

Olympus EPL-10 with AOI housing

by Phil Rudin

Olympus officially launched its first Micro Four-Thirds camera, the E-P1, in June of 2009 after a clever advertising campaign linking it to the very popular PEN film cameras of the 1960s and 70s.

Fast forward to February 2010 and the official announcement of the Olympus E-PL1, a simplified and less expensive addition to its Micro Four-Thirds camera line. This is an excerpt from my first article for uwpmag.com UWP#56 (Sept/Oct 2010) and it seems fitting that my 100th article for issue UWP#122 is a review of the Olympus E-PL 10.

The Olympus E-PL 1 and Olympus PT-EP01 housing was my first mirrorless camera system and I have not owned a DSLR since. To say that in the past eleven years mirrorless technology has advanced would be a gross understatement and Olympus has been responsible for many of the advancements.

Olympus E-PL 10

The Olympus E-PL 10 is one of the last Olympus branded cameras available now that Olympus imaging has been sold and rebranded as OM

Digital. The future of M43 cameras appears promising going forward with new camera bodies and lenses being introduced almost weekly.

The E-PL 10 is a quality entry level camera with an excellent 14-42mm F/3.5-5.6 EZ “kit” lens which is ideal for entry into interchangeable lens underwater photography. The AOI housing, the camera, kit lens, zoom gear and more retail for around \$1300.00 US. This is a smaller investment than many fixed lens consumer compact cameras and housings. The camera and kit lens alone retail for around \$650.00 US.

The E-PL 10 has a 16.1 MP live MOS sensor with the latest TruePic VIII image processor, UHD 4K video recording at 30 fps, a 3.0 inch 1.04 Dot 180 degree flip/touchscreen and up to 8.6 fps for stills with up to 14 frames in RAW and 220 frames in JPEG using electronic shutter. With the anti-shock first curtain shutter you get 4.8 fps.

The manual ISO ranges from 100 to 25600 with auto ISO from 200 to 6400 (with expandability to 25600). Unlike many other entry level DSLR and mirrorless cameras the flash sync for the E-PL 10 goes as high as



1/250th sec a big plus over the more common 1/160th for many others.

The camera is offered in Black, Brown and White, the test camera for this review is black so I can't comment on any issues with the white version causing reflected light within the housing.

The E-PL 10 has three axis in-body image stabilization up to 3.5 stops and a small built-in popup flash which I did not use for triggering external flashes. The BLS-50 rechargeable battery provides around 350 shots per charge which is often exceeded. Like most modern cameras of this type built-in Wi-Fi and Bluetooth permits seamless connectivity to smartphones and tablets allowing remote control of the camera and of course wireless image uploads. The E-PL 10 is what a mirrorless camera should be, small, light and compact with small lenses to match.



AOI E-PL 9/E-PL 10 Housing and Port Systems

AOI Limited is a Hong Kong based company founded in 1994 by a team of engineers and managers. They began manufacturing compact film cameras then transitioned into single-use cameras and underwater cameras before moving to underwater digital housings.

While AOI Limited has manufactured many housings branded under other manufactures names including Olympus they have moved onto creating products under the AOI brand name. The AOI branding has added growth and allows in-house product development all the way through to after-sale service. Having full quality control over development, delivery and pricing gives AOI an edge over all aspects of its business.



The AOI UH-EPL10 housing for Backscatter Underwater Photo & Video is a limited edition housing with an octopus design wrapped around the front half of the white housing with a clear rear door. The housing is the clamshell style hinged on the right side with a rotary lock on the left side.

The rotary lock has a red locking device which needs to be raised before the red button lock can be depressed to rotate the lock counter-clockwise. To close and secure the housing just reverse the process.

The rear door has a single white O-ring seal while the ports have two black ones. The front lower left side of housing has a gray push button that locks the ports in place.

The bayonet mounted ports have very small mark that aligns with a

small mark on the housing. Once the marks are lined up just push the port onto the housing and rotate clockwise one quarter turn until you hear the port lock into place. If you do not hear the click of the port locking try again.

The EPL10 housings ships with a port for the 14-42mm kit lens already installed. This port has the 67mm metal threads on front for mounting wet lenses, closeup lenses and the 67mm port cap that ships with the housing.

Under Oil Rig #HI 376A, Freeport, Texas, Olympus E-PL10, Olympus M. 14-42mm F/3.5-5.6 EZ lens at 14mm, AOI housing with AOI UWL-09 Wide Conversion Lens, two Inon Z330 Type II flashes, ISO400, F/6.3, 1/60th sec



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Baya Conch, Blue Heron Bridge, Florida, Olympus E-PL10, Olympus M. 60mm F/2.8 Macro, AOI UCL-09 +12.5 closeup lens, AOI housing, two Backscatter MF-1 Flashes, ISO400, F/13, 1/200th sec



James at Stetson Reef, Freeport, Texas, Olympus E-PL10, Olympus M. 14-42mm F/3.5-5.6 EZ lens at 14mm, AOI housing with AOI UWL-09 Wide Conversion Lens, two Inon Z330 Type II flashes, ISO400, F/3.5, 1/30th sec



The beauty of this camera, lens and housing combination is that the kit lens can cover most photographers needs. The AOI UCL-09 +12.5 closeup lens can be added to cover most macro needs and a Wet wide-angle lenses like the AOI UWL-09 Pro wide conversion lens can more than cover most wide angle needs.

The kit lens alone is versatile enough to keep many entry level photographers happy until other accessories can be added. This is a system that you can truly grow into and use for years.

AIO offers ports for the Olympus 60mm macro which also have the 67mm third for C/U lenses, a compact four inch dome port for the 8mm full

frame fisheye lens and several more.

AOI also offers lighting and lighting support. The housing also ships with an installed vacuum system and pump, installed hot shoe connector for dual optical flash triggering in manual mode, a very useful extended shutter release lever for use with a single or dual tray plus an LCD hood and lanyard.

This is a very well equipped housing for the price and at 728 grams (25.7 oz) it travels well. Depth rated to 45 meters (148 feet) the housing also conserves battery power using a mini USB (included) to charge the flash triggering device rather than using the battery draining on-board flash. After a full charge I did

four dives a day without need for a recharge between dives.

The housing has no camera tray so the camera just drops in with the lens forward and is aligned by several rubber pads. Remember to push the rubber zoom gear over the lens prior to installation in the housing. If the gear is aligned correctly you should be able to zoom the lens by turning the camera on and then turning the zoom dial on the left top of the housing. Remember that the kit lens is a power zoom lens not a manual zoom so the camera must be on to test zoom the lens.

At the top inside of the housing is the vacuum and flash triggering battery unit. The unit has a small on/

off switch which is turned on prior to sealing the housing. To charge the vacuum/triggering unit remove the hot shoe sync cord from the unit and use the mini USB slot to charge the battery with the included Mini USB cord while the camera is turned off. When plugged-in, the LED light will flash green and when it goes to solid green the unit is fully charged. Next the removable hot shoe cord is plugged back into the USB port on the sending unit and then into the camera hot shoe.

Once the vacuum/trigger switch is turned on a small blue flashing light will appear. Next close the rear housing door and seal with the rotary lock. Next turn on the camera and test

fire the flash to be sure the system is working. Once the flash is working turn off the camera and flash. Then remove the cap from the vacuum valve and draw the vacuum.

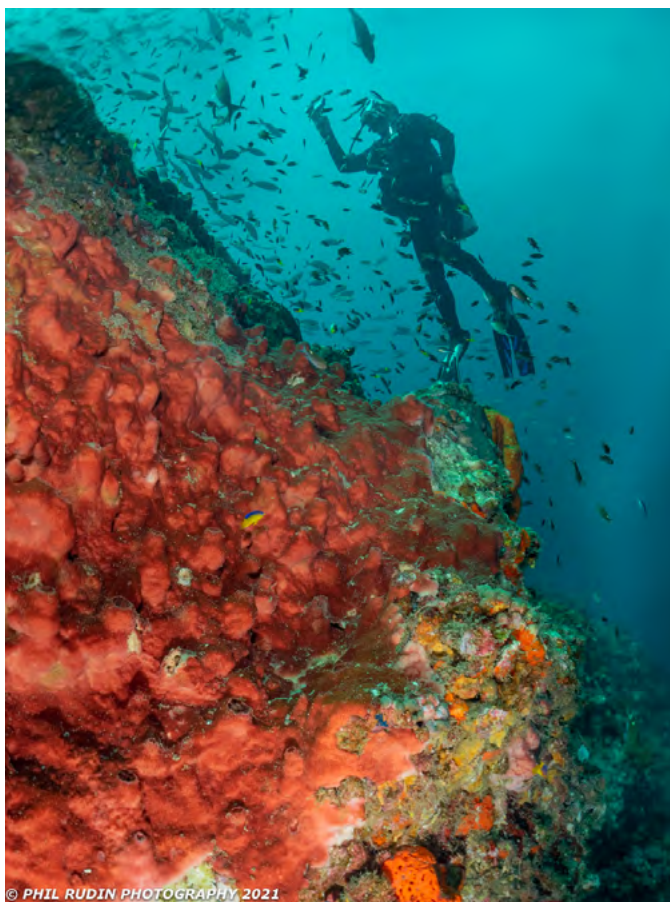
With the small kit lens flat port you only need about five or six pumps before you see the blue flashing LED start to flash orange and then solid orange. Stop on solid orange and if you have drawn to much vacuum the LED will blink between red and orange. If this happens release the vacuum by turning the red top of the vacuum valve counterclockwise and start over. After a short time, about two minutes, the LED should turn from solid orange to a slow blinking green LED and the housing is then vacuum tested and ready for the water.

I used the housing with the AOI dual handle tray which attaches to the bottom of the housing using two of the three tripod mounting threads in the metal plate.

The tray is equipped with the standard one inch ball heads for mounting lighting and support arms. I was able to easily integrate my own arms, clamps and flashes onto the tray and use my fiber optic cords directly mounted into the two fiber ports on the front top of the housing.

The extended trigger release included with the housing made triggering the camera easy while on the tray. For those not using a tray the shorter trigger release installed when the housing ships will work better. Installing the longer trigger release only requires removing one Allen screw with the included wrench.

The housings control layout is user friendly and includes push buttons and three wheels. Holding the housing rather than using a tray was simple with the large grip on the right side of the



housing. This would be the preferred configuration for snorkeling without lights or with a single small light mounted to the metal cold shoe on the top go the housing.

Field testing the E-PL 10 system

For this review I used two Inon Z-330 type II flashes for wide angle and a pair of the Backscatter MF-1 flashes for macro. I also used the Olympus 60mm F/2.8 macro lens with dedicated AOI flat port and the AOI UCL-09 C/U lens for some super



Seahorse, Blue Heron Bridge, Florida, Olympus E-PL10, Olympus M. 60mm F/2.8 Macro, AOI housing, two Backscatter MF-1 Flashes, ISO400, F/13, 1/200th sec

Stetson Reef, Freeport, Texas, Olympus E-PL10, Olympus M. 14-42mm EZ lens at 14mm, AOI housing with AOI UWL-09 Wide Conversion Lens, two Inon Z330 Type II flashes, ISO400, F/4, 1/100th

macro shots.

For wide angle I used the AOI UWL-09 Pro wide conversion lens with the Olympus kit lens, flat port and the additional buoyancy collar.

The buoyancy collar is two pieces of close cell foam that mount around the lens to the rear of the wide converter dome shade. The two piece collar is held in place by two rubber O-rings that mount over the collar followed by a velcro strap that wraps around the entire unit. This is an excellent system and packs much more easily than a single donut style buoyancy collar.

With the wide lens and buoyancy collar the



Ginnie Springs, Florida, Olympus E-PL10, Olympus M. 14-42mm F/3.5-5.6 EZ lens at 14mm, AOI housing with AOI UWL-09 Wide Conversion Lens, two Inon Z330 Type II flashes, ISO400, F/8, 1/125th sec

Most of my work was done shooting with the ISO set in the 100 to 400 range and shutter speeds from 1/15th to 1/250th sec.

I have used the Olympus 60mm F/2.8 macro for many years now and it is one of my favorite macro lenses for a number of reasons. The lens has focus limiting which allows you to shoot in a range between 0.19 (1:1) and 0.4 meters (15.75 inches) which I use when my intent is to shoot macro at about 1:3 or greater magnification. The down side is the lens is set before the camera goes into the housing and if a larger animal comes along you can't move back to focus beyond 0.4 meters and still acquire sharp focus.

With the added UCL-09 closeup lens and 60mm at 1:1 an image of about 10mm on the long size fills the frame, so quite close.

Auto focus was very accurate with both lenses and only slows a bit when focusing on subjects in the 1:1.5 to 1:1 range where DOF is shallow. I would rate the AF as very good for such an inexpensive camera and kit lens.

In low light situations the addition of a small focusing light will assist with shallow DOF focusing.

I have always liked the 4:3 reproduction ratio over the 3:2, having a slightly taller image on the short side allows you to fit images more easily onto several types of media including print. For the web I find you need to crop less to fill the frame.

This system is smaller than any of the other

Olympus M43 systems I have used and it is a joy in the water. The AOI system can be expanded with a number of support arms and clamps, M67 flip adapters for mounting C/U lenses, additional dome and flat ports, a variety of magnification strength C/U lenses, several types of fiber optic cords, an AOI flash and more.

The AOI housing also supports the Olympus E-PL 9 camera if readers already own that camera. The non-branded AOI housing also comes in white (without the cool Octopus trim) and black.

Anyone interested in an entry level ILC that can be expanded into a complete underwater photography system should consider this system if you don't need high numbers of megapixels.

I would like to thank Backscatter Photo & Video (backscatter.com) and their excellent staff for providing test equipment for this review.

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www.backscatter.com



www.uwpmag.com

system is well balanced and easy to use with one hand, all day long.

This compact system is ideal for everything from CFWA within millimeters of the port glass too wide reef scenes and large fish or mammals. Because the E-PL 10 has the small M43 sensor it has greater depth of field compared to a full frame sensor at like F/numbers.

Both wide and macro lenses can be used in the F/4.5 to F/9 range with exceptional corner to corner sharpness. This is a very compelling upside for the Olympus camera and allows you to use a lower ISO and increased shutter speeds in many cases.

Don't settle for 2nd best



Film - No Filter No
White Balance



Digital - No Filter Manual
White Balance



Magic Filter Manual
White Balance

Digital cameras have opened up new possibilities to underwater photographers. For available light photography manual white balance is an invaluable tool for restoring colours. But when you use it without a filter you are not making the most of the technique. You're doing all the hard work without reaping the full rewards. These three photos are all taken of the same wreck in the Red Sea. The left hand image was taken on slide film, which rendered the scene completely blue. The middle image is taken with a digital SLR without a filter, using manual white balance. The white balance has brought out some of the colour of the wreck, but it has also sucked all the blue out of the water behind the wreck, making it almost grey. The right hand image is taken with the same digital camera and lens, but this time using an original Magic Filter. The filter attenuates blue light meaning that the colours of the wreck are brought out and it stands out from the background water, which is recorded as an accurate blue.

www.magic-filters.com