
SeaLife®
Great Pictures
Made Easy
with micro 2.0™
Photo: Neil Andrea for SCUBAPRO, www.scubapro.com



Capture the Magic

As a scuba diver, you have encountered coral reefs teaming with strange creatures and vibrant colors that appear as if they were from another planet. You know what it's like to float effortlessly without gravity. You have learned to use your eyes to see and experience the underwater world, one of the greatest miracles on earth.

You capture these treasured moments with your underwater camera to relive the adventure and share your experiences with friends and family. Of course, there is no better way to tell your story than with pictures and videos

As the manufacturers of SeaLife, we believe that an easy to use underwater camera will help millions of divers and non-divers to experience and see a part of our world which is essential to our survival. And we hope that you will enrich and enlighten your life by capturing valuable impressions in the underwater world with your SeaLife Camera.



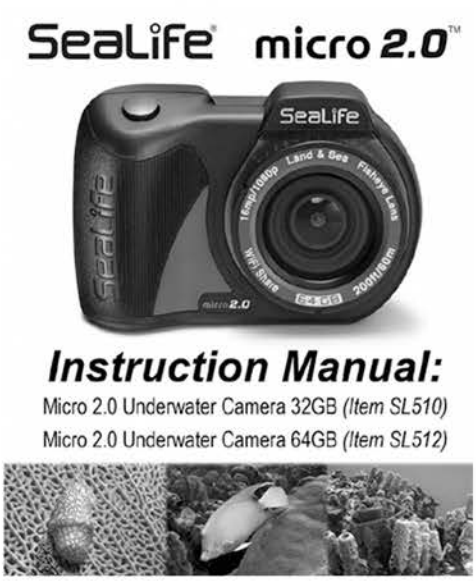
Over the last 23 years of developing underwater cameras and lighting systems, we have received countless pictures - some great ones that we post on the SeaLife website Photo/Video Gallery, and some not-so-great pictures along with your request for help and advice.

While underwater photography certainly has its challenges, we found that most "bad" pictures are the result of not following a few simple and basic principles. When you understand and apply these basic principles, your results will greatly improve. Here is our top 10 list for taking great underwater pictures.

I. Basic Camera Settings

This guide will teach you the basic principles of underwater photography and how to take great underwater pictures with your SeaLife Micro camera. Before you start, you should read through the camera's instruction manual and become familiar with the basic camera settings and controls.





Download Instruction Manual

II. Blue Pictures

Blue pictures are the most common complaint among UW photographers. Here's a typical example:

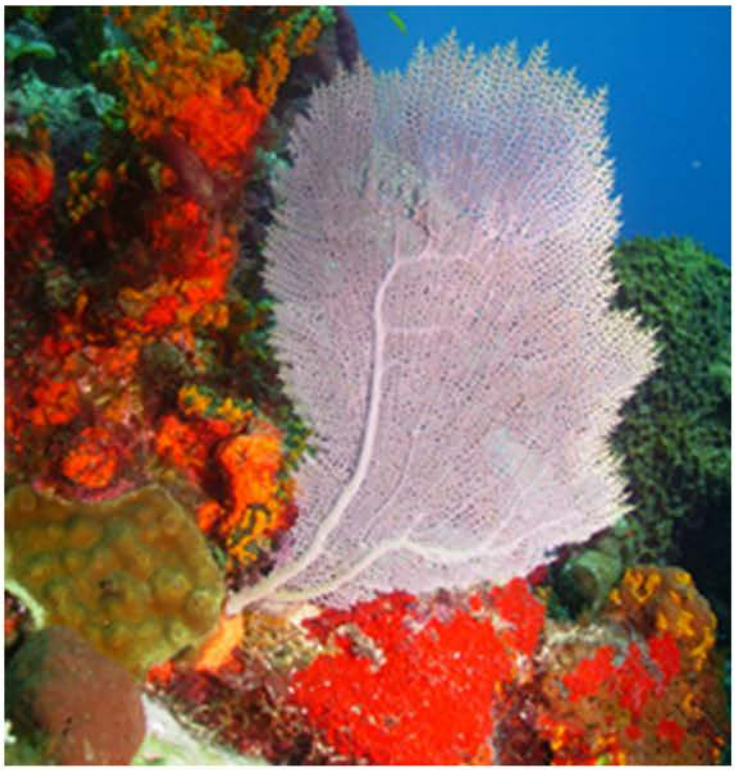


Water is about **800 times** denser than air. As you descend deeper into the water, the light conditions become darker and the colors are absorbed. Red is the first color to be absorbed, even at shallow depths of only 10ft/3m. Most of the orange and yellow colors are absorbed at 33ft/10m, leaving only green and blue colors. This diagram demonstrates the effect water has on light and color as depth increases.

There are simple solutions to capturing colorful pictures but let's first understand what causes blue pictures.

Did you know?

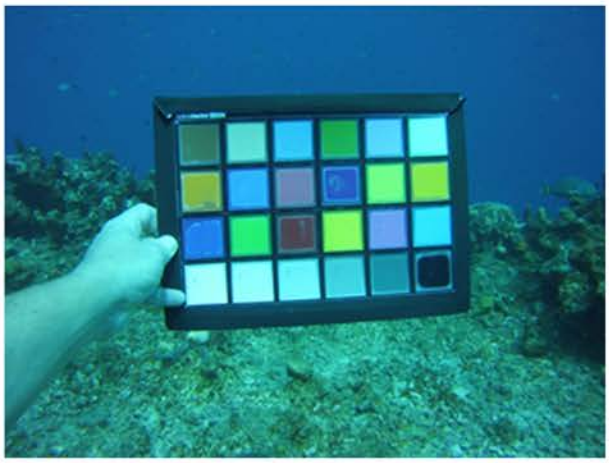
Coral, sponges and most other underwater sealife are actually very colorful. Brilliant reds, vivid orange and bright yellows highlight the underwater world. These intense colors help to camouflage the sea creatures. Since red and yellow colors are absorbed by the water, the sea creatures appear colorless unless you bring a light with you and uncover the hidden treasure of colors.



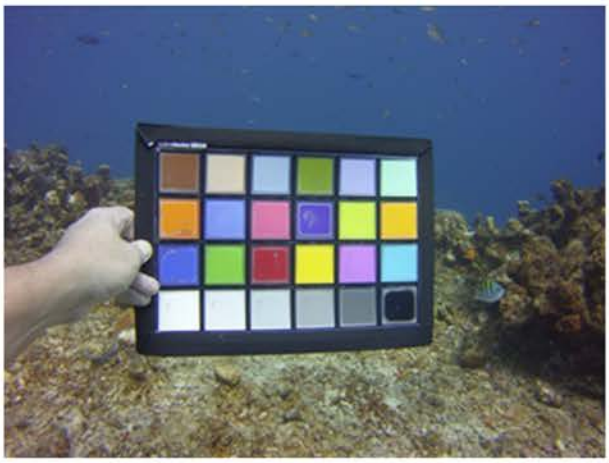
There are **two** primary methods to bring back the lost colors absorbed by the water:

Method 1: SeaLife underwater color-correction modes
[when not using photo-video light]

The SeaLife Micro camera includes underwater white balance settings that corrects for the blue scenery by adding red and yellow to the picture. Set the camera to Dive Mode for depths greater than 25ft/8m or Snorkel mode for shallower water. Dive mode setting uses "Underwater Deep" white balance which adds a more red and yellow to the image compared to Snorkel mode. These color correction modes work well down to about 60ft/18m, where the ambient light conditions are sufficient. At greater depths, there is a complete absence of reds and yellows, so color correction modes (or optical color filters) are not very effective.



Picture taken at 30ft in Land mode
(no color correction)

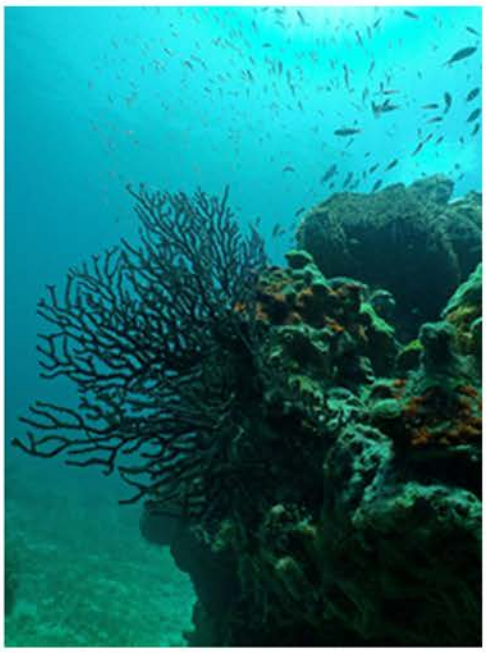


Picture taken at 30ft in Dive Mode
(w/ color correction)

Method 2: Use the SeaLife Sea Dragon Photo-Video Light



The Sea Dragon photo-video light accessory is the **most effective** way to restore color at any depth during the daytime or night. In addition to adding color and brightness to your UW pictures and videos, Sea Dragon lights are also helpful for discovering and observing sea creatures hiding in crevices and shadows. Taking pictures or videos is fast and easy with the Sea Dragon light because the Micro camera automatically adjusts exposure based on the illuminated scene. In other words, what you see on the display is how the picture turns out.



Without photo-video light



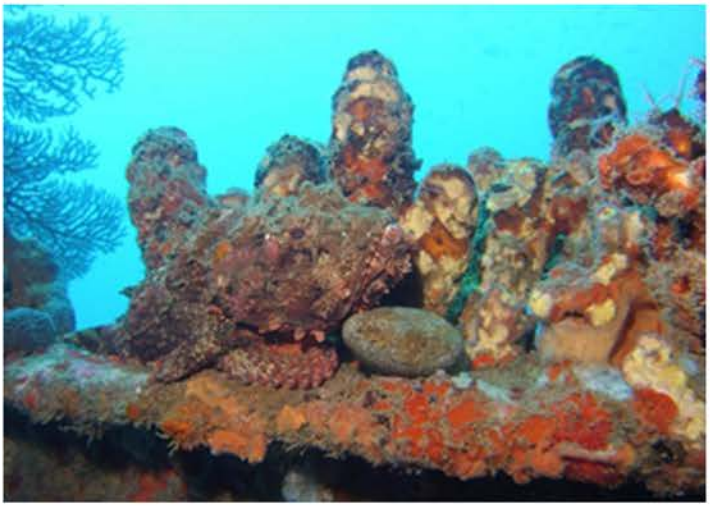
With a photo-video light

When using one or two photo-video lights, we recommend setting the Micro 2.0 to **"Camera + Light(s)" scene mode**. This scene mode uses "Underwater Shallow" as the default white balance (WB) setting, which adds a little color correction. In some darker shooting conditions, such as in shaded areas or night diving, the Underwater Shallow WB color correction causes too much red in the image. In that situation, we recommend changing WB to "Daylight", which is a close match to the color temperature of the light and results in natural colors. Keep in mind that when shooting beyond the effective range of the light, we recommend turning the light off and changing WB to "Underwater Deep" or Underwater Shallow" depending on your depth.

The White Balance setting is found under Menu> Image Settings> WB.



Camera + Ext Light mode
Underwater Shallow



Camera + Ext Light mode
Daylight

The above pictures of a scorpionfish were taken in a shaded area of a shipwreck. Camera was set to Camera + Ext Light mode, which uses Underwater Shallow white balance. You can see the fish and foreground are a little too red. The picture to the right was the same scene but white balance was changed to "Daylight" resulting in more natural colors.

III. Too Far Away

No matter how clear the water may appear, the microscopic particles suspended in the water will degrade image quality. Maximum shooting distance should not exceed 1/10 of the visibility, so 60ft vis means 6ft maximum shooting distance. Also keep in mind that the effective range of the brightest photo-video light is 3 to 4 feet. In other words, the closer you are to the subject, the better the results will be.

A general rule for achieving colorful and sharp underwater pictures is to keep your shooting distance within 4ft / 1.2m.



Too far from camera

When estimating your shooting distance, be mindful of the effects of water refraction. Water has a magnifying effect, so objects appear 33% larger and closer than they actually are. It tricks you into underesti-mating your shooting distance.



6ft/2m from camera



4ft/1.2m from camera

IV. Focus



The SeaLife Micro has a focus range of 12" to infinity. Pictures and videos taken within 12" shooting distance will be out of focus. The following out-of-focus picture was taken at 6" shooting distance without macro lens – too close.



Use the optional **10X Close-Up Lens** for closer shooting distance. The optional lens has a focus range of 6" to 24".



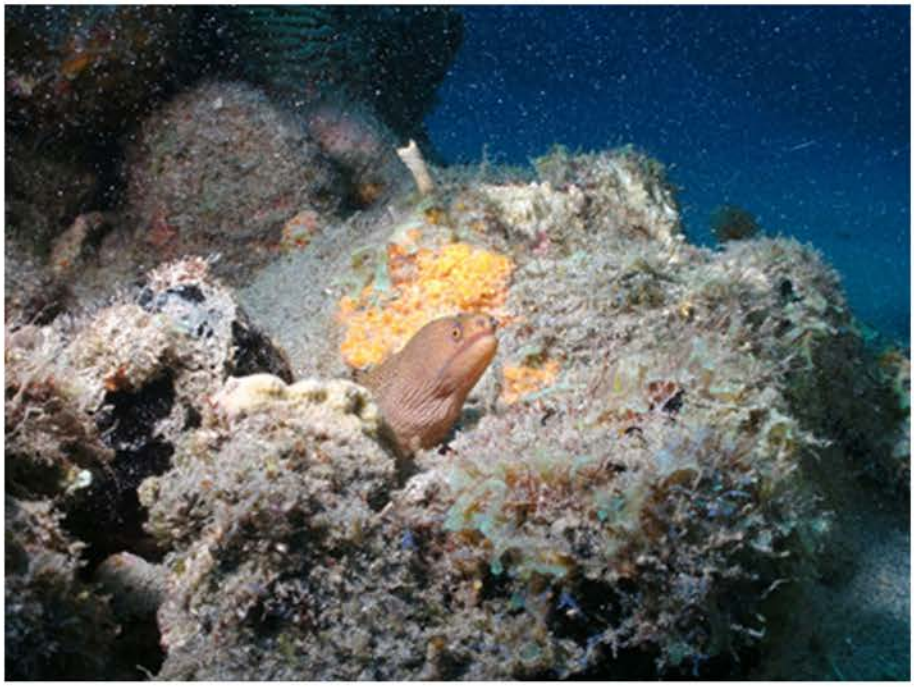


Close-up of frogfish (left) and queen angelfish (right) taken at 6" shooting distance with 10X lens

V. Backscatter

Did you know?

Even the clearest water contains plankton and tiny particles that you don't see until you light them up with a photo-video-dive light. The small white dots that appear in your underwater pictures are called backscatter. The closer the light is positioned to the camera lens, the more backscatter you will see.





The light is positioned closer to the camera lens and backscatter is visible in the upper part of the image.





The light is positioned away from the lens using the Flex Arm. There is practically no backscatter.



VI. Setting the Exposure

The SeaLife Micro camera underwater automatically adjusts exposure based on ambient lighting conditions. There are three settings that allow you to manually control the exposure and achieve the desired effect.

1) ISO – The lower the ISO number, the less sensitive the camera's image sensor is to the light and the darker the picture will be. Conversely, a higher ISO number increases the image sensor sensitivity to light resulting in a brighter picture.

You can select among 5 different ISO settings: Auto, 100, 200, 400 and 800, with Auto being the factory default setting. A higher ISO of 400 or 800 is typically used in low light conditions, like indoors. A lower ISO of 100 and 200 is typically used for brighter daylight shooting conditions. Using a higher ISO may also result in a grainer image, pixelated image because the image sensor picks up "noise".

When shooting without a photo-video light, we recommend using the Auto ISO, which automatically picks the optimal setting. When shooting with one or two photo-video lights, we recommend using ISO 100 for the sharpest images.



Over Exposed (Auto ISA & EV 0.0)



Better Exposure (ISO 100 & EV -0.3)

2) Exposure Value (EV) – A lower EV results in a darker image exposure and higher EV results in a brighter image. The difference between EV and ISO is that EV shifts the automatic exposure algorithm and shutter speed in addition to changing the image sensor's sensitivity to light. **We recommend keeping the EV at the 0.0 default setting when not using an external photo-video and -0.3 to -1.0 when using the light.** This lower EV results in a deep blue water background and contrasting colorful foreground.



Center Metering (over exposed)
Sea Dragon 2500 & Micro 2.0



Spot Metering (better exposure)
Sea Dragon 2500 & Micro 2.0

3) Metering - The Metering setting controls what part of the image frame the camera uses to automatically adjust exposure. There are 3 options: Center [default], Average, or Spot. In Center metering, the camera gives more weight to the center portion of the image frame when calculating the optimal exposure. Spot only uses the center of the image frame to calculate exposure whole average weighs the entire image frame equally. **We recommend keeping the metering set to center with or without photo-video light.** Use spot metering when shooting lighter colored subject with a photo-video light. That will help to prevent over-exposing on the bright object in the center.

VII. Motion Blur

Motion blur occurs when not holding the camera steady resulting in blurred pictures. To help control motion blur, the SeaLife Micro camera underwater modes uses minimum shutter speed of 1/30 second for dive and snorkel modes and 1/45 second for Ext Light mode but you still need to hold the camera steady when pushing the shutter button.



Motion blur from
not holding the camera steady



Sharp image from
camera held steady

Did you know?

Not controlling your buoyancy is the leading cause of motion blur, among other diving issues. You can't hold the camera steady if you are not steady. Master buoyancy control will greatly improve your photography and make you a better diver. Also, be calm and patient, and let that curious fish get closer and closer. Get up-current from a good spot and just drift motionless along with your camera in ready position. To stay in a camera-ready waiting position, approach your subject facing the current.



VIII. Shoot up, now down

Get some of the blue water in the picture. Colorful coral in the foreground will stand out against a mystic blue background. These color contrasts will add depth to your pictures. Shooting down normally results in poor contrast between the subject and background.



Camera aimed down:
Subject blends in background



Camera aimed up:
Blue backgroudn catpured

Did you know?





Shifting the camera angle to get some water in the background makes a dramatic difference.



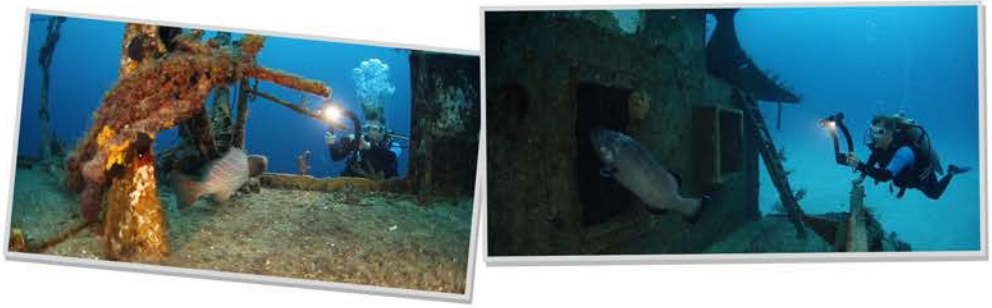
IX. Underwater video

The SeaLife Micro shoots razor sharp full HD video. While most divers prefer taking pictures, try shooting some videos to capture the element of motion and action to your underwater adventure. Here are a few tips on recording some great video.

1) Hold the camera steady on a particular scene. Avoid panning left, right, up and down unless you are following a subject. If you must move the camera, do it very, very slowly. Moving the camera around can make you feel sea sick when viewing the video on your computer or TV. Take note of how Hollywood movie productions rarely move the camera. They normally stop recording, move the camera to another angle and start recording. Later you can splice the two videos together.

2) Take short video clips. 10 to 15 seconds per video clip **MAXIMUM**. It's better to shoot a series of shorter video clips than one long one. You can splice the video clips together on your computer.

3) There is a lot of video editing software available. Before you go out and buy anything, check your computer for video editing software that you may already own. Windows Movie Maker or Apple iMovie are two very good FREE video editing tools that are easy to learn.





X. Learn from mistakes

Now that you've learned the basics for taking some great pictures and videos, there's no better way to improve your skills than learning from your mistakes. Keep shooting and learning. Don't for get to share your best pictures online with SeaLife.

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