

OLYMPUS

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The Fascinating
World of
Underwater
Photography

The Olympus Underwater Library – Volume 1



The Fascinating World of Underwater Photography

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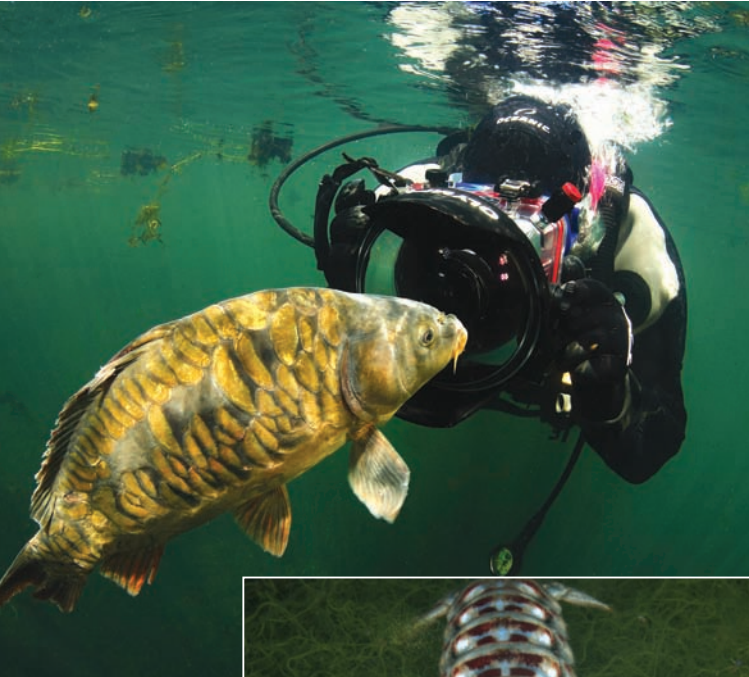
Introduction	4
The equipment you need	6
Underwater photography tips	8
Differences between photography on dry land and under water	10
Light	10
Colours	10
Particles	11
Using the flash	12
General shooting	14
Getting captivating macro shots	16
Taking wide-angle photos	18
Capturing fish and other fast-moving marine life	20
Creative aspects	22
Make a check and don't forget	24
Make a check before you get wet – preparation of camera and underwater housing	24
Don't forget	24
Maintenance & support	25
After each dive	25
Avoid storing the case in the following locations	25
What to do if a leakage is detected or the case breaks and needs repair	25
Maintenance	25
Olympus Support	25
Taking pictures underwater has become easy!	26
Olympus outdoor & underwater products	27
Outdoor Cases	27
Underwater Cases	27
D-SLR Underwater Cases	28
Further underwater accessories	28



The realm found below the water's surface has captivated people throughout the ages. It's host to a seemingly endless variety of marine life that comes in all shapes, sizes, and colours. Luckily, scuba diving and snorkelling are today more accessible than ever. And thanks to new technology, even hobby divers now have the chance to capture images of those unforgettable sights and share the unique experiences with those who stayed above the water's surface. To help you to make the most out of your underwater photography experience Olympus has put this short guide together.



The equipment you need



What you need depends largely on what you aim to achieve. If you just want to take snapshots while snorkelling, an outdoor case from Olympus will be the thing to fit the bill. They are waterproof up to several metres and also protect your camera from other contaminants. Alternatively, you could go for one of the waterproof and shockproof Olympus cameras, which can be taken up to several metres underwater, even without a special protective case.

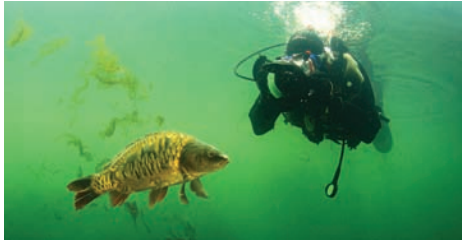
For scuba divers, an underwater case will be required because of the greater water pressure the cases will need to withstand. Underwater cases from Olympus are waterproof up to 40m or 60m* and allow the camera to retain its full scope of functions. Olympus offers at least one solution in every price and performance class for underwater photographers – from snapshooters to professional D-SLR users.

*depending on the model



Underwater photography tips

1. Get close – Less light is available underwater. This means you have to get closer to your subject for optimal exposure. With increasing distance floating particles can diffract light beams and affect picture quality.



2. Move slowly – This will prevent you from stirring up the water and agitating the floating particles. Furthermore, fish are rather shy animals, so moving slowly around them decreases the risk of scaring them away.
3. Use light from the back – Generally, better results are possible if the light comes from behind the photographer (unless you want silhouette shots).
4. Shoot upwards – Alternatively, you can make good use of available light, by aiming the camera slightly upwards while taking care not to shoot directly towards the lighting above.



5. Stay shallow – Taking pictures at low depths generally yields better results, as more natural light is available and colours generally come out better.

6. Stay off the ground – Disturbing the ground causes unwanted particles to float up, which could spoil photos. Furthermore, it may be harmful to marine life.

7. Hold your breath when taking the picture – The air bubbles caused by exhaling can scare fish away and holding your breath also gives added camera stability.



8. Keep the camera steady – To minimise the potential effects of camera shake, try holding the camera with both hands while pressing your elbows to your body.



9. Enter the water slowly – Don't jump into the water with your camera as it puts an unnecessary amount of mechanical strain on your camera and the outdoor or underwater case.
10. Prepare the camera before going underwater – Do this in a dry area well in advance and have the silica gel pack in the outdoor or underwater case for some hours before underwater use.

And don't forget: things appear bigger underwater!

Differences between photography on dry land and under water

Light

Because part of the light beams are reflected when they hit the water's surface, less light is available underwater than on dry land. The lower the angle at which they hit – such as during early morning or late afternoon – and the rougher the water surface, the more the light beams will be reflected. Best results are therefore achieved during calm seas and around noontime when the sun is at its highest. Also, don't forget that due to the density of water, the deeper you go, the darker it gets – right up to the point of complete darkness.



The altered conditions underwater make distances appear shorter by a fourth. This means something that seems like it is 3m away is actually 4m away. Remember to take this into account when using the flash underwater and judging the distance to the subject.

Colours

The further light travels down in the water, the more colours of the spectrum get lost. This starts with colours that have long wavelengths (red at a depth of around 3 – 5m) and proceeds to colours with short wavelengths (blue at a depth of around 20m). The loss of colours not only happens vertically, but also horizontally. So if you are taking a photo of a red subject from a distance of over 5m – even if you are close to the



surface – the red colour will be completely washed out. Bear in mind that if using the flash, the light must travel to the subject and back, thereby effectively halving the maximum distance.

Particles

Water is more or less full of floating particles. The amount of these depends on various factors including how clean the body of water is, the time of year and the current or turbulences at a given time. The particles are generally larger

than those present in the air and are therefore more likely to have an effect on the outcome of shots. Most common effects are reduced contrast and clarity (dots showing up in the photo) as well as a decrease in the available light, as the floating particles also diffract light beams.



General tips:

- If possible, go diving in clear weather
- Bear in mind the filtering effect on colours as distance increases
- Make use of your camera's exposure bracketing function (if available)
- It is often indispensable to use a flash

Using the flash

Unless you are only taking photos at shallow depths where a lot of ambient light from the sun is available, you will most likely have to use the flash to take well-exposed pictures. Luckily, most cameras nowadays feature a built-in flash. Even those found on compact cameras are generally sufficient for the most common shooting situations. However, under special circumstances, such as night diving, wide-angle photography, shooting at large depths, etc., it's often necessary to use an additional source of lighting (such as an underwater torch) or, if available for your camera, an external flash unit.

While various Olympus cameras can be connected to an external flash (if a corresponding underwater case is available), the option of using a slave flash is also available for models not having a regular external flash connection. The slave flash is triggered by the built-in flash. It attaches to a lighting tray which can be connected to the standard tripod socket found on the bottom of Olympus underwater cases.



Tips:

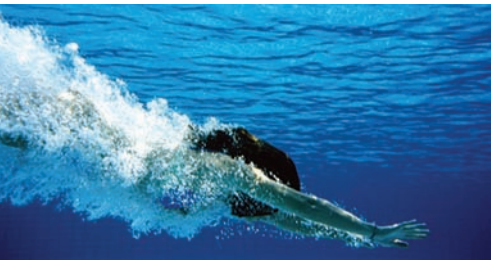
- For mixed-light shots (using a combination of both the natural light and flash), aim the camera slightly upwards toward the subject to use natural light for the background and the flash to light up the main subject
- When photographing subjects just below the water surface, the flash can generally be turned off because a lot of natural light is available at these shallow depths



- A diffuser for the flash helps improve results – all Olympus underwater cases and most outdoor cases feature this
- When purchasing a slave flash, remember to check that it is designed for use with digital cameras (called digital slave flash) and works with yours (many digital compact cameras emit two flashes each time – one for setting the white balance, the other as the actual flash – and the slave flash must be able to handle this)

General shooting

Most compact cameras today come with a standard zoom lens that's able to deal with a good variety of shooting situations. Besides spontaneous snapshots, you can also capture motifs such as portraits of single marine creatures, small schools of fish, pictures of other divers or a colourful coral reef to name just a few of the possibilities. For the great majority of shots this will be sufficient – especially if using the camera's underwater scene modes (if available).



Nevertheless, there are several shooting situations where specialised techniques and even extra equipment could come in handy. For such instances some underwater cases allow for the attachment of

conversion lenses to facilitate better wide-angle or macro shooting. For even more professional

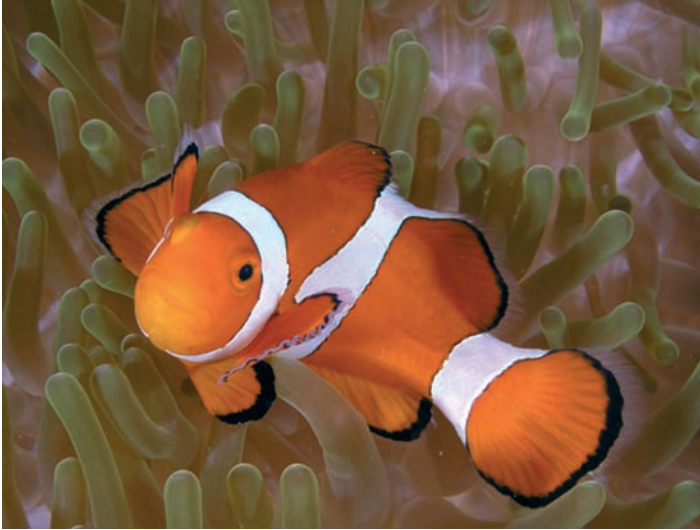


requirements, SLR camera systems enable photographers to change the lenses they are using to perfectly suit their specific needs.

Tips:

- Optimal shooting distance in most cases is from 60cm to 120cm
- Use your camera's pre-defined underwater scene modes as often as possible (if available: Underwater Wide, Underwater Macro, Underwater Snapshot, etc.)
- Zoom in or out to frame your subject (but bear in mind the issue of colours diminishing the further away you are from the subject)





Taking frame-filling shots of subjects at close range is referred to as macro photography. In most instances it is comparably easy to get good close-up underwater pictures. The relatively short distance between photographer and subject means that the colours will be rich and there will be fewer particles floating in the water affecting clarity. Furthermore, use of the flash will ensure a good level of exposure and correct colour reproduction.

But while it is fairly easy to take the macro shot, it may take a lot of time to find the perfect motif. However, considering that the subject of a macro shot will take up most of the frame and is therefore unquestionably the star of the composition, your patience in finding the right subject will certainly bring rewards!

Tips:

- Use the appropriate scene mode on your camera, if available (many Olympus compact cameras have a special macro mode, some even have an underwater macro mode)
- Take note of the minimum focusing distance of your camera and don't go any closer (otherwise you will only get blurred results)
- If your camera offers manual aperture control, close the aperture as far as possible (high F-stop, e.g.: F5.6) to obtain a larger depth of field (which means a greater area of the picture will be in focus)
- For macro shooting of moving subjects, it's best to use the continuous autofocus mode (if available)
- Macro photography is a good choice in bad weather



Taking wide-angle photos



Wide-angle shots are created by zooming out as far as possible (reducing the focal length). As on land, this lets you get more into the picture, making it particularly useful for providing photographers with the ability to get close to their subject and still fit the motif within the frame limits. Furthermore, it is great for taking shots of large subjects such as manta rays and sharks. Unlike on land, however, using the wideangle to take underwater panorama shots will generally not yield good results due to the problem of colours losing their vibrancy with increasing distance and the floating particles that can affect image quality, as explained earlier.



Lighting plays an important role when taking wide-angle shots and it is recommended to use the available ambient light for the background (by shooting slightly upwards at a shallow depth) and use the flash to light up the subject.

Tips:

- If available, use the appropriate scene mode on your camera (some Olympus models feature an underwater wide-scene mode)
- Wide-angle photography should preferably be done on sunny days (more ambient light)



- Try to get dimension into your compositions by including a foreground and background in your photos
- Don't be disappointed if your first shots don't work out as expected – keep trying. Getting good underwater wide-angle photos takes practice and patience!

Capturing fish and other fast-moving marine life

Most fish are curious, yet shy animals. Fortunately, two basic things can greatly improve your chances of capturing them on camera: a) not getting too close, and b) adjusting the camera settings before approaching the subject so you're ready to shoot immediately. The zoom level you select on your lens should depend on the size of the fish: zoom in for small fish (close-up) and zoom out for larger fish (wider angle).

Tips:

- The subject should take up 2/3 of the picture
- Try to approach fish from the front – they won't be scared off so easily
- Patience and quickness are virtues that pay off when wanting to take photos of fish
- Some background knowledge about the behaviour of fish increases your chance of getting them on camera



Creative aspects

The underwater world provides a great opportunity to give your creative impulses free reign. Due to the different possible light sources (natural, flash, artificial) the ideal framework is available for experimentation. When working with ambient light, for example, fascinating results can be obtained by photographing from the bottom up with a long exposure time – that way you can see the path of the light beams in the water. Shooting places with artificial light sources, such as ports or landing stages, can also produce very creative results. Don't be afraid to break some photographic rules – this is the time to do it! And don't forget you are not limited to just 36 pictures – using a high-capacity memory card will give you the chance to take literally hundreds of shots before needing to surface.



Tips:

- Make use of different types of lighting and try mixed lighting effects
- Try to shoot from strange angles to obtain interesting perspectives
- Use the camera's exposure bracketing function (if available)
- Shoot your subject with the light behind it to obtain a silhouette effect
- Use your diving partner as a subject to practice your creative shooting techniques
- Feel free to experiment



Make a check before you get wet – preparation of camera and underwater housing

- Check batteries
- Check available memory card capacity
- Check the O-rings of the underwater case
- Check that the camera is turned on, if necessary, before putting it in the housing
- Carry out separate checks of both underwater housing and camera before each dive to avoid any unwanted surprises*
 - a) Make sure that the case is waterproof
 - b) Check the operation of the camera before loading it in the case

* consult your manual for detailed instructions

Don't forget

- Take special care to respect the environment you are entering – remember that it's the natural habitat of other species
- Don't unnecessarily scare or disturb the marine life
- Coral reefs are delicate – don't use them to steady yourself and/or the camera while taking photos
- Keep a careful eye on the depth you are at and the time you spend in the water
- Play it safe – never go diving on your own



After each dive

- Wipe off any water drops on the case
- Take digital camera out of case
- Wash case with fresh water
- Dry case

Avoid storing the case in the following locations

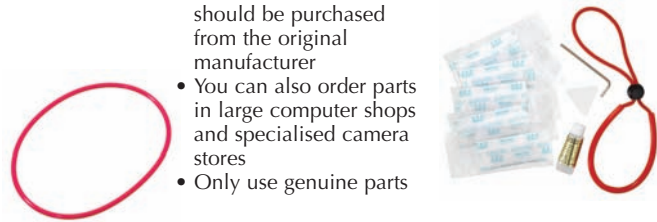
- Places with unusually high or low temperatures or extreme temperature variations
- Places with open fire
- Places with volatile substances
- Places with vibrations

What to do if a leakage is detected or the case breaks and needs repair

- Please contact a service outlet or your dealer

Maintenance

- Parts and accessories should be purchased from the original manufacturer
- You can also order parts in large computer shops and specialised camera stores
- Only use genuine parts



Olympus Support

Online: <http://www.olympus-europa.com>
On the phone: 00800 - 67 10 83 00
If you cannot reach the number above from your country, please dial +49 (0)180 5 671083 or +49 (0)40 237 73899



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Olympus offers a wide range of products and accessories to ensure that your underwater photography experience is both enjoyable and successful. From outdoor cases for holiday needs, to underwater cases that fulfil professional demands in up to 60m depth, there is something for everyone. What's more, underwater digital SLR photographers can now avoid the frustration of having to frame their subjects using the viewfinder while wearing diving goggles. Instead, Olympus has introduced the world's first D-SLR camera featuring a Live Preview directly on the LCD – therefore combining the ease-of-use of a compact camera with the professional quality of an SLR.

Outdoor Cases



Completely waterproof up to a water pressure equivalent to 3 metres depth, Olympus outdoor cases are sufficient for taking shots while snorkelling or swimming. Additionally they protect the camera against sand, dirt and other contaminants.

Underwater Cases



Made of durable, high-quality polycarbonate, Olympus underwater cases are waterproof up to a water pressure equivalent to 40 or 60 metres* depth and are therefore the ideal solution for scuba divers. The cases allow the cameras to retain their full scope of functions. Furthermore, all Olympus underwater cases feature a screw thread mount

at the lens. This allows the easy attachment of further accessories like converter lenses or filters.

Olympus outdoor & underwater products

D-SLR Underwater Cases

Olympus currently offers underwater cases for a number of its E-Series cameras. The cases are waterproof up to a water pressure equivalent to 40 or 60 metres* depth and are ideally suited for professional and semi-professional underwater photographers. Besides allowing for full availability of all camera functions, they offer enormous flexibility as they also enable many Olympus ZUIKO DIGITAL lenses to be used underwater as well as flash units (in combination with the respective underwater ports).



Further underwater accessories

For complete flexibility, Olympus offers a wide range of underwater accessories, including cases for external flash units and conversion lenses.

* depending on the model

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