



Underwater Photo Solutions

FA-480 Housing Operator's Manual

For Canon PowerShot A480 Digital Camera

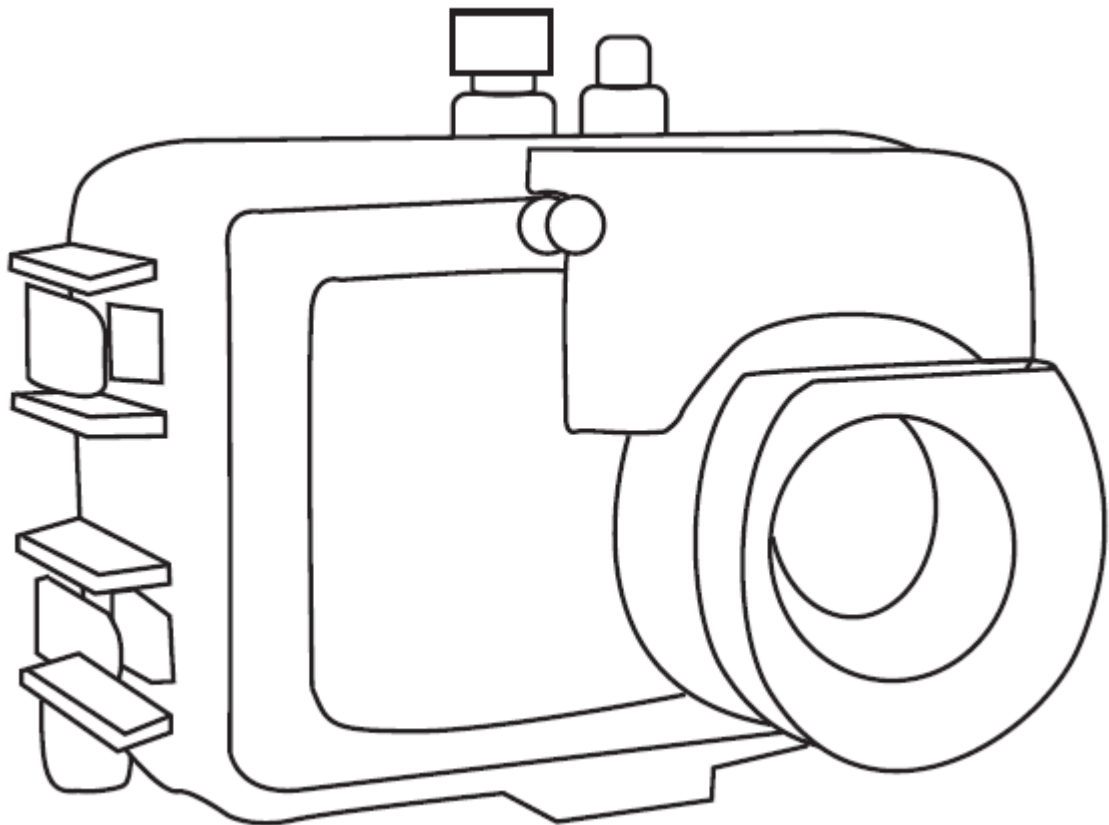


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GENERAL INFORMATION

The Fantasea FA-480 Housing

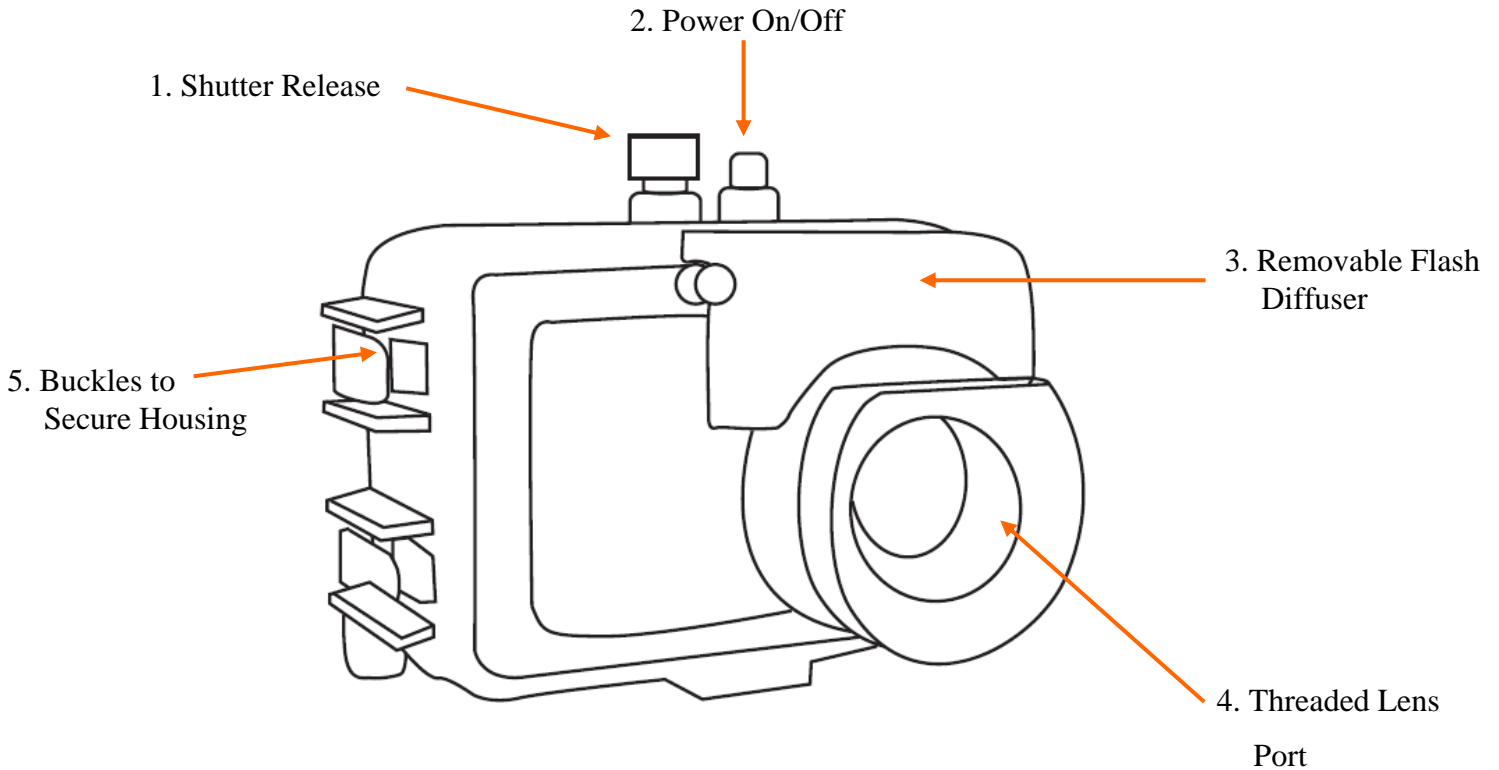
Fantasea has specially designed the FA-480 housing for the Canon PowerShot A480 digital camera. This housing is ideal for outdoor and underwater photographers who enjoy the camera's automatic exposure features for capturing fast action pictures easily and creatively. The FA-480 housing ensures easy handling and accurate access to camera functions through the critical placement of push-button controls and a compact design.

The FA-480 housing provides access to all control functions: On / Off, Shutter Release, Zoom In / Out, Mode Switch, Menu, Display, FUNC / Set, Macro / Infinity, ISO / Jump, Timer / Erase and Flash, and has a built in Flash Diffuser and an anti-glare hood over the LCD screen.

Fantasea FA-480 Uses

The Fantasea FA-480 housing is designed as an underwater / outdoor camera housing. It features double O-rings on all controls, and has a working depth of 200 feet/60 meters. Underwater photographers can dive or snorkel and capture all the excitement of this fascinating world, while outdoor photographers also have the option of capturing the action of such activities as white water and paddle sports, swimming, sailing and boating, surfing, fishing and hunting, backpacking and camping. The Fantasea FA-480 will protect the PowerShot camera from water, sand, dust, and other damaging elements.

Top / Front Side of Housing



Numbered descriptions below refer to corresponding numbers on the above graphic.

1. Shutter Release

This is a two stage shutter-release button. First lightly press the shutter-release button halfway, stopping when you feel minimal resistance. When the camera successfully focuses, it beeps twice. Press the shutter-release button the rest of the way down to release the shutter and take the picture.

2. Power On / Off

To turn on the camera, press the power switch. The start-up image will display on the LCD monitor.
To turn off the camera, press the power switch again.

3. Removable Flash Diffuser

The Flash Diffuser is used to diffuse the flash intensity [the internal flash]. See the section on "Accessory Slave Flash" for additional information.

4. Threaded Lens Port

The Fantasea FA-480 features a threaded 46mm lens port. This threaded port is designed to work with some of the lens accessories that are currently on the market. The following “wet” lens accessories fit over the housing port and can be installed and removed during the course of the dive:

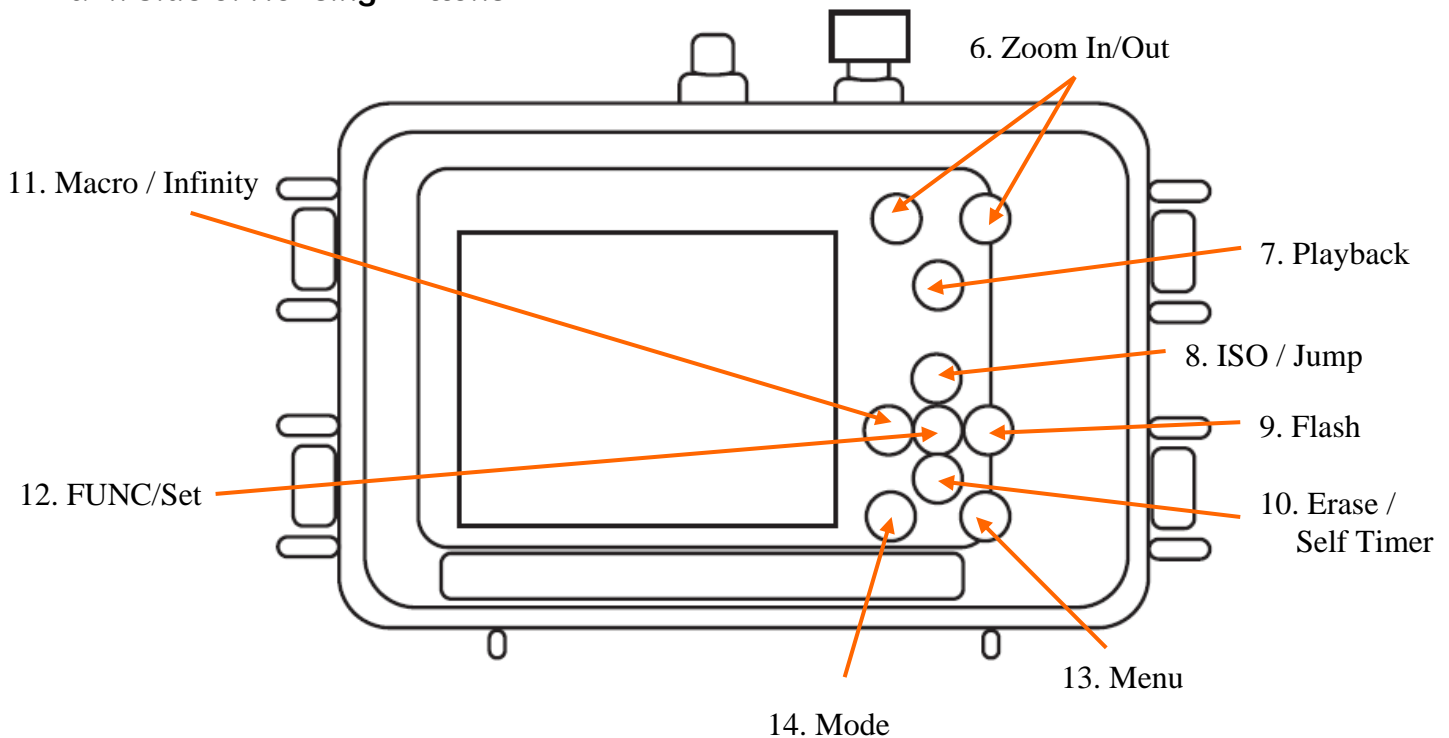
- BigEye Lens M46 (#5131): Perfect for shooting seascape, divers, ship wrecks and schools of fish, without moving further away from the subject, thereby still taking full advantage of water clarity and artificial light sources.
- SharpEye Lens M46 (#5127): Perfect for shooting close-up images of fish, corals, textures and more. The macro lens magnifies the subject and enables the camera to focus on short distances for creating super sharp images.
- RedEye Filter M46 (#5178): Used to restore the red color absorbed by the water. In shallow depths, these filters can serve as an attractive alternative to artificial light sources.

For more information please refer to the Fantasea Line website www.fantasea.com.

5. Buckles to Secure Housing

Refer to the section "Using the Fantasea FA-480 Housing" on how to open and close the camera housing.

Back Side of Housing Buttons



Numbered description below refers to corresponding numbers on above graphic.

6. Zoom In/Out

- In the Shooting mode, pressing the right zoom button will zoom in on your subject, making it appear larger. Pressing the left zoom button will zoom out from your subject, making it appear smaller.
- In the Playback mode, press the right zoom button in order to magnify your image. Press the left zoom button in order to view images in sets of 9 (index display).

7. Playback

- In order to review images on the screen, press the Playback button. The last image taken will appear on the screen.
- Browse through the images using the multi-selector buttons.
- Pressing the Playback button again will turn the camera off.
- In order to switch to the Shooting mode, press the shutter-release button halfway or the Mode button.

Multi-Selector buttons (8-12)

8. ISO / Jump

- Raise the ISO speed to use a fast shutter speed when you wish to reduce the effects of camera shake, to avoid blurry subjects, or to turn the flash off when shooting in a dark area. However, please note that making use of high ISO values may cause the images to appear coarse.
 - In the Shooting mode, press the ISO / Jump button.
 - Use the multi-selector arrows to alter the ISO speed and press the FUNC / Set button.
- When there are many images on the memory card, you can search them by a specified method or image unit.
 - In single image playback, press the ISO / Jump button.
 - Press the up/down multi-selector buttons in order to select the desired search mode.

- Pressing the left/right multi-selector buttons will browse images by using the selected search method.
- To return to single image playback, press the Menu button.

9. Flash

- Press the Flash button.
- Use the multi-selector left/right arrows to choose the desired flash mode, and press FUNC / Set.
- Pressing the Menu button when this screen is displayed will allow you to set flash functions such as Red-Eye Correction and Red-Eye Lamp.

10. Erase / Self-Timer

- In the Playback mode, in order to erase an image, use the multi-selector right/left arrows to select an image and press the Erase button. Confirm that the erase is selected, and press the FUNC / Set button.
- In the Shooting mode, in order to activate the Self-Timer, use the multi-selector up/down arrows to select the desired mode (Off, 2 seconds, 10 seconds or Custom Timer) and press the FUNC / Set button.
 - Pressing the Menu button while this screen is displayed will allow you to select the delay and number of shots as when the Custom Timer is selected.

11. Macro / Infinity

Press the Macro / Infinity mode, use the multi-selector right/left arrows to select Normal, Macro or Infinity and press the FUNC / Set Button.

- Macro Close-Up mode is used for taking pictures of objects as close as 3cm/1.2 inch.
- Infinity mode is used for taking pictures of objects 3m/9.8 feet or more from the end of the lens.

12. FUNC / Set

The FUNC / Set button sets many of the common shooting functions.

- Choose any of the shooting modes displayed when pressing the Mode button.
- Press the FUNC / Set button.
- Use the multi-selector up/down arrows to select a menu item.
- Use the multi-selector right/left arrows to select an option for the menu item.
- Press the FUNC / Set button again.

13. Menu

Convenient settings for shooting, playback or printing can be set with these menus.

- Press the Menu button.
- Use the multi-selector left/right arrows to switch between menus.
- Use the multi-selector up/down arrows to select a menu item.
- After selecting an item, use the multi-selector left/right arrows to select an option.
- Press the Menu button again.

14. Mode

- In order to switch between the different shooting modes, press the Mode button.
- Use the left/right multi-selector buttons to browse available shooting modes.
- Use the up/down multi-selector buttons to browse the different scenes when the Scene mode is selected.
- Press the Func / Set button in order to confirm your selection.

Note!

It is strongly recommended that you familiarize yourself with all the controls topside before using these controls while diving.

GENERAL DESCRIPTION OF CAMERA

The Canon PowerShot A480 camera is extra-compact, comfortable to work with and affordable. Redesigned for even more intuitive operation, the PowerShot A480 offers a new build and design that is 25% smaller than that of its predecessor – in a choice of silver, red, blue or black. Every aspect of the PowerShot A480 has been redesigned with one thing in mind: ease of



use. Thanks to a new, simplified button layout – with dedicated buttons for zoom, mode and playback and an improved User Interface, it’s as easy to operate as it is to carry. The PowerShot A480 uses a 10.0 Megapixel sensor to capture every scene in vivid detail, ready for printing at sizes as large as A3+. This is complemented by a 3.3x optical zoom, which provides the flexibility to frame everyday shots to perfection. At the heart of the PowerShot A480 is Canon’s DIGIC III image processor. As well as ensuring exceptional image quality – with ultra-low noise levels and outstanding color reproduction – DIGIC III drives the rapid response times. To keep shots looking sharp, Motion Detection Technology uses changes in scene information to identify subject motion and camera-shake. ISO is then optimized for minimum blur and maximum image quality.

A range of 15 preset shooting modes allows any user to instantly get the correct settings for common scenes. Among the different scene options you can also find the “Fish Scene”, which was specially designed for taking pictures underwater.

It’s also equally easy to shoot spontaneous 30fps video clips, ready for upload to the internet or sharing via the bright 2.5” LCD screen. Plus, because the PowerShot A480 is powered by AA batteries, users can enjoy a convenient, readily available source of power.

USING THE FANTASEA FA-480 HOUSING

Note!	It is strongly recommended to take the first dive without the camera inside the housing. You should check that the water tight seal has not been affected during transport and long periods of storage.
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OPENING THE HOUSING

1. Release all four latches at the same time, and lift off the back half to open the housing.

INSERTING THE CAMERA

Since the **Fantasea FA-480** is specifically designed for the PowerShot A480 digital camera, inserting the camera into the housing is quite simple.

1. Mount the camera on the removable tray, using the tripod screw.
2. Slide the tray and camera into the housing tray slot. Make sure it is completely inserted.
3. Make sure the camera lens is more or less centered in the rounded port area and that the lens does not distort the round black rubber seat. The housing is designed to have the camera fit in place perfectly, but if you are not careful, it is possible to put it in at an improper angle and it will then be impossible to get a good seal or easy closure of the housing.
4. *After camera insertion, check that the extended camera lens does not catch or bend the black rubber seat on the inside of the lens port. It is vital that the lens does not disturb this rubber seat.*

 Notes:	<ol style="list-style-type: none"> 1. It is recommended to make some camera settings prior to inserting the camera into the housing. Please refer to the PowerShot owner's manual for menu options and personal preferences. 2. Take a few test shots: it is recommended to turn the camera "on" and program to "Flash Always" mode before inserting it into the housing and then take test shots to make sure all systems are working.
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Underwater photographers will probably want to set the flash mode to the *Flash Always* setting to ensure that they always have a flash with every exposure. It is also wise to set the focus mode to allow the lens to focus in the macro range for capturing great images of the tiny and exotic subjects that you can find underwater.

CHECKING THE O-RING

Prior to each closure of the housing the O-ring should be visually inspected. If there is any debris present, including dirt, sand, dust, hair, grease or other matter, it must be cleaned to ensure a proper watertight seal. Cleaning the O-ring is a simple matter of wiping it with a damp, soft cloth to remove the foreign matter. Be careful the cloth you use does not leave any of its own material behind as this can also affect the effectiveness of the seal. When replacing the O-ring, place it back into the groove starting at one corner and gently place it in by pressing it into the groove all around the housing until it is all sitting in the groove and

no part of it is sticking up or out of the groove. You can then apply a slight layer of silicone if you have not done this yet. Be sure it is completely seated in the channel for a proper seal.

🔗 Note	Lubrication of an O-ring does not improve the seal. It only reduces the amount of friction on the O-ring when it is being moved into sealing position. The amount of lubrication required on the O-ring is only enough to allow it to slip into place without friction, so it does not twist or become dislodged. More grease is not better, and could in some cases have a negative affect if it is applied in large amounts to form a build-up that could trap any debris or foreign matter.
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CLOSING THE HOUSING

1. Place the housing back over the front and align the complete mating surface of the housing and the O-ring, forming a proper seal.
2. Position all four latches over latch hooks in ready position.
3. Close one of the bottom latches first, maintaining pressure on the other side. Proceed by closing the other side's top latch. Then close the remaining bottom latch and the remaining top latch. Test all latches carefully to make sure that they are completely locked into place and not just pushed down. Try to open them to make sure that they cannot open accidentally.
4. Inspect the O-ring for proper closure. A complete seal can be visually confirmed by the O-ring around the complete circumference of the housing.
5. Always take the first dive without your camera in the housing just to make sure there is no leakage from damage to the housing. During the dive, especially at the beginning of descent, take special care to look at the housing to make sure no bubbles are escaping from it and that no water is entering. Generally, if there is a problem with the seal, you will discover it in the first seconds of the dive.
6. After use, when opening the housing, it is important to hold it so the lens port is facing down. This will prevent the camera from slipping out of the housing while being opened. Release the four latches

in the same order described for closing them in step 3, and take off the back side of the housing.

Gently pull both the tray and the camera outside of the housing and unscrew the tripod screw out of the camera in order to disconnect it from the tray.

VIEWING THE SUBJECT

The A480 camera does not have a standard eyepiece, but underwater photographers and outdoor photographers will appreciate the large 2.5 inch LCD viewing monitor for composing photographs. The LCD monitor allows you to see your subject in sharp focus and framed properly. Hold the camera housing in your outstretched arm at a position that is both comfortable and also allows you to easily see the LCD monitor, for best compositional options.

TAKING THE PICTURE

Once you have composed your scene or subject in the LCD monitor, depress the shutter release button to take the picture. A half depress will activate the live viewing ability of the LCD and allow the camera to focus, once in focus and ready to shoot a green light will appear on the LCD monitor and the camera is ready to take the picture. Press down the shutter all the way to complete the image capture. You may notice a pre-flash and slight delay in the shutter release. This is to allow the camera to make its final focus and exposure calculations before taking the picture. With a little practice, you will become used to this and taking pictures of moving subjects will become easier and natural.

CHOOSING IMAGE FILES

There are several image file options to choose from that offer different resolution and file sizes. This determination must be made prior to camera insertion from Menu options. Please refer to the PowerShot instruction manual for details on setting these preferences.

BATTERY LIFE

AA-Size Battery Compatibility

AA-Size is one of the most widely available battery sizes in the world - in alkaline, lithium, rechargeable or other forms. AA compatibility enables use anywhere in the world.

There are certain things that users can do to help with battery life. The most important is to set the camera to turn the LCD off after a short time, during periods of non-use. It can then be automatically turned back on if you depress the shutter release control half way. Please refer to the PowerShot Instruction Manual for details on how to make this adjustment setting. It is always wise to have backup batteries in case you do run out of power. The supplied battery can be recharged many times and offers an economical and environmentally friendly power source.

USING THE FLASH

The PowerShot has a built-in flash, which will illuminate nearby underwater subjects. For subjects that are farther away and for deeper dives, an accessory slave flash is recommended (see below). A built-in flash diffuser is supplied which will help achieve a wider and softer light source, thereby providing more coverage and less likelihood of *backscatter* (the unattractive snowstorm affect of the flash reflecting off the suspended particles in the water). Further reduction of *backscatter* can be achieved by using an accessory off-camera slave flash. This will be discussed below in more detail later.

The need for artificial light to maximize color reproduction is necessary in nearly all pictures taken underwater. Therefore it is strongly recommended that you set the flash mode to *Flash Always*. This will ensure the flash fires on every exposure regardless of the ambient light conditions (Please refer to the camera's instruction manual for more details).

Outdoor photographers do not have this same problem. There is no backscatter to be concerned with, and due to the ability of the flash to travel farther and more effectively in air as compared to in water, there is normally not a need for an accessory flash to provide proper illumination for most subjects.

ACCESSORY SLAVE FLASH

External flashes are required in order to professionally improve the color in underwater photographs. An external slave strobe (flash) can be used to supplement the ambient light source in order to create improved lighting conditions and to retrieve the colors absorbed by water. For deeper dives, this is essential to produce photos in which the colors are more vivid rather than bluish.

When the external flash fires in sequence with the camera's built-in flash, this can cause the phenomenon called Backscatter. This problem occurs when the light from the built-in flash, which is close to the lens, bounces directly back onto the lens reflecting plankton and particles of sand in the water in front of the lens. To avoid this problem, position the external flash as far away from the camera as possible, making sure it is pointed towards the subject.

An external flash not only provides the opportunity for clear, vivid, colorful pictures and at deeper depths, compensates for the blue scented tones. It can also be used to create the effect of the main subject being the only thing illuminated and therefore appears to float against a dark background.

Slave strobes are popular flash units to be used with compact digital housings. These slave units trigger in sync with the digital camera's internal flash and synchronize by a small slave sensor built in the strobe body.

Fantasea Line offers a selection of excellent underwater flashes, specially designed for compact digital housings:

- Nano Flash (#6115)- An ultra compact digital slave strobe and underwater protective housing kit. Features a guide number of 12 and 3 power output settings.
- Remora Flash (#6117)- Includes a Y-S mount for attaching a focus light on top of the flash, thereby sparing the need for an additional arm.

For more information please refer to the Fantasea Line website www.fantasea.com.

 Note

Be sure to use a slave flash that has the ability to ignore the built-in pre-flash in digital cameras, and synchronizes with the shutter release.

LENS ACCESSORIES

The Fantasea FA-480 features a threaded 46mm lens port. This threaded port is designed to work with some of the lens accessories that are currently on the market. Fantasea offers the following “wet” lens accessories, which fit over the housing port and can be installed and removed during the course of the dive:

- BigEye Lens M46 (#5131): Perfect for shooting seascape, divers, ship wrecks and schools of fish, without moving further away from the subject, thereby still taking full advantage of water clarity and artificial light sources.
- SharpEye Lens M46 (#5127): Perfect for shooting close-up images of fish, corals, textures and more. The macro lens magnifies the subject and enables the camera to focus on short distances for creating super sharp images.
- RedEye Filter M46 (#5178): Used to restore the red color absorbed by the water. In shallow depths, these filters can serve as an attractive alternative to artificial light sources.

For more information please refer to the Fantasea Line website www.fantasea.com.

FANTASEA COMPACT DIGITAL ACCESSORY SYSTEMS AND SETS

Fantasea offers a variety of sets for PowerShot cameras. These sets are made up of quality accessory products which will enhance and improve your underwater images. Accessory products include external flash systems, flexible arms, trays, filters, wide angle lenses, fiber optic cables, bags and more. Below you can see one sample system. For more information please refer to our website or to the Fantasea Dealer where you purchased your housing.



SHOOTING TECHNIQUES

EXPOSURE MODES (PRE-SET BEFORE CAMERA INSERTION)

It is recommended to get familiar with the different exposure modes offered within the camera menus prior to diving with it. The PowerShot A480 offers the following Shooting Modes:

- Auto- This mode is most effective when you are not yet familiar with the affects of other camera modes or when you prefer to deal as less as possible with manual settings. In this mode, the camera independently calculates and sets most of the exposure settings.
- Program- Set the camera to this mode if you wish to manually control some of the exposure settings, as ISO, White Balance, Light Metering and more. It is recommended that you get familiar with the affects of different manual exposure settings prior to shooting in this mode.
- Scene- The Scene mode offers a range of 15 preset shooting modes, which allows any user to instantly get the correct settings for common scenes. Among the different scene options you can also find the “Fish Scene”, which was specially designed for taking pictures underwater.
- Video- Choose this mode to take underwater video clips (30 frames per second).

ZOOM CONTROL

Zoom in for telephoto photos and larger subject size. Zoom out for wide-angle scenes. It is generally not recommended to use the zoom underwater and it is preferable to get physically closer to your subject. Reducing the amount of water between your camera lens and the subject will dramatically improve the quality of your images. Digital zoom has no value at all.

MACRO FOCUS

Macro Focus should be set when capturing tiny and exotic subjects that require close focus distances. In order to improve your camera’s underwater macro capabilities, a “Wet” accessory macro lens can be mounted on your housing’s lens port. Please see the “Lens Accessories” section for further information.

CAMERA POWER SAVING

You can access the camera's menu to select different power saving options. In order to do this, enter the Setup Menu, select *Power Saving*, activate the “Auto Power Down” function and select the inactivity period before the LCD turns off. It is recommended that the inactivity time selected is quite short, in order to conserve battery power. If set for longer periods of time, the LCD screen will heat up and it will produce condensation and fogging of the lens port. Condensation on the lens port will have a negative impact on the quality of the images taken.

Once the LCD screen turns off, when you want to resume shooting, pressing any button apart from the power button will turn on the LCD screen again. If the inactivity period was long enough to turn the camera off, you can turn it back on by pressing the On / Off Power button. The Welcome Screen will appear and then it will display the last image taken.

CARE & MAINTENANCE

The Fantasea FA-480 housing requires only a minimum amount of care for reliable performance. The following tips will enable you to get the best results.

1. Always rinse your housing with a strong stream of fresh water and if possible soak the housing in a fresh water tub or rinse tank for about 20 minutes after every dive in order to dissolve the salt water crystals from around the controls and openings of the housing. Manipulate each of the movable controls to assist the removal of salt particles from these tight areas.
2. Allow the housing to dry thoroughly before packing away for the day or for the trip home. You may use a soft towel or cloth to dry the housing. Be sure there is no grease or other debris on the towel.
3. Visually check the condition of the O-ring before every dive. If it is dirty, clean it with fresh water and dry it with a soft cloth as described above. If it is damaged in any way, such as cut or perforated, replace it before using the housing again.
4. It is recommended to slightly lubricate the housing's O-ring periodically. It's important to note that the amount of lubrication required on the O-ring is only enough to allow it to slip into place without friction, so it does not twist or become dislodged. More grease is not better, and

could in some cases have a negative affect if it is applied in large amounts to form a build-up that could trap any debris or foreign matter.

5. Be careful not to get greasy fingerprints or dirt on the lens port. This will affect the image quality. Wipe any dirt or grease off with fresh water and a soft cloth.
6. Do not drop the housing on hard surfaces, since it could crack and affect its watertight seal integrity.
7. Travel with the housing protected in a padded case. It is best to remove the camera from inside the housing when traveling and provide it with its own protective case, or compartment.
8. Never dive with the Fantasea FA-480 housing to a depth greater than 200 ft/60 meters.
9. It is recommended that you select the shortest time option on the menu, for placing the camera into standby during periods of inactivity. This will conserve battery power and reduce the heat given off by the LCD screen, which can contribute to condensation inside the housing and fogging.
10. You should take the first dive without the camera inside the housing. You should check that the water tight seal has not been affected during transport and long periods of storage.
11. It is likewise recommended to visually monitor the housing during every descent, especially for the first 10 meters/33 ft. If water is observed entering the housing or bubbles escaping from it, the housing should be rotated to a *port down position* and held that way as you return to the surface immediately and get it out of the water.
12. It is recommended to have all Fantasea housings serviced once a year at an authorized Service Center. This includes visual inspection and possible changing of all seals, gaskets and O-rings. Please contact Fantasea by email at info@fantasea.com, or visit the Fantasea web site www.fantasea.com for more information.