the 4 underwater scene modes, the maximum ISO Auto value is 800.



Metering

This sets the metering method for calculating the exposure.

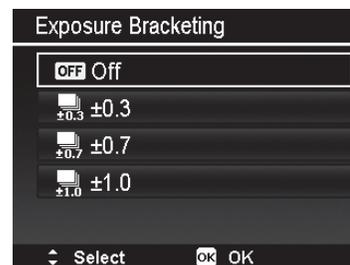


Item		Description
	Multi	The entire area of the screen is measured, and the exposure is calculated.
	Center	Averages the light metered from the entire frame, but gives greater weight to the subject matter at the center.
	Spot	A very small portion of the center of the screen is measured, and the exposure is calculated.

Exposure Bracketing

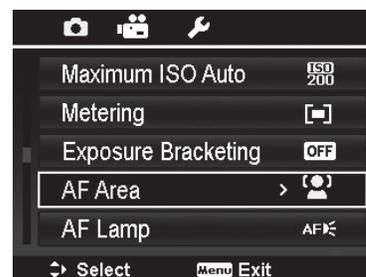
Use this feature to take photos with different exposure compensation. Bracketing records 3 continuous images in the following order: Standard exposure, Overexposure and Underexposure.

Available settings are: Off, +/- 0.3 EV, +/- 0.7 EV and +/- 1.0 EV.



AF Area

AF stands for Automatic Focus. This feature determines the area of the picture frame on which the camera focuses.



The table below shows the available AF area settings.

Icon	Item	Description
	Face Tracking	This feature auto detects faces and tracks continuously. Up to 10 faces can be detected at the same time when using Face Tracking.
	Wide	The camera automatically selects focus area within the wide frame.
	Center	The focus area is fixed on the center.
	Tracking AF	The camera will track the selected object as it moves. Align the yellow focus square with the object you want to track and push the focus button. The camera will initially set the focus on that object. If the shooting distance changes, pushing the shutter button halfway or all the way will readjust the focus. The camera must be set to normal AF Auto Focus in order to select Tracking AF setting. EV Compensation and Digital Zoom settings are not available when AF Tracking is enabled.

AF Lamp

The AF Lamp is located in the front of the camera and emits an orange/red light to assist the camera in focusing on objects in low light conditions.

When AF Lamp can be set to Auto or Off. When set to Auto, the AF Lamp will turn on automatically when needed.

The AF Lamp is intended for land applications only and not for underwater. For underwater application, it is recommended to use an external photo-video light accessory.



AE/AF Lock (auto exposure/auto focus lock)

This new setting was added with firmware version V1.08, which is available for free download at www.sealife-cameras.com/firmware. This setting allows you to lock and unlock the camera's auto exposure and/or auto focus by pushing the up [focus] button. This feature has many useful applications. For example, when recording video with continuous AF enabled, the camera frequently checks and adjusts focus throughout the recording, even if the shooting distance has not changed, which can be disruptive. Now you can lock the focus while recording and only unlock it when you are making significant changes to the shooting distance. A same benefit applies to auto exposure – the camera constantly monitors and adjusts exposure during video recording when moving from brighter areas to darker areas. These auto exposure adjustments are noticeable steps caused by the lens iris changing, resulting in some disruption when playing back the video. Locking the auto exposure eliminates these disruptions and creates smooth video footage.

The AE-L and AF-L settings is also available as a shortcut setting for easy access and quick enabling/disabling when pushing the OK button. The AE-L, AF-L and AE-L & AF-L settings apply to still images as well as during video recording. The AE-L is not available in manual, shutter priority and aperture priority modes.

Note: When AE/AF Lock is enabled, the focus button is used to lock and unlock the exposure and/or focus, so you temporarily won't have access to focus settings. For faster access to both Focus and AE/AF Lock settings, we recommend setting the Shortcut to AE/AF Lock. The Shortcut setting is located in the System menu. This way, you can easily disable the AE/AF Lock and regain access to the focus setting.

To set AE-L, AF-L and AE-L & AF-L:

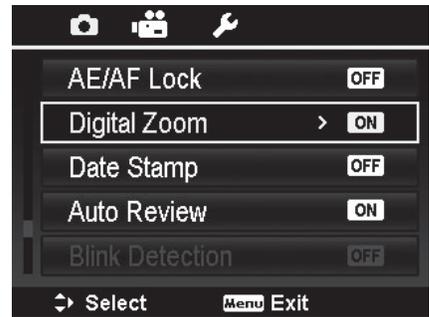
1. Go to the AE/AF Lock setting in the main menu and select among the 4 options – Off, AE-L, AF-L or AE-L & AF-L.
2. Push the up [focus] key to lock the focus and/or exposure. A lock icon will appear on the left side of the display.
3. Push the up [focus] key again to unlock the focus and/or exposure. The lock icon will disappear from the LCD display.

Digital Zoom

Use up to 3X digital zoom to enlarge far-away objects. When Digital Zoom is ON, use the ▲ or ▼ keys to increase or decrease the zoom.

The Digital Zoom setting is located in the main menu, but may also be accessed using the shortcut function. When in preview mode, pushing the **OK** button to launch digital zoom shortcut. The shortcut setting may be changed to launch other desired camera settings. See page 59 for more details about the shortcut function.

Digital Zoom is not available when camera is set to Land Scene (SCN), Intelligent Scene, Panorama modes or when AF Tracking is enabled.

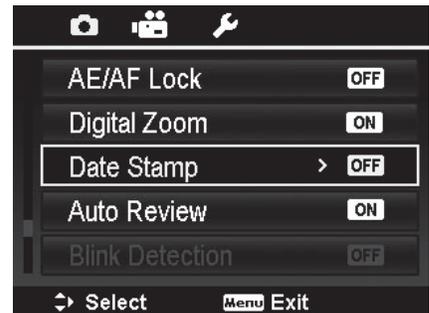


Date Stamp

The date of recording can be printed directly on the still images. This function must be activated before the image is captured. Once date and time are stamped on an image, they can no longer be edited or deleted.

Limitations of Date Stamp functions are as follows:

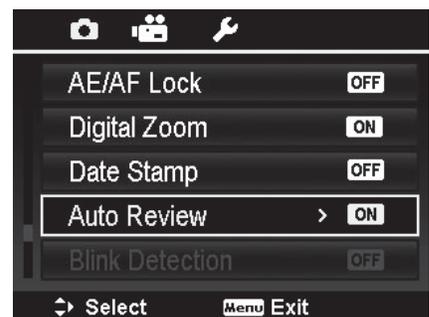
- Available for still images only.
- This feature does not apply to Night Scene, Sports, Night Portrait, Background Defocus, HDR, Time Lapse, GIF Capture, Panorama, and Continuous Shooting.
- When camera is held vertically, the date/time stamp on your images still appear horizontally.



Auto Review

The Auto Review function lets you view the captured image right after shooting it.

If Auto review is On, the camera will display the captured image for **1 second** on the LCD monitor.



Blink Detection

Blink Detection enables the camera to detect if the subjects eyes are closed after taking a picture. If closed eyes are detected, a "Save Image" confirmation appears on the screen, allowing you to save the image or cancel and re-take the shot. Blink Detection appears in Photo menu only when Face Tracking is turned on.

To activate Blink Detection

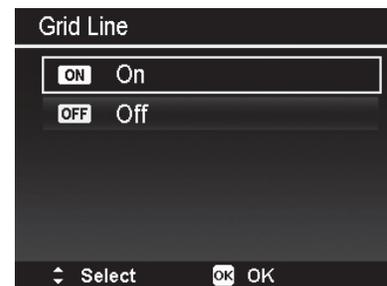
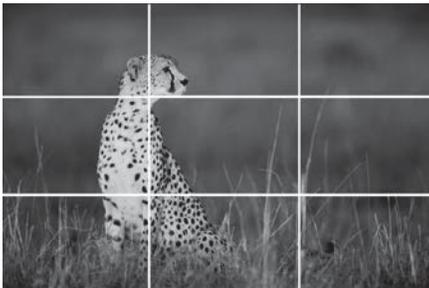
1. Enable Face-Tracking setting in the AF Area menu.
2. Enable Blink Detection from Photo menu.
3. Half Push the **Shutter button** to focus the subject. The bracket turns green to indicate focus is set. If bracket turns red, confirm the focus setting is set correctly and there is sufficient lighting/contrast.
4. Push the **Shutter button** to capture the image and automatically save the Image.
5. If the camera detects subject blinked eye, a "**Save image**" or "**Cancel**" option appears on the screen.
6. Select **Save image** to save or **Cancel** to disregard.



Grid Line

The Grid Line function will show a framing grid on preview screen, which is useful for composing impressive pictures. Available settings are: **On**, **Off**.

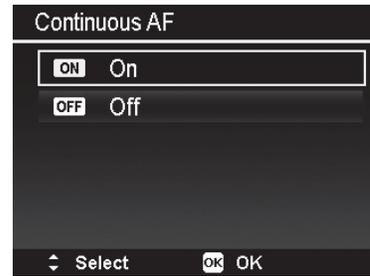
The configuration of Grid Line will be changed with different aspect ratio.



Use the 3 x 3 grid lines to create impressive pictures following the "Rule of Thirds", where subjects are aligned at the intersection points.

Continuous AF Photo

When Continuous AF Photo is on, the camera will periodically adjust focusing during preview without pushing the shutter button. More battery power is used when continuous focus is enabled.

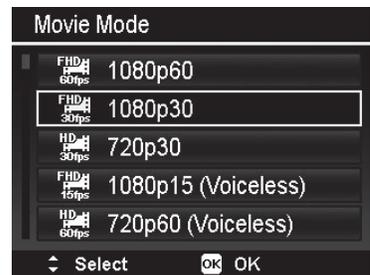


Movie Mode (Video Resolution)

The Movie Mode setting is used to adjust video resolution and frame rate. The maximum recording size per video clip is about 4GB or 30 minutes.

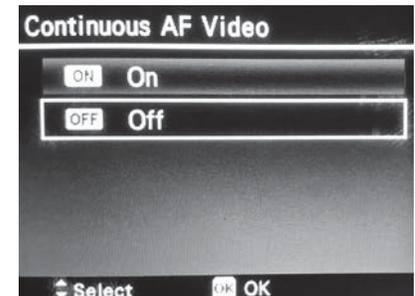
The first value refers to the video size and the second value refers to frame rate, expressed in frames per second (fps). For example, 1080p30 means the video size is 1080p (or full HD video) at 30 fps. 1080p30 is the default setting.

Using 60fps frame rate is ideal for recording fast moving objects, but will use up more memory space. Higher frame rate videos may also be played back in slow motion at 30fps.



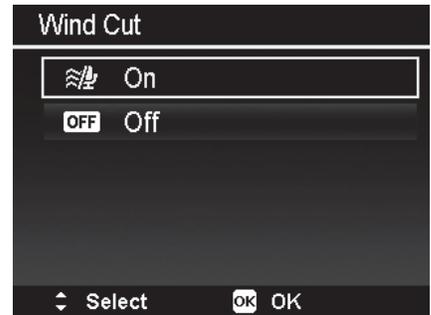
Continuous AF Video

When Continuous AF Video is on, the camera will adjust focusing during video record. More battery power is used when continuous focus is enabled.



Wind Cut

This feature reduces wind noise during movie recording.



Stabilizer

This function reduces shaky movements when recording video using image sensor shift technology. More battery power is used when stabilizer is enabled. The Stabilizer function only applies to video recording and not photos.



Microphone

When Microphone is set to On (default), video recording will include sound. When Mic is turned off, video clips will not include sound. This setting is useful when you want to edit your video to and add your own music or audio track. This setting was added with firmware version V1.08, which is available for free download at www.sealife-cameras.com/firmware.

Setup Menu

The Setup menu is the last section of the Main menu and Playback menu, and allows you to configure general camera settings.

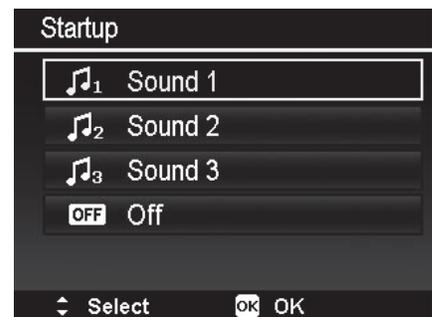
To go to Setup Menu:

1. Push **Menu** button to launch the Menu.
2. Use the ◀ or ▶ keys to switch the menu tab to **Setup** menu.
3. To select an item, Push the **OK** button or ▶ key.
4. Change the submenu settings using the ▼ or ▲ keys.
5. Push the **OK** button to save and apply settings.

Note: When the camera is inside the underwater housing, use the ▼ or ▲ keys to scroll through the Photo and Video menus until you reach the Setup menu.

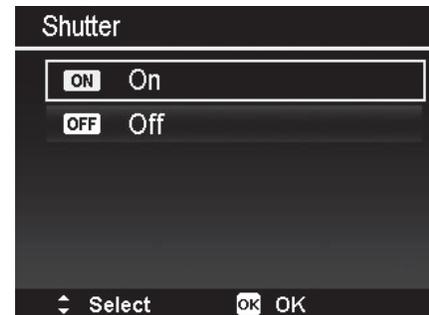
Startup

The Startup setting controls the sound when the camera is powered on. Select among 3 sound options or turn start up sound off. Sound 1 is the default.



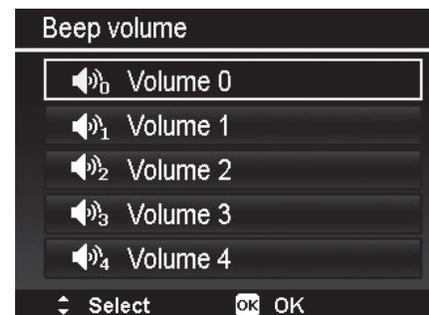
Shutter

The Shutter setting controls the sound when shutter button is pushed. You can turn the sound on or off. Shutter sound is not available when recording video. Shutter On is the default.



Beep volume

Use the Beep Volume setting to adjust the volume of the beep sound when camera focuses, displays a warning message or when setting changes are activated. You can select among 5 volume levels. Volume 2 is the default.

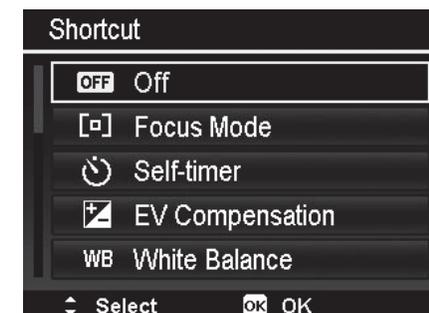


Shortcut

The **OK** button can be used as a shortcut to quickly access one of ten popular menu settings. After selecting the desired shortcut option, push the **OK** button to launch that setting.

Available shortcut settings are Off, Focus Mode, Self-timer, EV Compensation, White Balance, ISO, Metering, Exposure Bracketing, AF Area, Digital Zoom (Default) and Grid Line.

Note: When Zoom setting is ON, the ▼ and ▲ keys will override the Flash and Focus setting. Turn Zoom Off to access Flash and Focus settings.

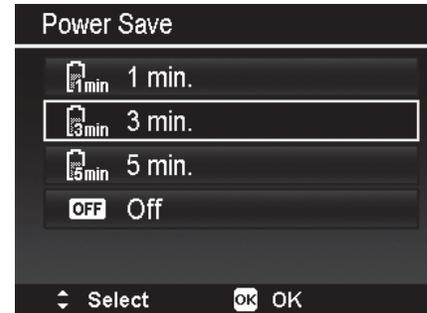


Power Save

The Power Save function allows you to set the amount of time for the camera to enter sleep mode when no buttons are pushed. The display turns off in sleep mode to conserve battery power. After a minute of being in sleep mode, the camera will automatically power off.

This function is not available in the following instances:

- Recording a video file
- Playing a Slide Show/video file
- Using the USB connector
- During Movie Paste
- During interval time on Time Lapse
- During Wi-Fi operation



Bluetooth

This new setting was added with firmware version V1.08, which is available for free download at www.sealife-cameras.com/firmware. Use the The DC2000 uses Bluetooth and WiFi to make wireless connection to your smartphone or tablet running iOS or Android. It's possible for some other Bluetooth apps on your smartphone/tablet to accidentally power on the DC2000. The default setting is Bluetooth ON. If you experience the camera powering on by itself it is most likely caused by some other nearby smartphone/tablet emitting a Bluetooth wake-up signal. In this case, turn your Bluetooth to OFF. Note: The Bluetooth setting must be turned ON in order to establish a wireless connection with the Link123 Plus app.

Date & Time

Use the Date & Time function to set the date and time of your camera. This function is useful in attaching date stamps on captured images. Your camera uses a 24-hour time format.

1. Push the ◀ or ▶ keys to move cursor and select the date or time setting you want to change.
2. Push the ▼ or ▲ keys to change the numeric value.
3. Push the **OK** button to apply changes.



Language

This setting specifies the language used for menus and messages. Select among 31 languages.

1. Use the 4-way navigation control to scroll through the list and select the desired language.
2. Push the **OK** button to confirm and apply settings.



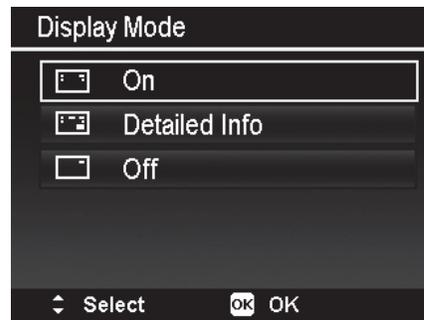
Display Mode

This function controls the icons displayed on the LCD monitor for both Record and Playback modes.

Available settings are: On, Detailed Info, Off.

If set Display Mode to Off, the mode icon and remaining shots will display for 2 seconds in following situations:

- Power on the camera
- Switch from Playback to Record mode
- After shooting
- Close the menu and back to preview

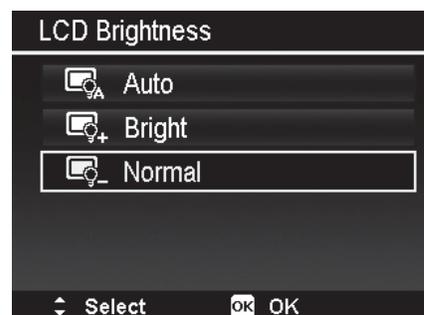


LCD Brightness

Select a brightness level for the LCD monitor.

Available settings are:

- **Auto.** Automatically detects ambient lighting conditions and adjusts the LCD brightness. Auto is the default setting.
- **Bright.** Sets the LCD to brightest setting but uses more battery power.
- **Normal.** Normal LCD brightness.



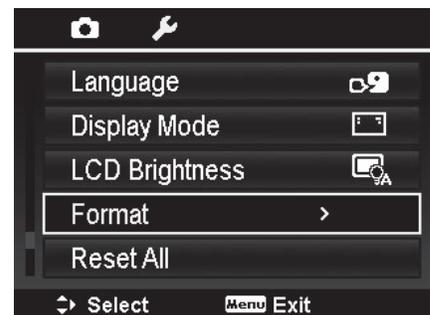
USB Mode

This new setting was added with firmware version V1.08, which is available for free download at www.sealife-cameras.com/firmware. Allows USB connection protocol to be set to Mass Storage or PTP (Picture Transfer Protocol). PTP is a protocol allows the transfer of images from digital cameras to computers and other peripheral devices without the need of additional device drivers. When connecting the DC2000 to a Windows PC using PTP setting, the computer will show the camera as a separate drive called "SeaLife DC2000". When using the PTP setting with MAC computers, the camera will not show up as a drive on the desktop – it will only appear in your Photos app. The Mass Storage setting allows connecting directly to PC or MAC computers and appears as "removable disk(:)" on your desktop. The Mass Storage setting requires the computer to have the necessary camera driver, which almost all computers already include.

Format

This utility formats current used memory (Internal memory or Memory card) and erases all stored images and data. Formatting cleans the memory of any erroneous files and data. It is recommended to format the camera occasionally or when you experience errors when operating the camera.

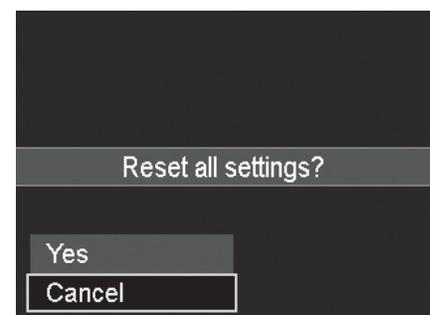
Important: Make sure to download all pictures and videos before formatting the camera, as formatting deletes ALL files.



Reset All

Use this function to reset the camera to its factory default settings. However, the following settings are exceptions and not affected by Reset.

- Date & Time
- Language
- Custom White Balance data
- SSID & Password will be reset to default value. They can be checked and modified only from the App.



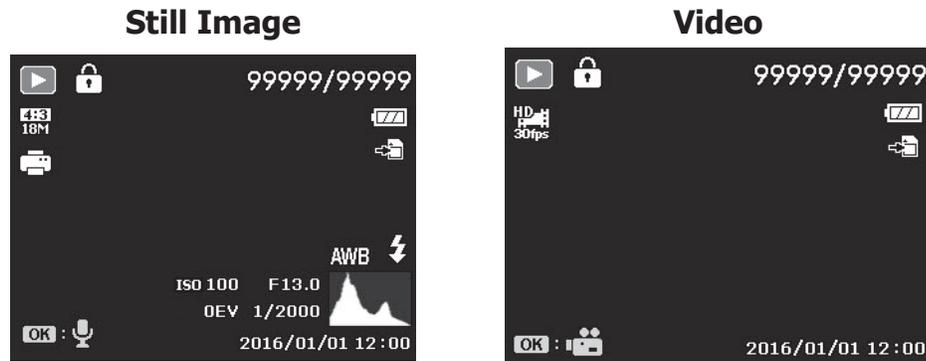
Playback

You can playback the still images, video clips on the LCD monitor.

Viewing in Single Navigation

The Single navigation mode displays the image one by one on the LCD monitor. To view images/video clips, follow the steps below.

1. Push the **Playback button**  on the camera.
2. The LCD monitor displays an image. To understand the icons and other information on the screen, please see "Record Mode Screen" on page 20.



3. Use the **▲** key to view previous image/video or **▼** key to view next image/video.
4. To play a video clip, Push the **OK** button. See "Playing Videos" on page 65 for more details.

Viewing Series Photo

After shooting a series of photos using Continuous Shooting or Sports mode, the photos will be grouped as a single image called "Unexpanded Series Photo". An  icon will appear to indicate it is a series photo.

To view Series Photo, follow the steps below.

1. Push the **OK** button to expand the selected series photo.
2. Use the **▲** or **▼** keys to view next/previous image.
3. Push the **OK** button to collapse the photo series.



Using Calendar view:

The Calendar viewing mode is useful for finding images/videos recorded on a specific date.

Use the 4-way navigation control to scroll through the calendar and push the Ok button to select the desired date. The first photo or video recorded on each date appears on the screen.



Thumbnail icons:

When you view the thumbnails, some images may contain icons. These icons indicate the type of file or recording.

Icon	Type	Description
	File Error	Indicates an error file.
	Video	Indicates file is a video clip.

Playing Videos

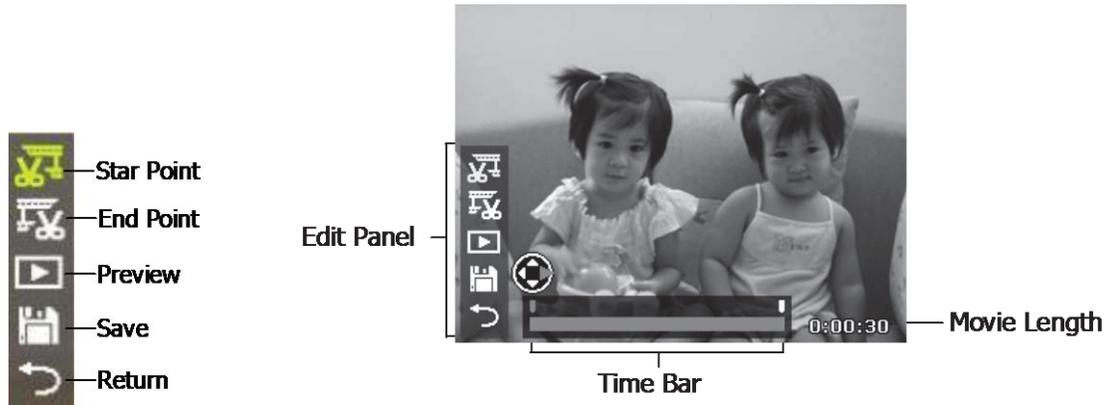
1. Push the **Playback button**  on the camera.
2. Use ▲ or ▼ keys to scroll through the saved images. A video clip has a video icon displayed on screen.
3. Push the **OK** button to play the video.
4. During playback, Push and hold the ►/◄ keys to fast forward or rewind the video. The camera supports forward and rewind speed of up to 4x.
5. During playback, Push **OK** button to adjust volume.
6. Push the || key to pause playback. Push the key || again to resume. When paused, push the ►/◄ keys to forward or rewind the video frame by frame.
7. Push the ■ key to stop the playback. The LCD monitor displays the video frame image in Single navigation mode.



Note: The play info, except the icon , will be displayed when the video is paused, during REW/FF or frame by frame modes. Volume cannot be adjusted when paused or during REW/FF modes.

Using Movie Edit

When a video clip is paused, push the Menu button to enter Movie Edit mode. The Edit Panel will be displayed in the lower left corner of the screen while the time bar and movie length is displayed along the bottom of the screen.



Set Start/End point:

1. Use ▲ or ▼ keys to select the start point  where you want to trim the beginning of the video clip and the end point  where you want to trim the end of the video clip.
2. Use the ◀ or ▶ keys to move the start and end point tabs  in 1/30 second intervals. The movie length must be at least more than 2 seconds.



3. Select the  to preview the trimmed video clip or  to save the video clip. The edited video clip will be saved as a separate file, The original video clip will be preserved.
4. Select  and Push OK to exit Movie Edit mode and return to the paused time whether the Start/End point is set or not.

Playing Voice Memo

Voice memo is separately recorded .wav audio file and attached to a captured image. See "Voice Memo" on page 70 on how to record voice memo.

1. Push the **Playback button**  on the camera.
2. Use ▲ or ▼ keys to scroll through the saved images. An image file with voice memo has a voice memo icon located on the bottom left of the LCD monitor. See picture on the right.
3. Push the **OK** button to play the voice recording.
4. During playback, Push **OK** button to adjust volume. Volume cannot be adjusted when you pause the voice memo.
5. Push the key ▲ to pause playback. Push the key ▲ again to resume. When paused, the play info will remain on screen except .
6. Push the key ▼ to stop the playback. The LCD monitor displays the image in Single navigation mode.



Playback Menu

The Playback menu allows you to edit images, record voice memos, and adjust general playback settings.

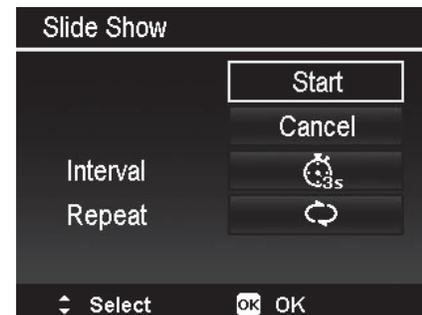
To go to Playback Menu:

1. Push the **Playback button** .
2. Push **Menu button** to launch the Playback Menu.
3. Use the ▲ or ▼ keys to move through the menu selections.
4. Push ► or the **OK** button to select the setting you want to change,
5. Change the submenu settings using the 4-way navigation control.
6. Push the **OK** button to save and apply settings.



Slide Show

The slide show function enables you to playback your still images automatically in sequential order one image at a time.



Using the Slide Show:

1. From the Playback menu, select **Slide Show** and push the **OK** button. The Slide Show menu will appear.
2. Use the 4-way navigation control to set the desired slide show time **interval** (1 sec., 3 sec., 5 sec. or 10 sec.) and if you want the slide show to continuously **repeat** (Yes or No) itself.
3. Select **Start** and push the OK button to start the slide show, or select **Cancel** to exit the slide show setting.
4. During Slide Show, push ▲ to pause/resume and ▼ to stop the slide show.

Protect

Use the Protect setting to prevent images and videos from being erased by mistake. A protected file has a lock icon  when viewed on Playback mode.

To protect files:

1. From the Playback menu, select **Protect**.
2. The Protect submenu is displayed on the LCD monitor.

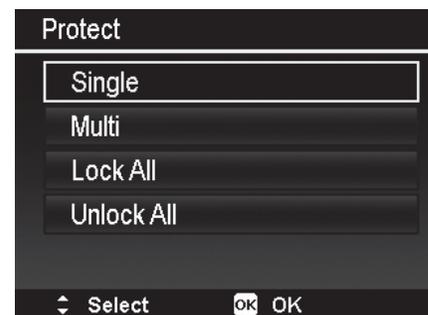
Available select settings:

- **Single.** Select one file to lock/unlock.
- **Multi.** Select multiple files from the thumbnail view to lock/unlock.
- **Lock All.** Lock all files
- **Unlock All.** Unlock all files.



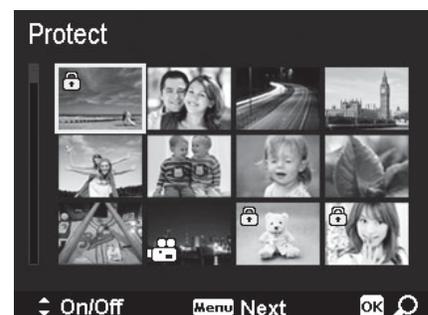
To protect/unprotect a single file:

1. Select **Single** in the Protect submenu, the images are displayed on the LCD monitor in single navigation mode.
2. Use ◀ or ▶ keys to scroll the display.
3. When the desired file is displayed on the LCD monitor, push the **OK** button to **Lock** the file. Pushing OK again will **Unlock** the file.
4. Select **Exit** to close the protect/unprotect function and go back to the Playback menu.



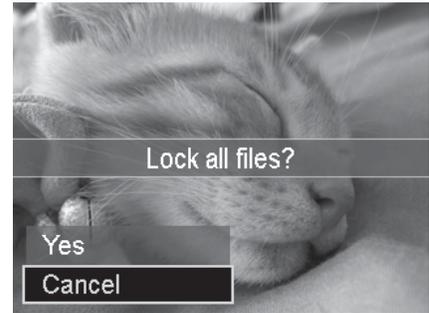
To protect/unprotect multiple files:

1. Select **Multi** in the Protect submenu, the images are displayed on the LCD monitor in thumbnail view.
2. Use the ◀ or ▶ keys to move through the files.
3. When the desired file is highlighted, use the ▲ or ▼ keys to mark/unmark the file for protection.
4. Repeat step 3 until all desired files to protect are marked.
5. Push the **Menu** button to lock files and go back to Playback menu.



To protect all files:

1. Select **Lock all** in the Protect submenu. A confirmation message appears.
2. Select **Yes**.
3. Push the **OK** button to lock all files.



To unlock all files:

1. Select **Unlock all** in the Protect submenu. A confirmation message appears.
2. Select **Yes**.
3. Push the **OK** button to unlock all protected files.

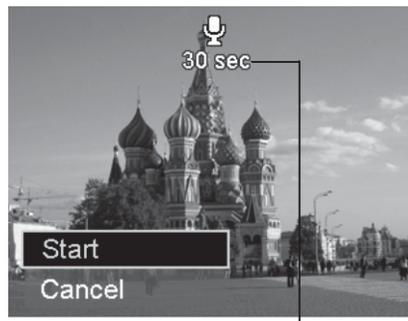


Voice Memo

You can record up to a 30 second audio clip for each captured still images. The audio recording will be associated with the image sharing the same file name but saved separately as a .wav file.

To record voice memo:

1. Push the **Playback button** .
2. Push the **▲** or **▼** keys to scroll and select an image to attach voice memo.
3. Push the **Menu** button to launch the Playback menu.
4. Select **Voice Memo**.
5. Select **Start**, then Push the **OK** button to start recording.
6. Push the **OK** button again to stop recording.



Recording time remaining

Note: When you record voice memo to an image with an existing voice memo, the older recording file would be replaced by the new one.

Filter Effects

The filter effects tool is only applicable to photos captured in **4:3** image ratio (aspect ratio). Edited images using this function are saved as new files.

To activate Filter Effects:

1. Push the Playback button .
2. Push the ▲ or ▼ keys to scroll and select an image to edit.
3. Push the **Menu** button to launch the Playback menu.
4. Select **Filter Effects**. The Filter Effects submenu appears.
5. Push the ▲ or ▼ keys to scroll and **OK** button to select an option.



The following table shows the available settings.

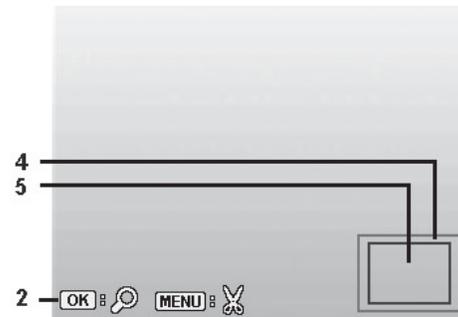
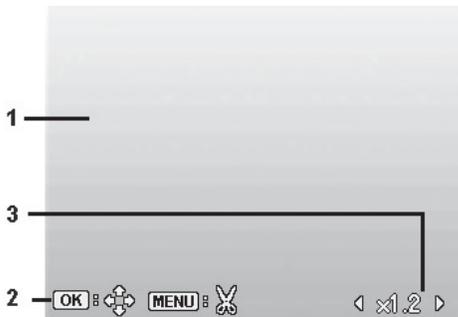
Item	Description
High Key	Enhances the brightness to achieve a lighter tone.
Low Key	Enhances the brightness to achieve a darker tone.
Toy Cam	Darkens edges around the image frame and alters the color tones.
Soft Focus	Produces halo around the subject to achieve a soft focus effect.
Vivid	Emphasizes bold colors by adding contrast and color saturation.
Miniature Effect	Parts of image will be blurred making the scene look like a miniature scale model. It is recommended to apply this effect on images captured from a high angle to simulate the miniature effect.
Fisheye Lens	Applies a simulated fisheye lens effect.
Cross Process	Heightens a certain tone and increases contrast to achieve a unique style.
Extreme Color	Increases color saturation and contrast.
Painting	Applies watercolor effect.
Astral	Applies starburst effect.
B&W	Converts colors to black and white.
Sepia	Applies sepia color tone effect.
Color Emphasis	Retains the color tone you choose while the rest of the scene becomes black and white.

Trimming

The Trim tool allows you to crop an image. This function is only applicable to photos captured in **4:3** image ratio (aspect ratio) and maintains that ratio. Trim is not available for VGA image sizes.

To trim an image:

1. Push the Playback button .
2. Push the ▲ or ▼ keys to scroll and select the image you want to trim.
3. Push the **Menu** button to launch the Playback menu.
4. Select **Trimming**. The Trim screen layout is displayed on the LCD monitor.
5. Push the ► key to zoom in on the image and ◀ to zoom out.
6. Push **OK** button to switch to the Move mode and use the 4-way navigation controls to move around the image.



No.	Description
1	Enlarged image
2	Move mode Switch
3	Current zoom magnification.
4	Image area
5	The approximate location of the trimmed area

7. Push the **Menu** button and a confirmation menu appears.
8. Select **Yes** to save changes as a new file or **Cancel** to go back to the Playback Menu without saving changes.

Resize

Allows you to create a smaller copy of the original image. Smaller copies are ideal for emailing and sharing photos where file size limitations may apply. This function is only applicable to photos captured in **4:3** image ratio (aspect ratio). The resized image is saved as a new file, so the original file is maintained without changes.

To resize an image:

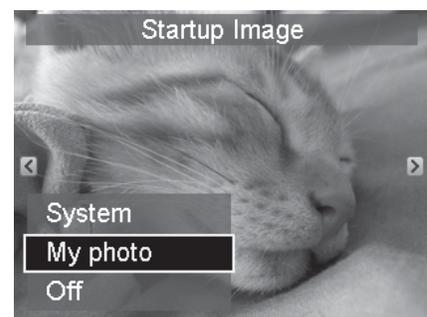
1. Push the **Playback button** .
2. Use the ▲ or ▼ keys to scroll and select an image to resize.
3. Push the **Menu** button to launch the Playback menu.
4. Select **Resize**. The Resize submenu is displayed on the LCD monitor.
5. Select size among: 640 (640x480), 320 (320x240), and 160(160x120).
6. After selecting size, a menu selection appears.
7. Push the **OK** button to save/cancel changes.
8. The resized image is saved as a new photo.



Startup Image

You can change the image that appears on the LCD monitor when powering on the camera to a any captured images saved in memory.

1. Push the **Playback button** .
2. Push the **Menu** button to launch the Playback menu.
3. Select **Startup Image** and the following menu selection appears.
 - **System:** Use camera default image.
 - **My Photo:** Use the ◀ or ▶ keys to scroll and select desired image.
 - **Off:** Disable the startup image.
4. Push the **OK** button to apply changes.



Note: The startup image will still be displayed startup even if the selected image was deleted.

DPOF

DPOF is the abbreviation for Digital Print Order Format, which allows you to embed printing information on your memory card. You can select the images to be printed and how many prints to make with the DPOF menu in the camera and insert the memory card to the card compatible printer. When the printer starts printing, it will read the embedded information on the memory card and print the specified images.

To set DPOF:

1. Push the **Playback button**  on the camera.
2. Push **Menu button** to launch the Playback Menu.
3. Select **DPOF**. The submenu appears. Available settings are as follows:
 - **Select Images:** Mark images in the memory card.
 - **Reset:** Reset all DPOF settings to initial default settings.



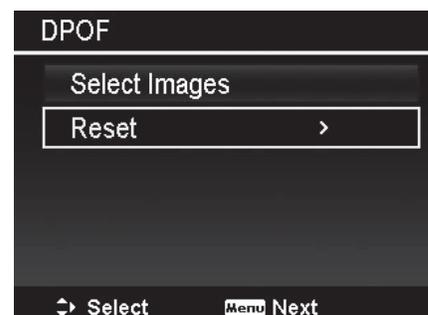
To set DPOF on images:

1. Select **Select Images** on the DPOF submenu.
2. Use the ◀ or ▶ keys to scroll and select images for DPOF printing.
3. When the desired image is highlighted, use the ▲ or ▼ to increase/decrease print quantity.
4. After selecting all the images you want to print, push the **Menu** button to launch the DPOF setting submenu and choose among the following options:
 - **Date:** Choose YES to print date on the image.
 - **Info:** Choose YES to print exposure data on the image.
 - **Done:** Saves the DPOF settings and goes back to Playback menu.



To reset DPOF:

1. Select **Reset** on the DPOF submenu.
2. The camera will remove all DPOF settings.



Copy

Use this feature to copy images from internal memory to an installed memory card or from memory card to internal memory.

To copy images:

1. Push the **Playback button** .
2. Push **Menu button** to launch the Playback Menu.
3. Select **Copy** and choose the location you want to copy images to:

- **Copy to Card:** Copies images saved in internal memory to the installed memory card.
- **Copy to camera:** Copies images save in the installed memory card to the camera's internal memory.

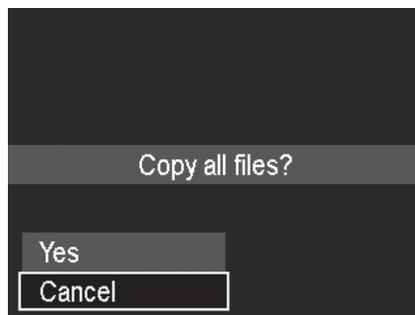
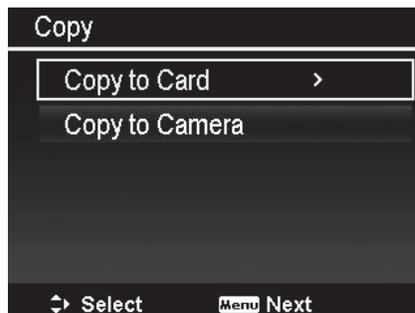
4. After choosing the copy location, select the images you want to copy. Choices are:
 - **Selected images:** Select the specific images you want to copy. See below for details on how to select images.
 - **All images.** Copy all images.

To copy selected images:

1. Select **Selected images** on the Copy submenu.
2. Use the ◀ or ▶ keys to scroll and select images to mark for Copying.
3. When the desired image is highlighted, use the ▲ or ▼ keys to mark/unmark the file for copying.
4. Push the **Menu** button and select **Yes** to start copying.

To copy all images:

1. Select **All images** on the Copy submenu.
2. Select **Yes** to start copying.



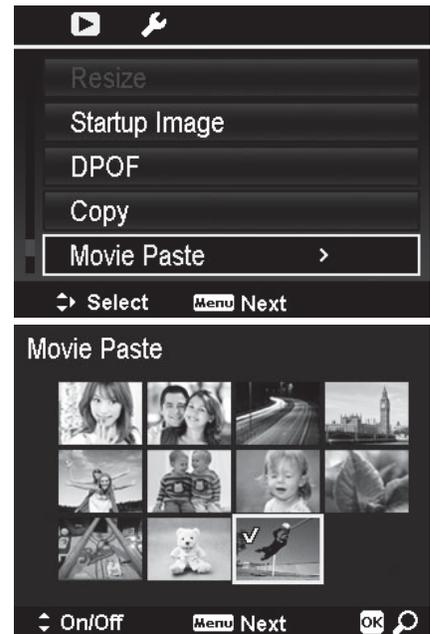
Note: The Copy function is not available when no memory card is inserted. The number of images you can copy from the card to internal memory is limited to the camera's available memory storage space.

Movie Paste

Use this feature to combine two videos into one video. The two videos you want to combine need to be of the same resolution (movie size) and frame rate (fps).

To combine two videos:

1. Push the **Playback button** .
2. Use the ▲ or ▼ keys to scroll and select the original video.
3. Push the **Menu** button to launch the Playback menu.
4. Select **Movie Paste**. The videos with the same specification as the original video are displayed on the LCD monitor.
5. Use the ◀ or ▶ keys to scroll and the ▲ or ▼ keys to mark/unmark the second video.
6. Push the **Menu** button and select **Yes** to combine the second video to the end of the original video.



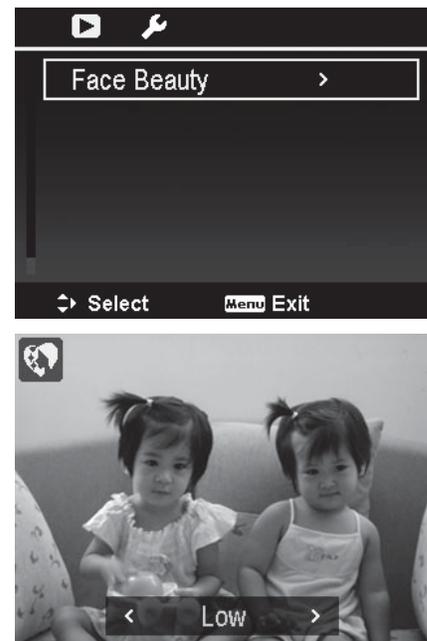
Note: The total length of the combined video cannot be over 30 minutes. After combining videos, the second video will no longer exist as a separate file.

Face Beauty

Use this feature to make skin appear softer and smoother. Only skin that is automatically detected by the camera can be enhanced. This function is only applicable to still images.

Images that are enhanced using the Face Beauty feature will be saved as a new image in addition to the original image.

Available settings are: **Off**, **Low**, **Normal** and **High**. The Low, Normal and High options determine the amount of enhancement applied to the image.



Using the Wireless function

The WiFi feature allows you to wirelessly download photos and videos saved on the camera to a smart phone or tablet running Google Android (5.0 or later) or Apple iOS (10 or later) operating systems. The wireless feature also allows you to operate the camera remotely and automatically download photos/videos as they are captured while connected to a smart device.

Before using the Wireless function, download and install the "Link123 Plus"  app to your smart devices. The free app is available in Google Play (Android) or Apple Store (iOS).

Follow the below steps to establish a wireless connection between the camera and your smart device. **DO NOT** push the WiFi button on the camera. The purpose of the WiFi button is explained on page 77.

Establishing a wireless connection:

1. Power on the camera.
2. Launch the **Link123 Plus** App on your smart device.
3. Select "Wake up" on your smart device to display a list of cameras within wireless range. The list will include one or more cameras starting with "**abcam**" and followed by 7 digits corresponding to the camera's serial #.
4. Select your camera from the list [the one that matches your camera's serial #.]
5. After waking up the camera, the camera will display a message, "Waiting for the mobile phone connection."
6. Go to the WiFi Settings menu on your smart device and select your camera from the list of available hot spots. Again, your camera name (SSID) will be displayed as "abcam" followed by 7 digits corresponding to your camera's serial #.
7. Enter the default password "12345678". The password and camera name (SSID) may be changed later on.
8. Close the WiFi settings menu and launch the Link 123 Plus app again.
9. Select OK on your smart device.

Note: If a wireless connection was successfully established, you will see a live view from the camera displayed on your smart device. If connection was not successful, reboot your camera and start over at step 1.

Some Android smart phones and tablets will continue searching for another wireless connection after you established WiFi connection with the camera. The result is the wireless connection between your phone and camera will be dropped. The solution is to temporarily turn off your phone's data or put the phone in airplane mode and then turn on WiFi. Both of these methods result in your phone's data turned off and WiFi turned on.

If you have installed a VPN [virtual private network] app on your smart phone or tablet, disable the VPN before attempting to establish wireless connection with the DC2000 camera. The VPN app may interfere with the ability to wirelessly connect to the cameras.

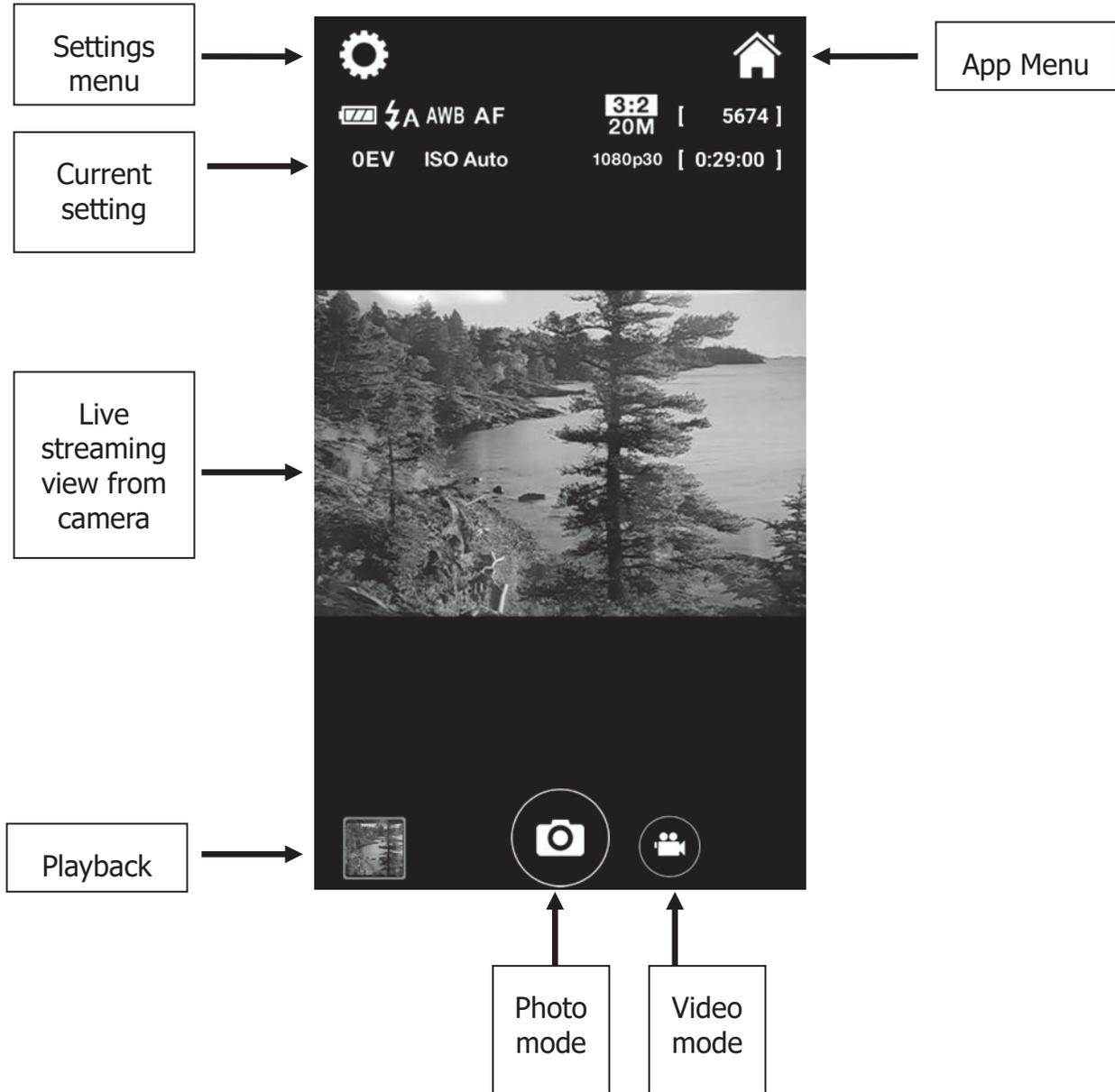
If you are still unable to establish a wireless connection, please visit the SeaLife website troubleshooting section at www.sealife-cameras.com/dc2000-troubleshooting-and-technical-updates.

Using the Link 123 Plus App

The following information describes how to use the Link 123 Plus app features.

Remote Mode

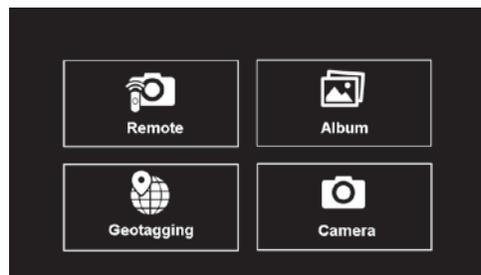
After establishing a wireless connection and launching the Link 123 Plus app, the app will be in Remote mode and display the following live view screen:



Item	Description
Settings menu	Adjust camera settings remotely. Access Network settings to change camera name (SSID) and password.
App menu	Includes four app operating modes: Remote, Albums, Geotagging and Camera modes. See "App menu" on page 79 for more details.
Current Settings	Displays the current camera settings being used.
Live view	Shows live streaming view from camera.
Playback	Access pictures and videos saved on camera or on smart device.
Photo mode	Tap to take a remote picture.
Video mode	Tap to start video recording.

App Menu

Tapping the App menu icon will open the following menu with four operating modes:

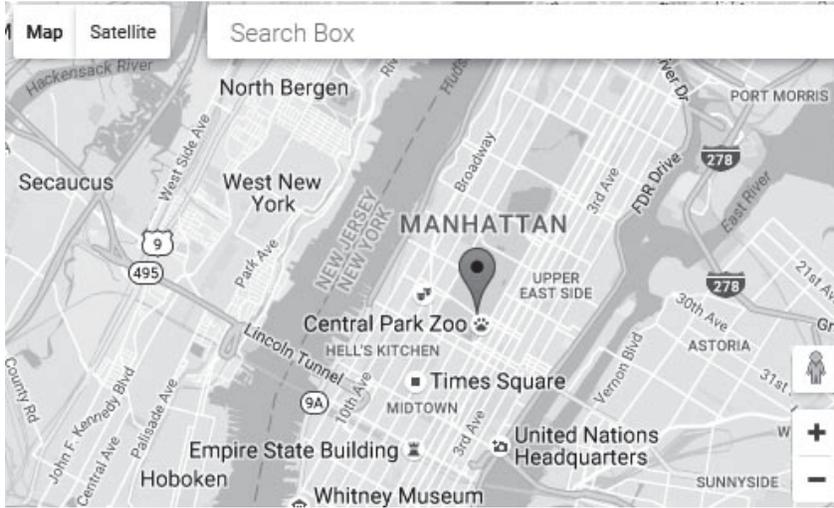


Item	Description
Remote	Allows you to use your smart device to control the camera remotely for taking pictures, recording video or changing the camera settings.
Album	View and download pictures/videos saved on the camera to your smart device.
Geotagging	Use this feature to record and upload GPS data from your smart device to your camera. See "Geotagging" on page 80 for more details.
Camera	Allows you to use all camera functions and operations while being connected to a smart device. Push the WiFi button on the camera to automatically download the captured image to your smart device. See "Camera Mode" on page 82 for more details.

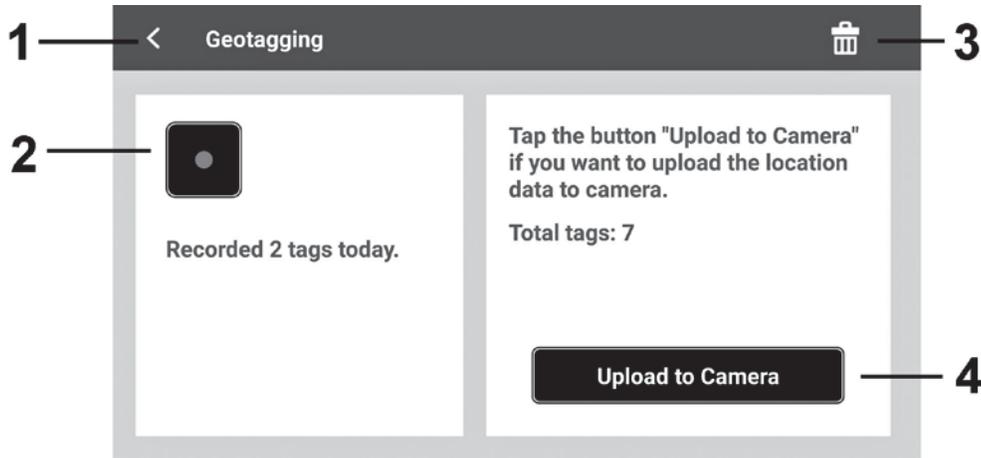
Geotagging



The app Geotagging function is useful for knowing the precise location of where a photo was taken. This feature is only applicable on land pictures and will not work underwater.



The Link123 Plus app can record GPS latitude/longitude coordinates from your smart device and upload the data to your camera. Once uploaded, the camera will automatically embed the data into the corresponding images by matching the data/time stamp of the recorded GPS coordinate (called a "GeoTag") with the date/time stamp of the image saved on the camera.



No.	Item	Description
1	Return key	Tap this key to return to the App Menu.
2	RECORD & STOP key	Tap this key to start or stop recording the GPS data.
3	Delete key	Tap this key to clear the recorded GPS data.
4	Upload key	Tap this key to upload the GPS data to Camera. The icon will be disabled during GPS recording or no GPS data is recorded.

Recording GeoTags using the app

1. Tap the REC key  to start the GPS recording. The REC key will turn into the STOP key  while recording GeoTags.
2. One GeoTag will be recorded every 1 minute. You may continue recording tags for as long as you want.
3. While recording tags, take one or more pictures using the app Remote mode or Camera mode.
4. Tap the STOP key () to stop recording GeoTags. The app will also stop recording GeoTags **if** you close the App, turn off GPS from the smart device or power off the smart device.

Note: Today's tag quantity will be displayed below the REC/STOP key and the total quantity of tags will also be displayed on screen.

Uploading GeoTags from app to the camera

1. After recording GeoTags, tap the "Upload to Camera" key to upload all the tags to the camera.
2. After uploading is complete, the camera will compare the tags with the photos saved in memory and match the GeoTag with the corresponding photo based on the date/time stamp. The following chart demonstrates how GeoTags are matched with the photos.

Time the photo was taken (H:MM:SS)	Time the GeoTag was recorded (H:MM)
8:59:59	9:00
9:00:00 ←	9:01
9:00:15 ←	9:02
9:01:10 ←	9:03
9:01:20 ←	9:04 (No GeoTag recorded)
9:01:59 ←	9:05 (No GeoTag recorded)
9:05:30	9:06 (No GeoTag recorded)
9:06:05	9:07
9:07:15 ←	9:08
9:10:00	9:09

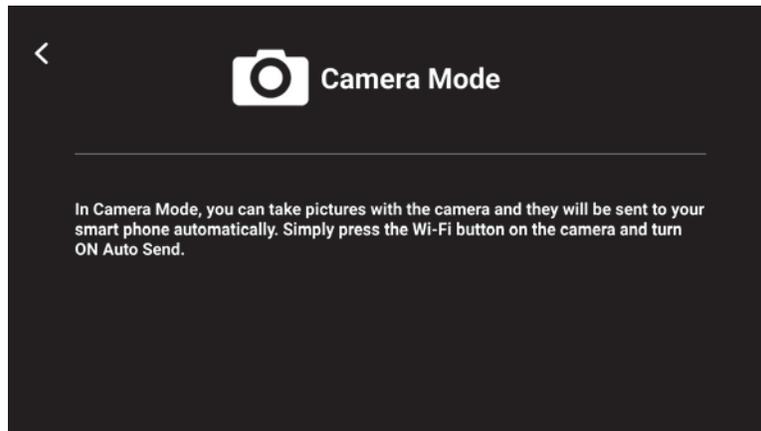
Once the GeoTags are embedded into the photos, you can use any geotagging software to see the location of where the photo was taken. For example, www.geoimgr.com is a free online software that allows you to upload photos and see the location on a map.

Note: Wireless connection between the app and camera will stop when the camera is comparing the GeoTags with the photos saved in memory. GeoTags are recording in GPX format, which includes latitude, longitude, altitude and time. The app can record up to 30 calendar days of GeoTags. After 30 calendar days are recorded, new GeoTag recordings will overwrite the oldest GeoTags.

Camera Mode

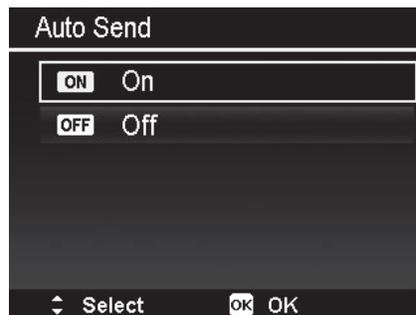


Camera mode allows you to operate the camera manually while maintaining a wireless connection to your smart device. In Camera mode, you can **Auto Send** and **Quick Send** photos by pushing the WiFi button on the camera, which automatically downloads captured images to your smart device. To enter Camera mode, tap the Camera icon in the App menu.



How to use **Auto Send**:

- 1) Initiate wireless connection between smart device and camera.
- 2) In App menu select Camera Mode
- 3) Push the wireless button  on the camera to display the **Auto Send** menu.



- 4) Use the ▲ key to select On and push **OK** button.
- 5) Now, every picture you take will be automatically sent to your smart device. This feature is not available for some shootings, such as Video recording (Including PIV), Time Lapse recording, Continuous Shooting or GIF capture.
- 6) To exit Auto Send, push the wireless button on the camera and select OFF.

How to use **Quick Send**:

- 1) Initiate wireless connection between smart device and camera.

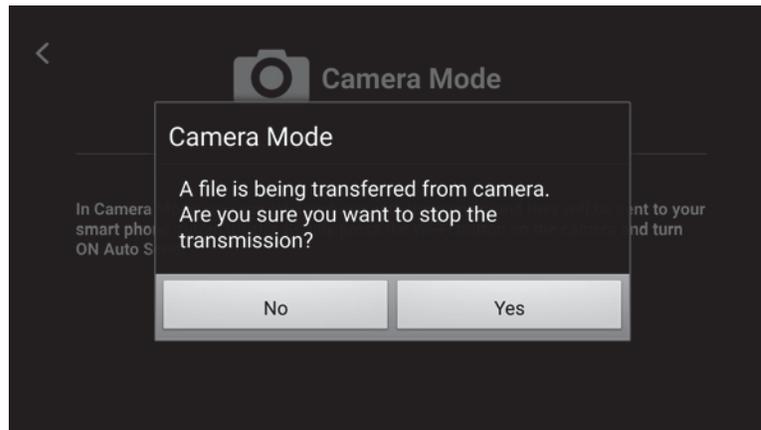
- 2) In App menu select Camera Mode
- 3) Push the Playback button  on the camera to enter Playback mode.
- 4) Scroll through pictures in Single View mode and locate the picture you want to Quick Send.
- 5) Push the Wireless button  on the camera to display Quick Send icon on the bottom left of the screen.



- 6) Push the OK button and the picture will be automatically sent to your smart device.
- 7) Repeat steps 4 to 6 for every picture or video you want to Quick Send to your smart device.

Notes:

- Quick Send is not available for video clips with file size larger than 1024 MB, GIF files and Voice memos.
- If you exit Camera Mode and enter Remote or Album mode during **Auto Send** or **Quick Send** file transfer, the following message will appear. Tap **No** to return to Camera Mode or **Yes** to stop file transfer.



- GeoTags may be recorded while in Camera mode.



Album Mode

In Album mode, you can view pictures/video saved on the camera and download them to your smart device. Downloaded files may be saved to your camera roll using the "Share" feature. Files may also be shared using email, text or uploaded to social media apps installed on your smart device.



Camera Gallery screen



Phone Gallery screen

No.	Item	Description
1	Return key	Tap this key to return to Remote mode.
2	File location	Tap this key and select between Camera Gallery (files saved on camera) or Phone Gallery (files saved on smart device).
3	Download key	Tap this key to select and download pictures/videos from the camera to your smart device.
4	Delete key	Tap this key to delete pictures/videos from the camera (camera gallery or smart device (phone gallery)).
5	Share Key	Tap this key to share selected files via email and text or upload to social media apps installed on your smart device.

Notes: You can only view thumbnails in app playback (phone or camera galleries). No full size, except videos. You can play videos in phone gallery but not camera gallery. Tap the video clip in Phone Gallery to play it. RAW and GIF files cannot be wirelessly downloaded. Panorama files may be downloaded to app Phone Gallery but may not be saved to your smart device camera roll. You must first disconnect the camera from smart device before files can be shared. Pictures and videos clips cannot be shared at the same time - Select and share them separately. Keep in mind that each Social Media app has different file size/number limitations.

About downloading videos to Android devices: The downloaded videos will not appear in the Android device Gallery app; however, the files are saved to the "My Files" app included with your smartphone/tablet. Here's where the downloaded video files are saved. This only applies to Android devices and not iPhones/iPads.

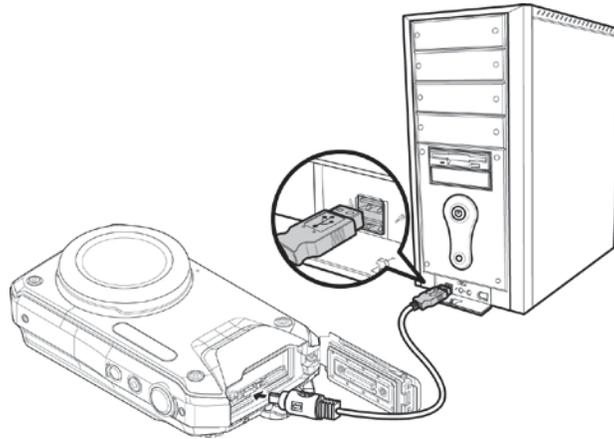
1. Open your "My Files" app. My Files app is located in your device App folder.
2. Select "Internal Storage"
3. Select "DCIM"
4. Select "Link123 Plus". Downloaded videos will be saved here.

You can add a shortcut to your home screen so video files are only one click away. There are many free "file browser apps" available in the Google Playstore. For example, the "ES File Explorer" app is one that we have tested and works well.

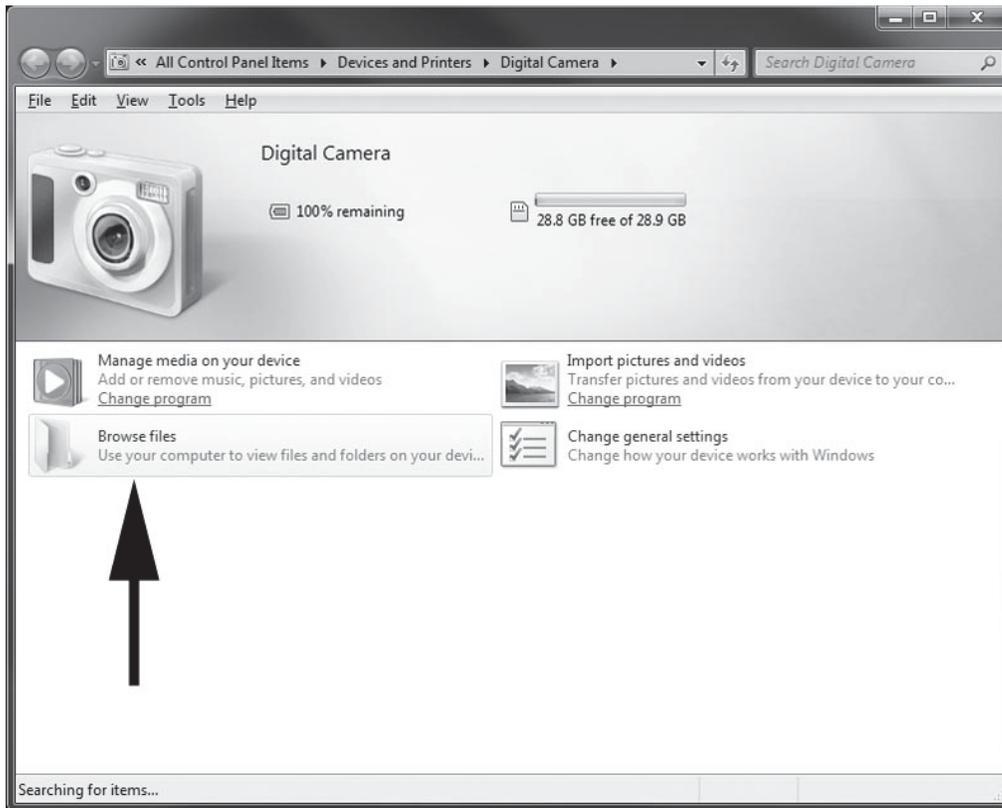
Connecting the Camera to a computer or printer

Follow these steps to download pictures and video clips from the camera to your Windows or Apple computer.

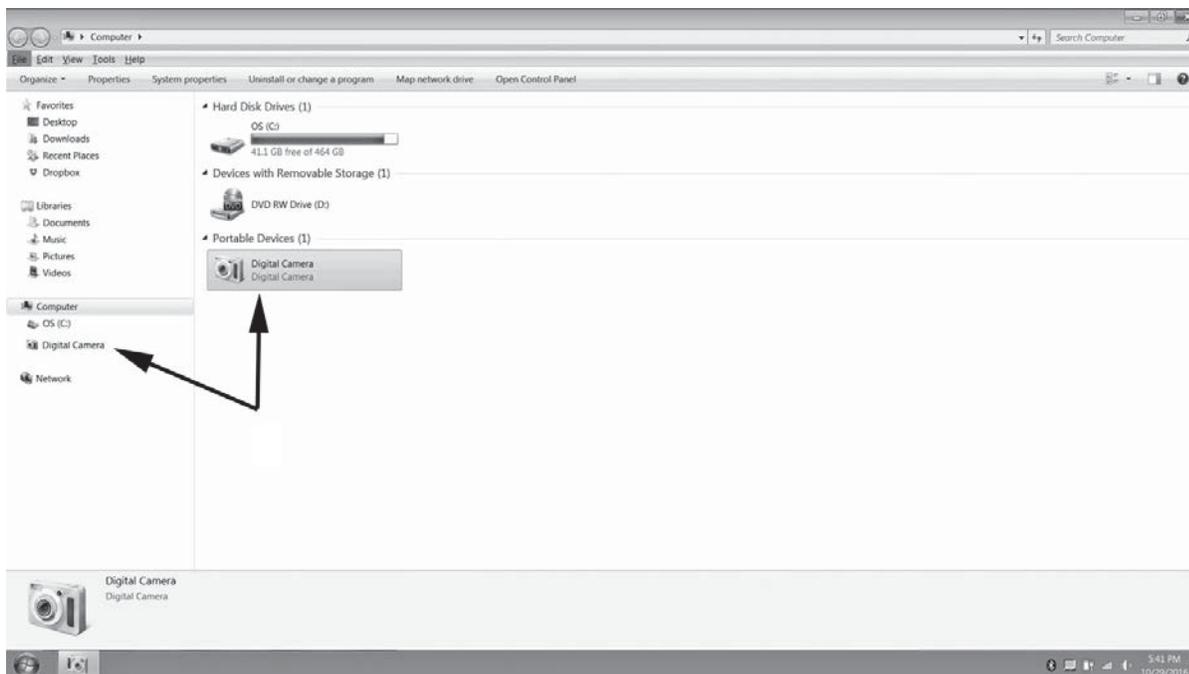
1. Connect one end of the USB cable to the USB port on your computer and connect the other end to the USB jack on the camera.



2. Push and hold power button for one second to turn on the camera.
3. The camera's LCD monitor will show a "**Connecting...**" message while the computer automatically detects the camera connection. The LCD monitor will turn off after the connection is established.
4. On Windows computers, a device notification window will appear, like this:

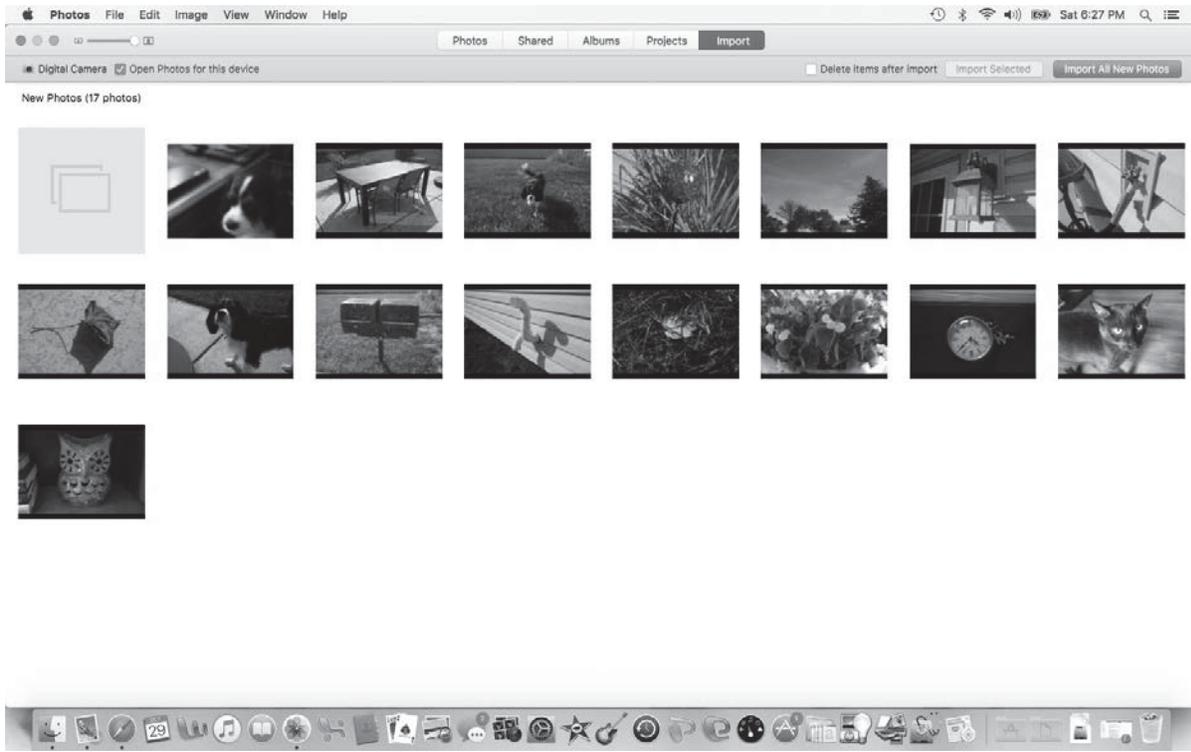


5. Double-click "Browse files" and your computer will open Windows Explorer file browser.
6. Click the "Digital Camera" drive.



7. Picture/video files are located in the DCIM folder. The DCIM folder will contain a subfolder called "100DICAM". The camera will automatically create a new subfolder called "101DICAM" if the first folder reaches 9999 files.

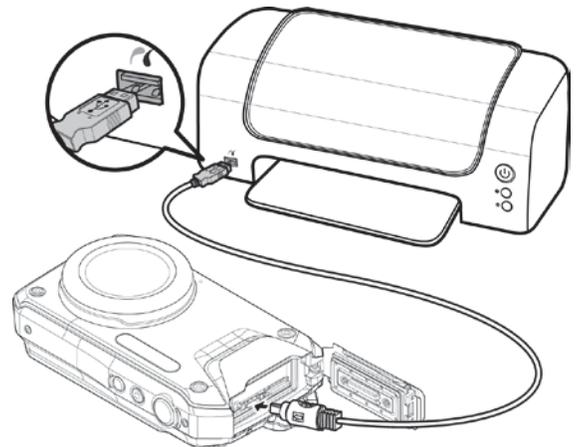
8. On Apple computers, open the Photos app to view and import pictures:



How to print images using a PictBridge compatible Printer

Follow these steps on how to connect the camera to a **PictBridge** compatible printer and print images.

1. Turn on your printer.
2. Connect one end of the USB cable to the printer's USB port and the other end to the camera's USB jack.
3. Print Mode menu appears on the screen after the connection between a printer and your camera is established. See below for details about setting the Print Mode Menu.
4. Enter the desired print mode and print the selected images.



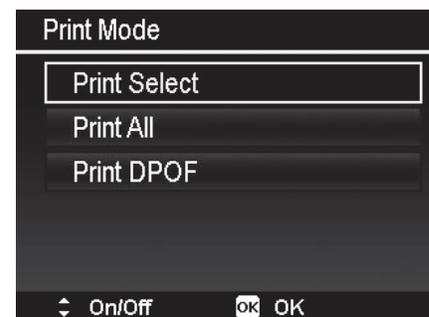
For details on the following page "Setting the Print Mode Menu".

Setting the Print Mode Menu

The Print Mode menu will appear on the camera screen after the connection between a printer and your camera is established.

Print Mode includes three major settings:

- **Print Select.** You select the image you want to print.
- **Print All.** Prints all images.
- **Print DPOF.** Prints all images that have been set to DPOF. See page 88 for more information about setting DPOF.

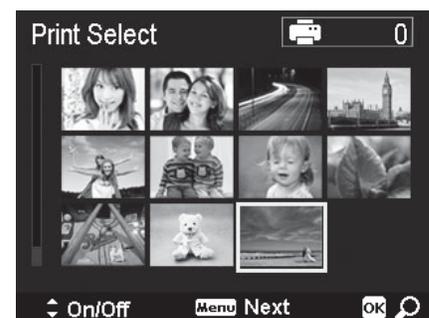


To set Print Select

1. Use the ◀ or ▶ keys to scroll and select an image for printing.
2. Specify the number of copies. Use the ▲ or ▼ key to increase/decrease number.
3. Push the **Menu** button to enter printer settings.

To set Print All and Print DPOF

Repeat the same steps 1 to 2, then enter printer settings.

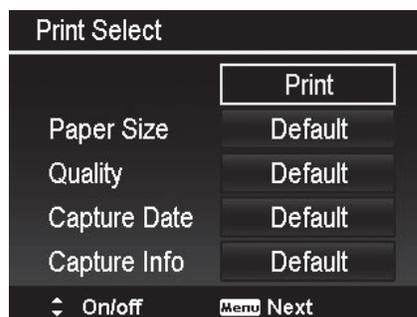


To set Printer Settings

1. Use the ▲ or ▼ key to specify a print option.
2. Modify paper size, quality, date and info by the ◀ or ▶ keys. Available setting:
 - Paper size: Default/A4/4"x6"
 - Quality: Default/Fine/Normal
 - Capture Date: Yes/No
 - Capture Info: Yes/No
3. Select **Print** on the screen for printing.
Or **Cancel** to go back Print Mode.

Start Printing

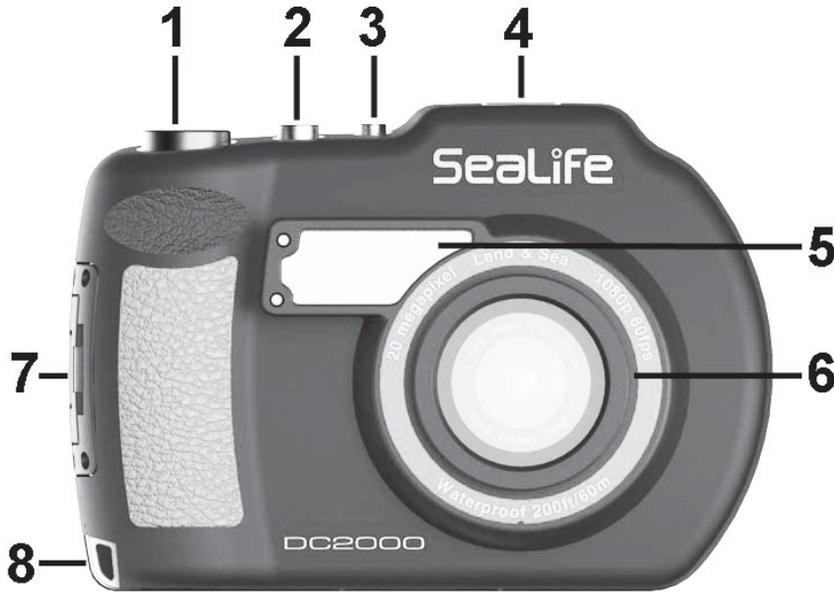
- LCD monitor appears "Now printing...".
- Push **Menu** button to stop printing anytime.



Underwater Housing Instructions

Important: Please carefully read and understand these instructions before using camera and housing underwater.

Front view



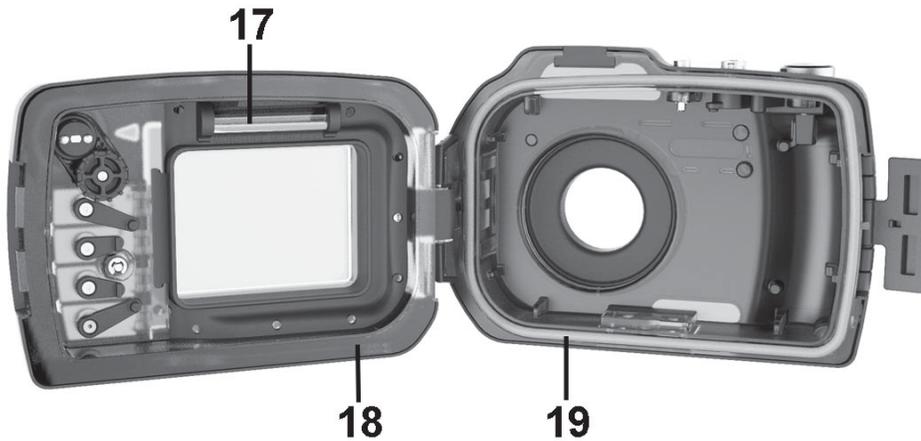
- 1 – Shutter button
- 2 – Video start/stop button
- 3 – Power on/off button
- 4 – Cold shoe mount
- 5 – Flash with built-in diffuser
- 6 – Lens port ring
(for attaching wide angle lenses)
- 7 – Closing latch
- 8 – Strap connector

Back view



- 9 – Mode dial
- 10 – Playback key
- 11 – Focus / Up key
- 12 – Flash / Down key
- 13 – Menu / Back Key
- 14 – OK button
- 15 – Tripod mount (1/4-20)
- 16 – LCD Display Monitor

Inside view



17 – Moisture Muncher pocket. Insert one SL911 Moisture Muncher capsule here.

18 – O-ring contact surface. Presses against the O-ring when door is closed to form waterproof seal.

19 – Silicone O-ring (Item SL74017) seated into groove

Important Care and Maintenance information

Every SeaLife housing is inspected for quality, including a 200ft (60m) pressure chamber test to ensure a waterproof seal. It is your responsibility to properly care for housing and maintain the O-ring sealing area. Carefully follow these important O-ring care instructions. Not following these care instructions may cause the waterproof housing to leak and void your warranty.

- The underwater housing is depth tested to 200ft /60m. Exceeding this depth may cause the housing to flood and may result in damaging the underwater housing and inner camera.
- Do not use any household cleaners, soaps, detergents or chemicals to clean the inner camera or underwater housing. Chemicals may cause negative reaction with the plastic materials.
- Replace O-ring every year to ensure proper seal. Only use official SeaLife O-ring designed for the DC2000 (Item # SL74017). Replacement O-rings are available at your local authorized SeaLife dealer, or online at www.sealifepartsdirect.com (USA Only).
- Do not expose the inner camera or housing to direct sunlight for prolonged periods of time. Keep camera and housing in shaded area or under a towel to prevent it from overheating.
- Do not disassemble or attempt to repair the camera or housing as this will void your warranty. Contact your local authorized SeaLife dealer or the SeaLife Service Center in your country for repairs.
- The camera and housing combination are positively buoyant by 14 grams. Attach included strap to your wrist or buoyancy control device (BCD) when using the camera and housing in or near water.
- Store camera and housing only after careful cleaning and when totally dry.
- Do not let any moisture or dirt get inside housing when opening. This may result in fogging when using the camera underwater.
- Avoid opening housing in wet, sandy or humid environments. It is recommended to open and load the housing in dry cool air, such as inside an air conditioned room. This will prevent water or humidity from being trapped inside the housing, which may cause fogging during underwater use.
- Avoid getting sunscreen or suntan oil on the camera or housing, as it may cause discoloration of the surface. If any oil gets on the camera or housing, clean it with moistened soft cloth.
- Store housing at room temperature in a clean and dry place.

- Do not expose housing to direct sunlight for prolonged periods of time.
- Do not store housing in extreme high temperatures, such as the trunk of your car.
- Keep the housing unlatched when storing for more than 3 months.

Attaching wrist strap to DC2000 underwater housing

The housing wrist strap included with the DC2000 UW camera attaches to the housing as shown below. Note: The clip is used for attaching the camera to your BCD (Buoyancy Control Device) D-ring.



Insert looped end of nylon cord through the housing strap connector.



Feed strap through looped end and pull tight.



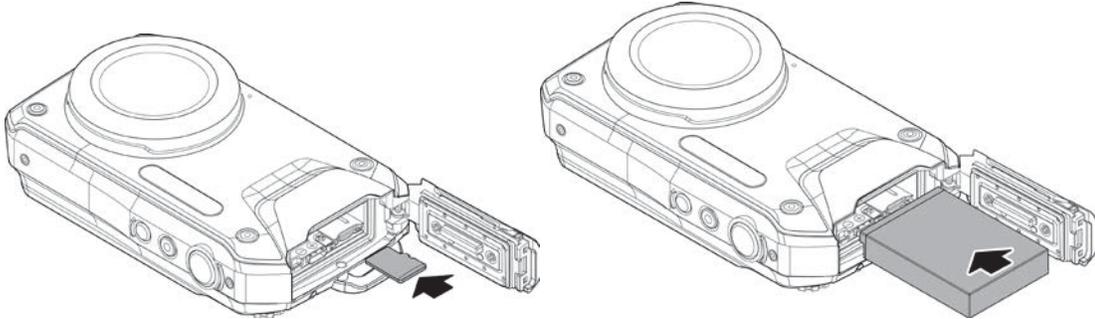
DO NOT attach clip directly to camera, as this can result in the clip breaking.

Preparing the camera and housing for underwater use

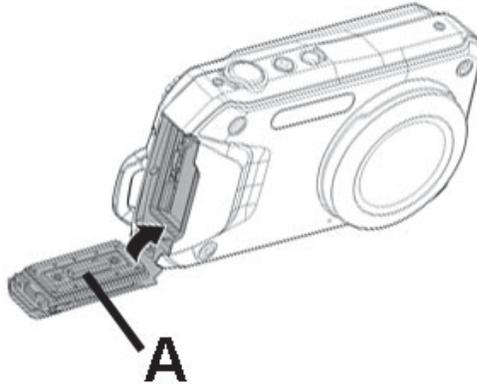
Before your dive, follow these important steps to prepare the inner camera and housing for underwater use.

Preparing the inner camera

- 1) Insert memory card into camera and fully charge the battery.



- 2) Clean the rubber seal (A) located inside the battery door using a slightly dampened lint-free cotton cloth. Allow the seal to air dry for a minute and close the waterproof door on the camera.

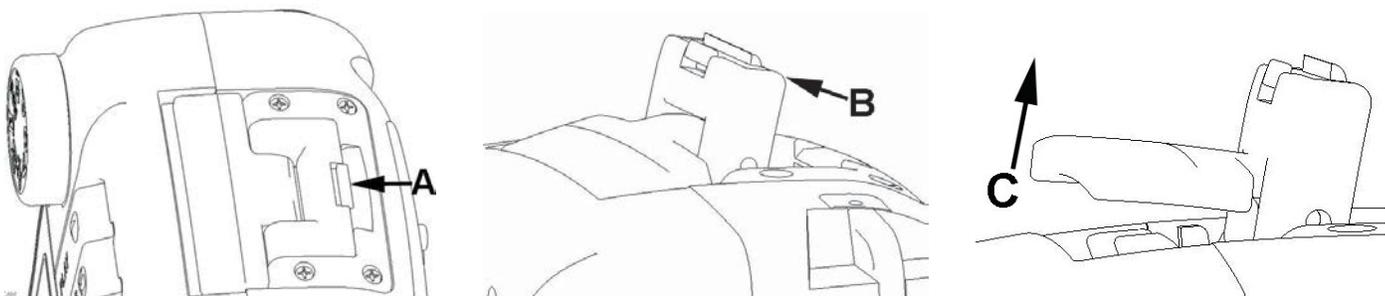


- 3) Clean the camera lens using a clean, lint-free cotton cloth.
- 4) Remove the strap from the inner camera. The strap may interfere with the waterproof seal.
- 5) Set the mode dial to underwater mode .
- 6) Push the menu button and select the appropriate underwater scene mode. See page 42 for information about setting the correct underwater scene mode.

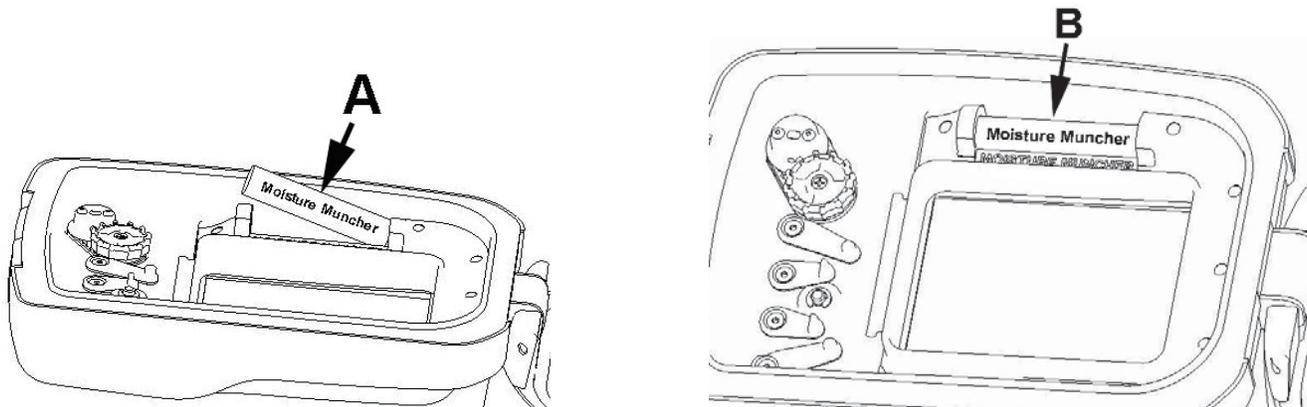
Preparing the underwater housing

Important: Whenever possible, load the camera into the housing in a dry environment such as an air-conditioned room. This will help to avoid trapping humid air inside the sealed housing, which may cause the housing lens port to fog underwater. The Moisture Muncher capsule will absorb humid air trapped in the housing, but that takes time depending on how humid the environment is, so try to avoid trapping moisture inside the housing in the first place.

- 1) Open the underwater housing door by pushing in the locking tab (A) and pulling up on the latch (B) until it releases from the housing door (C). Squeeze the housing closed to help release the latch from the door.



- 2) Inspect O-ring and O-ring contact surfaces for damage (cuts, scratches, tears, cracks, dents and any other imperfections.) Replace O-ring or have waterproof housing serviced if the O-ring or O-ring contact surfaces become damaged. Do not use underwater housing if O-ring or O-ring contact surfaces are damaged. See page 97 for information on replacing the O-ring
- 3) Clean the O-ring and O-ring contact surfaces using a dampened, lint-free cotton cloth to remove sand, hair and other debris. Avoid stretching the O-ring. Do not lubricate the O-ring.
- 4) Make sure the inside/outside of the glass lens port is clean. If dirty, clean the lens using a lint-free cotton cloth. Use lens cleaner or dampened clothe to remove stubborn stains.
- 5) Insert one Moisture Muncher desiccant capsule into the rubber pocket on the inside of the housing door. Insert one end of the capsule (A) and push down until the capsule is securely held in place.



- 6) Set the Mode Dial of the inner camera and housing to the same mode, so the two are in synch. Note: If the mode dials are not set to the same mode when sealing the housing, it is not a major problem because the inner camera will display the current mode on the LCD monitor.
- 7) Insert the camera [with camera strap removed] into the housing.
- 8) Make sure there are no obstructions that prevent housing from closing or sealing properly. Close the housing door by attaching the latch mechanism to the door and push down on the latch until locking tab "clicks" into place.
- 9) Take a test picture to check that the housing shutter button is activating the inner camera shutter button. Also, rotate the mode dial to check that the housing and camera modes are in synch.

Before Entering Water

Most dive operations will have a fresh water tub used exclusively for underwater cameras. Use this tub to perform a quick waterproof leak test before entering the water.

- 1) Hold housing underwater for about 15 seconds with the lens aiming upwards. Lift the housing out of the water keeping the lens pointing up and look at LCD display window for any water drops.
- 2) If no leaks are detected, hold the camera underwater for about 2 minutes and inspect for water drops.

Note: If you detect any leaks, carefully dry and open the housing and inspect the O-ring seal in accordance with the instructions on page 97.

Entering/exiting the water

Important: The top priority is to always obey dive safety rules.

- 1) Do not jump into the water with the camera in your hand. Have someone hand it to you after you have entered the water.
- 2) Same applies when exiting the water – hand the camera up to someone and then exit the water.
- 3) Immediately place the sealed housing in fresh water, so sea water drops do not dry on the housing, which may cause water stains and/or salt crystals to form.

After using the housing underwater

- Soak and rinse the sealed waterproof housing in fresh water for about 20 minutes after underwater use or if the housing becomes dirty.
- Push each button several times and rotate mode dial to clean out any trapped saltwater, sand or dirt.
- Use clean, soft cloth to dry housing. Make sure that you and the waterproof housing are completely dry before opening the waterproof door or changing the batteries or the memory card.
- Store camera and housing only after careful cleaning and when totally dry.
- Keep the housing unlatched when storing for more than 3 months.

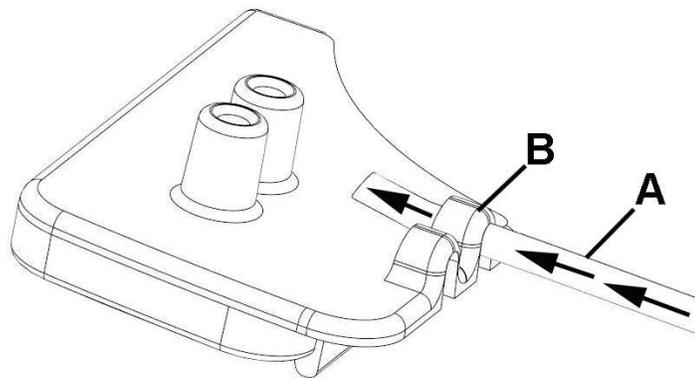
Installing Flash Link optical cable adapter

The DC2000 includes a Flash Link adapter used for making optical cable connection between the underwater housing and one or two Sea Dragon Digital Flashes (optional accessory). The Sea Dragon Flash includes the optical cable. If you are not using a Sea Dragon flash accessory, the Flash Link adapter is not needed. Please contact your local authorized SeaLife dealer or refer to www.sealife-cameras.com for more information about the Sea Dragon Flash accessory.

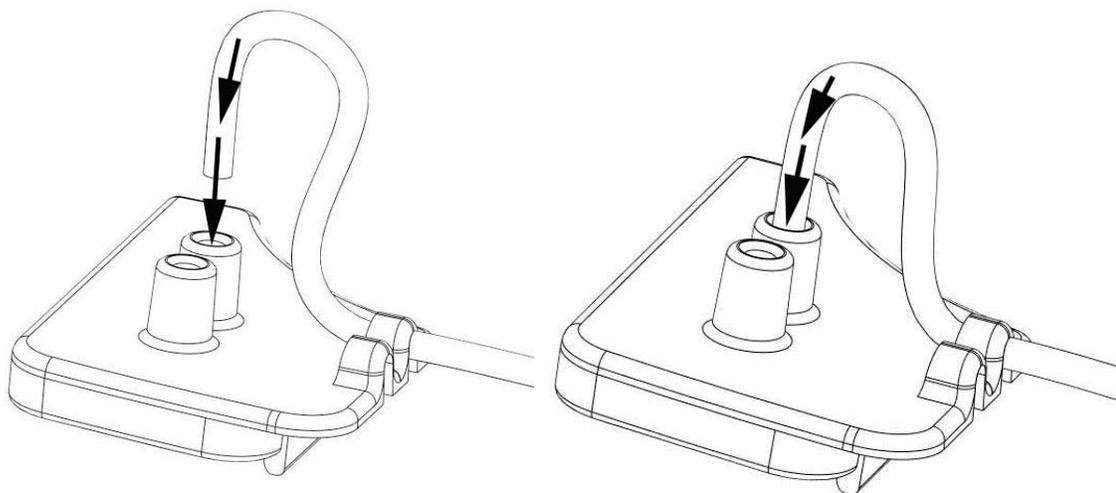


How to setup Flash Link adapter and attach to the housing

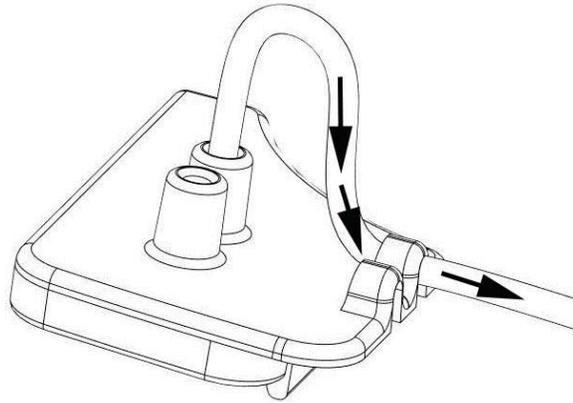
- 1) Insert the non-coiled end of the optical cable (A) through one of the grabber holes of the Flash Link adapter (B).



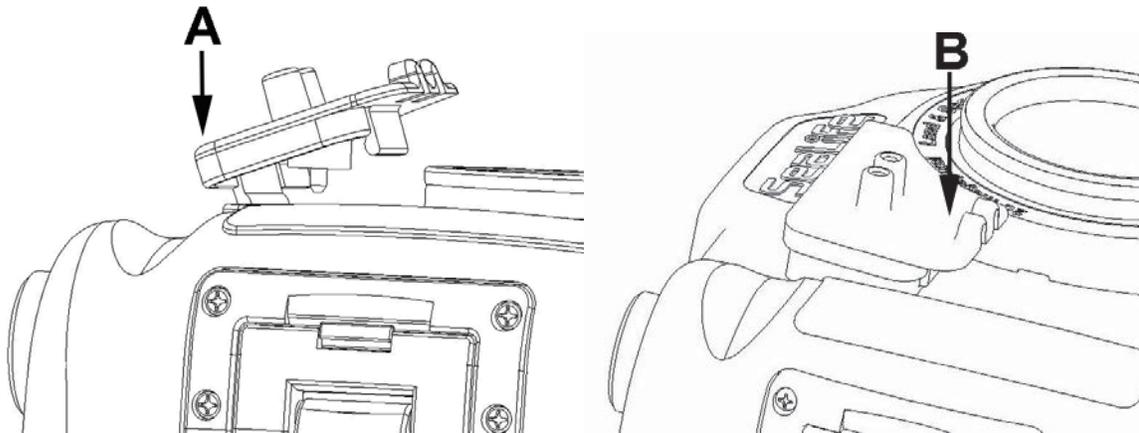
- 2) Pull about 2" (5cm) of the optical cable through the grabber hole and insert the end of the cable into the other hole as shown below. Push cable end down into the hole until it comes to a stop.



- 3) Pull the other end of the camera to remove some of the extra slack, leaving about 1" of cable bend as shown below. It is normal for thin layer of cable sheathing to be scratched off during this procedure.



- 4) Attach the Flash Link adapter onto the top of the diffuser (A). Then push down on the bottom of the adapter (B) until it locks into the diffuser.



Note: Above diagram shows side view of adapter without optical cable for clearer description.

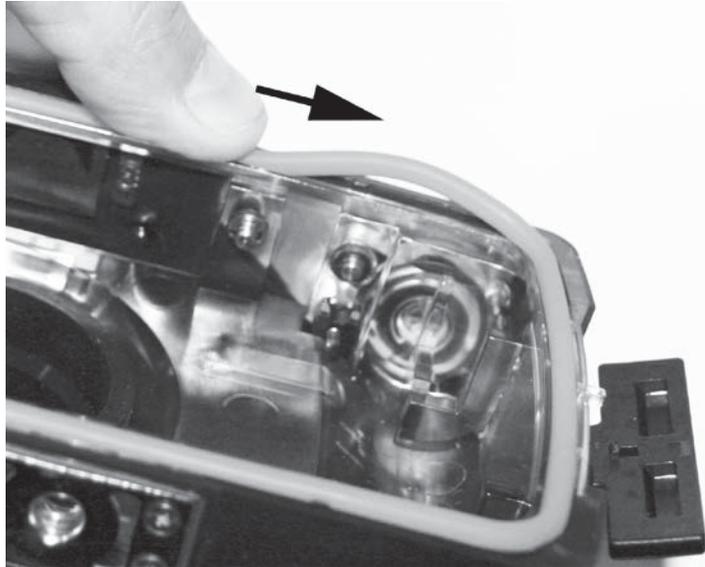
How to replace the housing O-ring

Replace O-ring or have waterproof housing serviced if the O-ring or O-ring contact surfaces become damaged. The O-ring should be replaced every year to ensure proper seal. Only use official SeaLife O-ring designed for the DC2000 (Item # SL7417). Replacement O-rings are available at your local authorized SeaLife dealer, or online at www.sealifepartsdirect.com (USA Only).

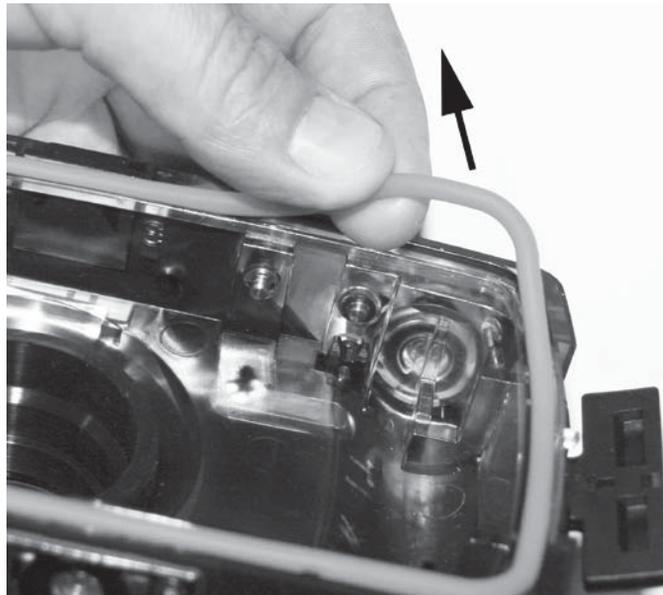
Removing the O-ring

Important: Do not use tools or sharp objects to remove the O-ring to avoid damaging the soft silicone material.

- 1) Push the O-ring along its groove until it lifts. Do not use tools or sharp objects to remove the O-ring to avoid damaging the soft silicone material.



- 2) Gently pull the O-ring out of its groove.



Inserting the O-ring

Important: The O-ring and O-ring groove must be completely clean before installing the O-ring. Use a dampened, lint-free cotton cloth. A micro-fiber cleaning cloth used for cleaning eyeglasses is ideal.

- 1) Lay the O-ring over the O-ring groove making sure the O-ring is not twisted. Orient the O-ring with the more rounded corners on the hinge side of the housing, as shown below.



- 2) Gently push the O-ring down into the groove. The O-ring should be evenly seated in the groove.
- 3) Close the housing door to firmly seat O-ring and open housing again to inspect that O-ring is completely seated into groove. Be careful that there are no obstructions, like the wrist strap, trapped between the housing door and O-ring.

Great Underwater Pictures Made Easy

There are many differences between taking pictures underwater compared to taking pictures on land. The following are some helpful tips on taking great pictures underwater. A more comprehensive Great Picture Made Easy tutorial is available online at www.sealife-cameras.com/great-pictures-made-easy

Crystal Clear water

Crystal Clear water is essential for taking great underwater pictures. Tiny particles suspended in the water cause low visibility and diminishes picture quality. Limit your shooting distance to 1/10 of the water visibility. For example, if the visibility is 40 feet (12 m), keep your shooting distance to within 4 feet (1.2m). Avoid stirring up the sea floor with your fins.

When using a Sea Dragon Flash and/or photo-video lighting accessory in low visibility water, these suspended particles may cause small spots to appear in your picture (known as "backscatter"). Backscatter can be minimized by moving the flashhead or lighthead farther away from the camera lens. When using the camera's onboard flash, keep your shooting distance within 4" to 12" (10 to 30cm)

Stay close to the subject

The ideal shooting distance for sharp colorful pictures is within 6ft (2m) shooting distance, and closer is better. The less water there is between you and the subject, the better the picture results. When using an external flash or photo-video lighting accessory, keep in mind that light does not travel very far underwater, so the closer you are to your subject the more colorful the pictures will be.

Control your buoyancy and move calmly

It's not easy to take great pictures when your buoyancy is not controlled. Learning how to adjust and maintain proper buoyancy will greatly improve your picture results.

Look around for great picture opportunities. Position yourself at the best angle and neutralize your buoyancy. Use the LCD monitor to perfectly frame your subject, check your shooting distance and keep the camera steady.

Be calm and patient: Sometimes you have to wait a little bit so the fish that were frightened away, come back. Don't chase the fish, let the fish come to you. Always be in control of your buoyancy before taking pictures and observe all safe-diving rules.

Keep shooting

Shoot several pictures of the same subject and keep only the best shots. You don't want to find out later that the only picture you took of that elusive frogfish was out of focus or over-exposed. Also, try shooting the same subject from different angles and distances to produce a well-composed picture.

Don't worry about taking bad pictures. One of the best ways to learn UW photography is from making mistakes. When you take a bad picture, try to figure out what went wrong and avoid that in the future. Just keep shooting and try different techniques - your UW photography skills will greatly improve.

Shoot up, not down

Avoid shooting down, so the subject does not blend in with the background. Shooting from the bottom-up with some water behind the subject results in much better contrast.

Expand your camera system with an external flash or photo-video lighting accessory

Water filters out light and red/yellow colors resulting in darker, blue images. The SeaLife DC2000 includes Dive and Snorkel modes that correct for lost colors, but color-correction is only effective to about 60ft (18m) depending available sunlight and water visibility. At deeper depths, there is a complete absence of red colors so color-correction modes (and filters) are not as effective.

The best way to compensate for lost colors is by using underwater lighting, like the Sea Dragon Digital Flash or photo-video light. Lighting accessories easily mount to the bottom of the housing. To learn more about UW Lighting, please visit your local authorized SeaLife dealer or www.sealife-cameras.com.

Ask your local SeaLife dive dealer about underwater photography courses

Most SeaLife dive dealers offer underwater photography courses which includes hands-on training as well as many helpful tips and techniques to underwater photography.

Visit the SeaLife website for updated tips and advice

Updates to this manual and additional tips and advice can be found on the SeaLife website at www.sealife-cameras.com. Also, check out the "Great Pictures Made Easy" tutorial, which is available for free download on the the SeaLife website.

Troubleshooting – Inner Camera

Problem	Cause and/or Action
Camera does not turn on	The batteries may be exhausted. Charge or replace the batteries.
Camera turns off automatically	<ul style="list-style-type: none"> • Power Saving may have activated. Turn power back on. • The battery may be exhausted. Charge the battery.
LCD turns dark	Push any button except the Power button to turn on the LCD.
LCD monitor displays "Not available for this file"	Function is only available for specific file types. File format is not supported.
LCD monitor displays "No image"	There is no image file in the memory card. Image file format may not be supported.
LCD monitor displays "Memory full"	Memory card is full. Replace the memory card with a new one or delete unnecessary images.
LCD monitor displays "File locked"	This file is locked. Unlock the file. See "Protect" on page 69
LCD monitor displays "Format error" or "Memory card is damaged"	The card may be damaged. Clean the gold contacts on the memory card or replace the card.
LCD monitor displays "Copy error"	The memory card is full. Replace card or delete unnecessary files.

Camera not focusing

The DC2000's autofocus system requires sufficient lighting and contrast to focus on a subject. If the subject is in low light or blending in with foreground/background (i.e. low contrast), the camera will have a difficult time focusing on the intended subject. Another possible cause for out-of-focus pics is shooting in low visibility conditions. The camera may try to focus on the debris suspended in the water. Here are some tips for capturing sharp pictures:

- Make sure you have the correct focus setting:
 - Auto Focus: 6" to infinity (15cm to infinity)
 - Macro Focus: 3.5"-20" (9cm to 50cm)
 - Super Macro: 3.5"-20" (9cm to 50cm)
 - Infinity: 3ft – Infinity (90cm to infinity)
- For still images, pushing the shutter button halfway will set the camera's auto focus. Focus squares will appear on the LCD to indicate what subject the camera is focusing on. Green squares indicate the camera has found a subject to focus on. Red square indicates the camera could not find a subject to focus on.
- For videos, the video start/stop button does not have a halfway point. Pushing the video button will set the camera's focus and begin recording. The Auto focus setting only applies to pictures and not to video. You may turn on the Continuous AF Video setting, so the camera will check and adjust focus while recording videos very few seconds. This setting is better used for close-up videos where you know that the shooting distance throughout the video clip will change. Shooting video beyond 3ft (90cm) with Continuous AF enabled may be disruptive as the camera constantly refocuses when it doesn't need to.
- When taking pictures beyond 3ft (90cm) shooting distance, set the camera to Infinity focus setting. This locks the auto focus to infinity and objects beyond 3ft (90cm) will be in focus. This setting is also ideal when shooting larger moving subjects, like sharks and mantas.
- Use photo-video light to illuminate the subject
- Set AF Area setting to Center when the subject you want to focus on is positioned in the center of the image frame.

Troubleshooting – Underwater Housing

Problem	Cause and/or Action
Housing leaks water	<ul style="list-style-type: none"> • O-ring damaged. Inspect and replace O-ring. See page 104. • O-ring contact surfaces is damaged and no longer smooth. Contact your SeaLife dealer or SeaLife Service Center for repairs. • Possible obstruction in sealing area when closing the housing.
Buttons/dial action sticks or not smooth	<ul style="list-style-type: none"> • It is normal to feel some resistance when pressing the housing buttons or turning the dial. If buttons do not return to their normal position, soak the sealed housing in fresh water for a few minutes and press the buttons several times to flush out any trapped salt, sand or particles. • Make sure to synchronize the mode dial of inner camera with the UW housing mode dial before sealing the housing. • After sealing the camera inside the housing, rotate the mode dial in any direction and then return it to the desired mode setting. This will automatically seat the mode dial gears. If the gear teeth are not seated on land or at shallower depths, it may be difficult to rotate the dial at depth.
Lens fogs underwater	<p>Humidity trapped inside the underwater housing may condense on the glass lens port and cause fogging. To prevent fogging, do this:</p> <ul style="list-style-type: none"> • Store inner camera and housing in cool, dry place. • Avoid opening the housing in high humid environments. • Insert a fresh Moisture Muncher capsule into the pocket located inside the housing door above the LCD display window. See page 92.

Repair Service and Parts

We stand behind our product with a pledge to provide superior service to our customers. If your camera needs service or if you need a replacement part, we promise fast, friendly and professional service so you can have your equipment in good working order before your next dive trip.

Parts

To order spare parts, please contact your local SeaLife dealer. Visit the Dealer Locator at www.sealife-cameras.com to find a dealer near you. US residents can also order spare parts online at www.SealifePartsDirect.com.

Service

If your SeaLife product is damaged and requires repair service, please follow these important instructions:

1. Visit the Product Updates page located in the Technical Support menu of the sealife-cameras.com website.
2. Check that you have the most recent firmware loaded on your camera. The firmware version is displayed on bottom right corner of the LCD display's startup screen when powering on the camera. Firmware updates are included in the Technical Support menu of the sealife-cameras.com website.
3. Contact the dealer from whom you purchased the product. The Dealer Locator page contains a complete list of local dealers that may be able to assist you with trouble shooting your problem.

If none of these options help, please follow the return instructions available on the seaLife-cameras.com website.

Camera Specifications

Sensor	Sony 1" type CMOS sensor / 20 Megapixel
Lens	7-element fully, multi-coated optical grade aspheric lens design with mechanical 7-leaf shutter Focal Length: f=11.6 mm (Film equivalent: 31mm)
LCD monitor	3" 920K high resolution color LCD
Focusing Range	Normal AF Auto Focus: 6" (15 cm) ~ infinity Macro: 3.5" (9 cm) ~ 20" (50cm) Super Macro: 3.5" (9 cm) ~ 20" (50cm) Adds 1.7X digital zoom Infinity: 3ft (90cm) ~ Infinity
Aperture	F1.8 to F11
Shutter Speed	Auto: 1 ~ 1/2000 sec. Manual: 15 ~ 1/2000 sec. Night: 1/15 ~ 1/2000 sec. Fireworks: 4 sec.
File Formats	Still Image: JPEG (EXIF 2.3 compatible), RAW (.dng) MOV (Video: MPEG-4 AVC/H.264, Audio: Linear PCM)
Resolution (Photo)	<u>3:2 Aspect ratio:</u> 20M (5472 x 3648), 10M (3888 x 2592), 5M (2736 x 1824) <u>4:3 Aspect ratio:</u> 18M (4864 x 3648), 10M (3648 x 2736), 5M (2592 x 1944), VGA (640 x 480) <u>16:9 Aspect ratio:</u> 17M (5472 x 3080), 7.5M (3648 x 2056), 4.2M (2720 x 1528) <u>1:1 Aspect ratio:</u> 13M (3648 x 3648), 6.5M (2560 x 2560), 3.7M (1920 x 1920)
Resolution (Movie)	1080p60 (FHD), 1080p30 (FHD), 720p30, 1080p15 (Voiceless), 720p60 (Voiceless), VGAp120 (Voiceless)
Scene Modes	<u>Land:</u> Portrait, Landscape, Sunset, Dawn, Backlight, Kids, Night Scene, Fireworks, Beach, Snow, Sports, Party, Candlelight, Night Portrait, Soft Skin, Food, Background Defocus, Love Portrait, Self Portrait, Smile Shutter, HDR, Time Lapse, GIF Capture, Art Effect and Continuous Shooting. <u>Underwater:</u> Dive, Snorkel, Ext Flash and Ext Light.
Mode dial	Intelligent Scene, Land Scene Modes, Underwater Scene Modes, Panorama, Manual, Aperture Priority, Shutter Priority, Program
ISO Equivalent	Auto, 125, 200, 400, 800, 1600, 3200, 6400, 12800, 25600

White Balance	<u>Land</u> : Auto, Daylight, Cloudy, Tungsten, Fluorescent 1, Fluorescent 2, Manual, <u>Underwater</u> : Blue Water Deep, Blue Water Shallow, Green Water
Exposure Control	From -2.0EV to +2.0EV in 0.3 step increments
Metering	Multi, Center, Spot
Self-timer	Off, 10 sec., 2 sec., Double (10 + 2 sec.)
Flash	Auto Flash, Red-eye Reduction, Forced On, Slow Sync, Forced Off
Storage	Internal memory: 80MB flash memory External memory: Micro SD, Micro SDHC, Micro SDXC card and UHS-1
Menu Languages	English / French / Spanish / German / Italian / Russian / Portuguese / Brazil Portuguese / Dutch / Turkish / Polish / Hungarian / Romanian / Czech / Bulgarian / Croatian / Slovak / Slovenian / Greek / Swedish / Norwegian / Finnish / Danish/ Arabic / Indonesia / Malay / Thai / Japanese / Korean / S. Chinese / T. Chinese
Interface	USB 2.0
Battery	Li-ion battery: FJ-SLB-10A (3.7V, 1130MAH)
Battery Level	Full-Half (65% ± 15%), Half-Low (25% ± 15%), Low-Exhausted (10% ± 10%)
USB Wall Charger	Rated input voltage: AC 100 V ~ 240 V (160 mA, 50/60 Hz) Rated output voltage: DC 5 V/1 A Operating temperature: 0°C ~ 40°C
Operating Temperature	0°C - 40°C
Microphone	Two built-in stereo microphones
Depth Rating	60ft (18m) without UW housing
Speaker	One built-in mono speaker
Dimensions	2.6"H x 4.6"W x 1.4"D (67 x 116 x 36 mm)
Weight	8.3 ounces (234 grams) Inner camera with battery and memory card.
Certifications	CE, ROHS, FCC, WEEE

Housing Specifications

Depth rating	200ft (60m)
Buoyancy	Positive +10 grams (measured with inner camera in housing)
Controls	Top: Power, Video start/stop and Shutter Back: Mode Dial, Playback, Focus(up), Flash(down), Menu and OK
Operating Temp.	Underwater: 33°F to 110°F (1°C to 43°C) Land: 0°F to 120°F (-17°C to 49°C)
O-ring	Silicone (item # SL74017)
Lens port	Optical glass lens port with anti-reflective coating. Accepts SeaLife SL975 Fisheye lens accessory.
Tripod mount	Standard ¼-20 tripod threads to adapt accessories.
Hardware	304 - 316 series marine grade stainless steel metal hardware.
Housing material	Rubber overmolded polycarbonate housing.
Weight	24.4 oz. (691g) UW housing and inner camera 16.1 oz. (457g) UW housing only
Dimensions	5.9" x 4.0" x 3.0" (149mm x 102mm x 81mm)
Warranty	1 year limited warranty.

About Folder and File Names

Your camera automatically creates folders to organize captured image and video files.

Folder names begin a unique 3-digit number followed by the letters DICAM. The folder number increases in sequence from 100 to 999. A new folder is automatically created after file number 9999.

File names begin with the letters "DSCI" followed by a unique 4-digit number that increases in sequence from 0001 to 9999. After file DSCI9999, a new folder is created and file numbering starts over with DSCI0001.

The file names will continue increasing in sequence even after deleting files from memory or formatting the camera. If you format and perform Reset All function, files will start over with DSCI0001.

Do not alter the folder or file names in the memory card or the camera will not be able to playback the files.

DC2000



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