

Sony A7R III and Acquapazza

APSO-A7R3 housing field review

by Phil Rudin

My first review of a Sony A7 full frame mirrorless camera was in UWP issue #86 in Sept/Oct 2015 covering the A7 II followed by an A7R II review in issue #90 May/June 2016. During the current release cycle Sony has introduced the A7R III first on Oct. 25, 2017 followed by the A7 III which has just started to ship in April 2018. Sony has also released the High speed A9 sports camera and I am sure an A7S III video oriented body will be announced in the near future. All of these cameras have the same magnesium alloy body and the control placement is near identical, the A9 has an additional Drive/Focus mode dial on the left top of the camera. At this time I have both the A7R III and the A7 III in house. Both cameras work in the Acquapazza APSO-A7R3 housing which was shipped to me prior to the A7 III release.

Acquapazza is part of Yamamoto Industry Co. founded in 1969 and based in Japan. The company's technical expertise was in the world of motor racing where they produced products for both cars and motorcycles that shaved 1000th's of a second off

the racer's times. The company has since turned its focus to the ocean and its technical skills to producing underwater housings that are both fashionable and extremely functional.

I met Mr. Yamamoto at the DEMA show in November 2017 and had an opportunity to look at his current Sony APSO-A7R II housing and discuss development of the APSO-A7R III housing. When I expressed an interest in reviewing the APSO-A7R III housing Mr. Yamamoto offered one for review in advance of the product release.

Sony Alpha A7R III camera

Sony's new flagship Alpha A7R III is one of the third generation Sony full frame mirrorless cameras and the second generation to include sensor based in-body image-stabilization or (IBIS). Sony debuted the first Alpha A7, A7R & A7S cameras during 2013 when they were the first mirrorless interchangeable lens cameras to feature a full-frame (36 X 24 mm) image sensor with a body the size of the current Olympus



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E-M1 II & E-M5 II mirrorless cameras. Sony has made it quite clear that they intend to challenge Canon and Nikon in the pro and "Pro-Sumer" markets by focusing heavily on their full-frame lineup of mirrorless cameras. Many readers are familiar

with the A7R II and I would like to point out some of the upgrades in the A7R III that will be useful for underwater shooters.

The ISO range on the A7R III has been expanded to 100-32000 from 100-25600, the Electronic

viewfinder is now 368K dot v. 235K, frame rate has been increased from 5 fps to 10 fps in continuous shooting mode, focus points have been increased from 399 to 425 and the LCD resolution has increased from 1229K dots to 1440K. One of the biggest improvements for underwater photographers is a huge increase in battery life from CIPA rating of 290/340 (EVF/LCD) shots to a rating of 530/650 shots per charge. This is a figure that varies depending on the lens being used. With the Sony 90 F/2.8 macro I was getting results in the 140-200 image range with A7R II with the new A7R III that number has at least doubled. Dynamic range has also increased from 13.9 to 14.7 with a DXO rating of 100 up from 98 for A7R II. The A7R III has also added dual card slots with one supporting UHS-II ultra high speed cards. The second large improvement for underwater photography is in auto focus speed and accuracy even in low light. The AF speed particularly with the Sony 90mm macro was an issue with the A7R II. Thanks to the faster processing speed, improved circuitry, increase in AF points and more this is no longer an issue even at ten frames per second. The new body also has the same AF point joystick found on the Sony A9 which allows you to quickly move the focus points around in the frame.

Sony currently offers a verity of excellent lenses with weather sealing which are well suited to U/W photography. In addition several other lens manufactures are making direct mount auto focus and manual focus lenses for the Sony FE mirrorless cameras. Lens adapters like the metabones, Sigma and others have also opened up the ability to use Canon, Nikon, Sigma and many other lenses with full AF and/or manual control as well. Many photographers have made the move from Canon or



Hawksbill Turtle feeding on sponge, White House Reef, Cozumel Mexico, Sony A7R III, Canon 8-15 F/4L Fisheye USM lens, Metabones Adapter, Acquapazza APSO-A7R3 housing with Inon Dome Port II with shade removed, Two Ikelite DS-161 strobes with dome diffusers, Manual, ISO-400, F/14, 1/105th sec, at 15 mm

added the Sony Alpha A7R III body to their bag and still use their complete line of Canon lenses with an adapter.

Most photographers when they hear the word mirrorless camera naturally assume that this equates to a much smaller and lighter overall underwater camera system compare to like quality DSLR camera systems. This is not entirely the case with

the Sony A7r III system and should not be the only consideration when moving to a full frame camera.

While the 42.4MP A7R III body at 627G (22.11oz) and 126.9 x 95.6 x 73.7 mm is smaller than the Canon 50.6MP 5DR body at 845G (29.81oz) and 152 x 117x 76 mm or the slightly heavier Nikon D810 the differences in systems for the most part ends there.



Split shoe, Car Wash Cenote Yucatan Mexico, Sony A7R III, Canon 8-15 F/4L Fisheye USM lens, Metabones Adapter, Acquapazza APSO-A7R3 housing with Inon Dome Port II with shade removed, ISO-200, F/6.3, 1/250th sec, at 8 mm, Two Ikelite DS 161 strobes with dome diffusers, Manual.

While mirrorless systems like Micro43 are able to incorporate much smaller lenses this is not the case with quality 35 mm full frame mirrorless lenses. Larger sensors mean bigger

lenses with heavier glass to cover the larger full frame sensors. This is a simple issue of physics and while some mirrorless lenses for full frame can be designed a bit smaller and

lighter than DSLR lenses those used for U/W photography remain about the same size and price as their full frame DSLR counterparts.

As an example I shot the Sony A7R III with the Sony 16-35 mm F/4 zoom, Sony 90 mm F/2.8 macro and Canon 8-15 F/4 Fisheye with metabones adapter for this review. The 16-35 mm on release in 2015 retailed at \$1348.00USD, weights 518G (18.27oz) and is 78x98.5mm (3.07x3.88 inches) while the Canon 16-35 mm F/4L lens on release in 2014 retailed at \$1199.00USD, weight 615G (21.69oz.) and is 82.6x112.8mm (3.25x4.44 inches) not a great deal of difference.

The Sony 90 mm F/2.8 on release in 2015 retailed for \$1098.00USD weight 602G (21.23oz.) and 79x130.5mm (3.11x5.14 inches) while the Canon 100 mm F/2.8L on release in 2009 retailed for \$1050.00USD weight 625G (22.04oz.) and 77.7x122.9mm (3.06x4.84 inches). Again not much difference between these lenses which both focus at 1:1.

With wide angle lenses like the 16-35mm on mirrorless full frame you can get away with slightly smaller ports and still get decent corners at F/13 and above.

Image quality with the A7R III is more than impressive at any ISO setting you would normally use underwater. The high resolution from

the 42.4MP sensor allows a wide margin for cropping images. Be aware that high resolution full frame sensor cameras do not allow much margin for error when it comes to focus and depth of field. Any mistakes in focusing will be obvious in the high res image and no amount of post processing will correct the problem.

The Sony A7R III retails for around \$3198 / £3199 / body only.

Acquapazza APSO-A7R3 Housing

One of the advantages of the Acquapazza APSO-A7R3 housing is that both the Sony A7R3 and A73 camera bodies use the same magnesium alloy frame with almost identical button placement so one housing can be used with both cameras with little to no modification.

The first thing other divers noticed about my test housing while working on this review was the attractive blue color. Acquapazza offers sixteen different colors from basic black which is standard to optional light green, red, violet, champagne and many more.

When my test housing arrived I immediately wanted to mount the vari-angle grips which are included as standard equipment with the housing. These grips come with spacers which allow you to move the grips in and out



(Left) Acquapazza APSO-A7R3 housing with Optional slanted back and Vari-Grips



Acquapazza housing with Acquapazza 170 dome port, Vari-Grips set back for optional slanted back for LCD

for use with heavy dry gloves or no gloves at all.

What I like most about the grips is that they can be angled in a verity of positions to best suit the shooting style. The grips can be angled back if you are shooting video or stills using the LCD screen or pushed forward for use with the standard flat back and accessory optical viewfinders like the Inon 45 degree finder I used for macro. The largest spacers accept a standard size threaded ball head to allow mounting arms and lighting equipment to the housing.

The standard housing back has a flat LCD viewing window and a mounting point for any of three

optional Inon optical viewfinders. You can also add an optional slanted back cover with a 45 degree LCD window and no EVF finder. Both backs secure to the front half of the housing using two simple cam locks. Just depress the locking buttons and turn the cam lock 45 degrees to open.

The front part of the housing has two white O-rings which seal the housing half's together for a dry and secure fit. I have used several housings with a double O-ring sealing system and found them to be very effective.

Both housing backs have seventeen push buttons and three wheels for Mode, rear camera dial

and EV+/-dial. A push lever on the right side of the housing can be used to start/stop video or for rear thumb focus.

The Sony A7R III menu allows you to program most function buttons with just for about any available function a person would want. The top right array of buttons is setup for the five button Joystick wheel plus the AF on and AEL (no AF/AEL switch like the A7R II).

The bottom right array of function buttons include Fn, the five button wheel functions, review and trash. The C3 and menu buttons are on the top left side of the housing back along with a pressure release valve.

On the far left side of the optional angled housing back is a control for the LCD which I found quite useful while shooting wide angle and macro. It allows you to change the angle of the LCD screen from about 45 degrees to almost flat.

In landscape the 45 angle works best while in portrait the flatter view of the LCD worked best for me. The front half of the housing uses dual white O-rings to seal the ports and extensions. Just lineup the small locking slot on each port or extension with the triangle mark on the bottom of the housing and press the port over the O-rings and onto the mount. Then rotate the port about 30 degrees



Acquapazza housing with camera installed

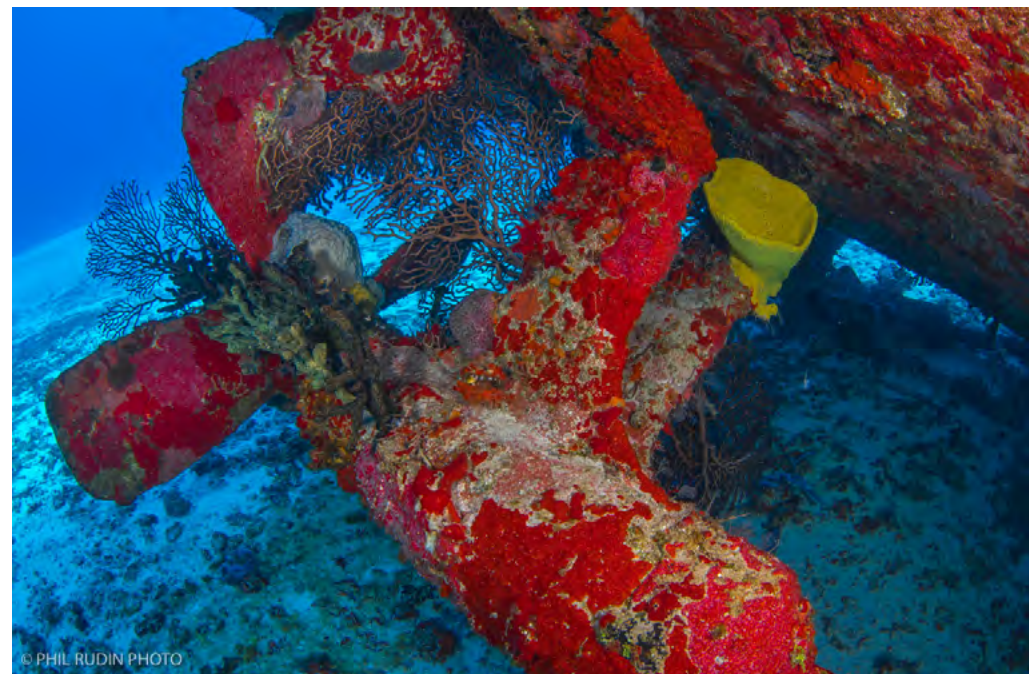
clockwise until the port locking device clicks into the port locking slot. Depress the port lock and reverse the process to remove the port.

Remember to occasionally clean and re-grease all of the O-rings. Inside the front half of the housing is the camera tray which has a standard tripod mounting screw. Once the camera and lens are attached to the tray it can be remounted into the housing where it is held in place by a small friction lever on the bottom of the tray. The left side of the housing has the main zoom control and the right side has the aperture control dial, shutter release, on/off switch and C2

& C4 buttons.

The top of the housing has the on camera flash on/off switch and mounting points for two fiber optic cables. The top of the housing also has an M14 mounting point on the right and M16 on the left for Flash sync sockets, HDMI out and more. The bottom of the housing also has two standard mounting points for housing trays, other lighting accessories and tripod.

As noted above I used three lenses for this review, Sony FE 90 mm F/2.8 macro G OSS, the Sony Vario-Tessar T* FE 16-35 mm F/4 ZA OSS and the Canon 8-15mm F/4 Fisheye



C-53 Wreck Starboard Prop, Cozumel Mexico, Sony A7R III, Canon 8-15 F/4L Fisheye USM lens, Metabones Adapter, Acquapazza APSO-A7R3 housing with Inon Dome Port II with shade removed, ISO-400, F/13, 1/125th sec, at 14 mm, Two Ikelite DS 161 strobes with dome diffusers, Manual

zoom with Metabones adapter. All three lenses are well constructed with weather sealing and handle the higher resolution A7R III (42.4 MP) sensor with outstanding results.

The 90 mm macro is without question the sharpest macro lens I have ever used with any camera. Acquapazza also has port systems for Sony FE 12-24 F/4 zoom, 16-35 F/2.8, 24-70 F/2.8 and F/4, 28-70 F3.5-F5.6, 28F/2 with the 16 mm fisheye converter, 50F/2.8 macro and Sigma A mount 150 & 180

APO macro lenses with the LA-EA3 adapter. Sigma and others have also announced or are in production on direct FE mount lenses which I am sure will also be considered for support going forward.

I used the Acquapazza housing with a third party Nikonos bulkhead connector and wired Ikelite DS 161 strobes shooting in manual mode. The APSO-A7R3 housing also supports fibre optic TTL and manual using the Sony HVL-F20M land strobe mounted to the camera and placed in

the down position inside the housing. The housing has an ingenious magnetic control switch for turning the strobe on and off while it is inside the housing. Once the Sony strobe is turned on you have full control of off camera strobes like the Inon Z-240 and Z-330 via fiber optic cables.

Battery Life for video can be increase with the optional Anker PowerCore 10000 by removing the Sony strobe from inside the housing. The PowerCore cannot be used in conjunction with the flash sync cord for stills. The PowerCore uses a standard L type micro USB cable to connect to the camera.

One of the first things I noticed about the housing after I installed the Veri-Grips was how small and light it is. For a FF mirrorless housing it weights in at only about 2.19 Kilograms (4.82lbs) including the Vari-Grips and slanted rear cover.

The housing has a depth rating of 100 meters (328ft) with the provided flat back and to 200 meters (656ft) with the slanted back. You will need to contact Acquapazza for advice on which ports can be used at depths beyond 75 meters (246ft).

The housing retails with the flat back and Vari-Grips for around \$3200 US for ports, extensions, gears, custom colors and more contact your authorized Acquapazza dealer.

Field testing the Acquapazza APSO-A7R3 housing

My field testing of the A7R III/APSO-A7R3 took place in Mexico on the island of Cozumel and in the Cenotes of the Yucatan. The three lenses I used were setup as follows. The Sony FE 16-35 mm F/4 zoom (UWP #88 review) was setup with the Acquapazza 170 dome port, the 1635 extension



with focus knob and the 1635Z gear LB. Both of the Acquapazza zoom gears I used consist of two parts. The main gear slides over the lens zoom ring and is held in place by a threaded ring that slides into place over the main zoom ring. As with all gears it took a bit of time to locate exactly where the gear should be placed for best results.

While I had a focus gear for the Canon 8-15 Fisheye zoom I just found the auto focus to work so well that I never tried the manual focus gear. Even in the low light of the Mexican Cenotes I was able to use the AF with excellent results. I tried to keep the aperture at F/13 or above for best corner sharpness but some of the images in the article are well below F/13 and I will let readers be the judge regarding corner sharpness. The Canon 8-15 F/4 fisheye zoom (UWP #93 review) was configured with the Inon Dome Port II with removable shade, Acquapazza C815 port extension with focus wheel



(Top left) Split shot, Santa Rosa Wall, Cozumel Mexico, Sony A7R III, Canon 8-15 F/4L Fisheye USM lens, Metabones Adapter, Acquapazza APSO-A7R3 housing with Inon Dome Port II with shade removed, ISO-200, F/14, 1/125th sec, at 8 mm

(Above) Cenote Guide Miki, Dos Ojos, Yucatan Mexico, Acquapazza Housing, 170 Dome Port, Sony A7R III, FE 16-35mm F/4 ZA OSS lens at 17mm, Two RGBLue System-02-2 lights, Iso-6400, F/9 1/30th sec



Sailfin Molly, Cenote Edan (AKA Pondarosa) Yucatan Mexico, Acquapazza Housing, Acquapazza 90 macro port, Sony A7R III with FE 90mm F/2.8 Macro G OSS lens, Two Ikelite DS-161 Manual, ISO-200, F/18, 1/250th sec

and zoom gear C815 Z. This lens can be used with the Metabones or Sigma lens adapters.

If you intend to use the circular fisheye end of the lens the dome shade must be removed to prevent vignetting. With the Sony 90 macro I used the Acquapazza E90M macro port. This port is light weight, has the standard 67 mm threads for mounting closeup lenses and a block on top with three different thread sizes for mounting focusing lights and other accessories. All of the lenses can be mounted onto the camera and installed

from the rear of the housing while the ports are in place.

I used two Ikelite DS-161 strobes with a Nikonos dual sync cord and two Ikelite dome diffusers. The dome diffusers widen and soften lighting much like a small soft box for land photography. The dome diffusers work well for both wide angle and macro with about a half stop loss of light. I also only used two 20cm (8 inch) strobe arms which made the complete system quite small and easy to carry.

Once in the water the housing



Cenote Guide Miki, Tajma Ha, Yucatan Mexico, Acquapazza Housing, Acquapazza 170 Dome Port, Sony A7R III with FE 16-35mm F/4 ZA OSS lens at 16mm, Two RGBBlue System-02-2 video lights, ISO-3200, F/6.3 1/20th sec

very easy to manoeuvre using just my right hand. After several hours a day in the water I experienced very little fatigue in the wrists and forearms.

Using the LCD screen for focus and playback with the slanted back focus was quick and accurate shooting in AF-S with front shutter release. The Sony A7R III also has an excellent electronic viewfinder which I used while shooting macro with the flat back and an Inon 45 degree optical finder. I also used AF-S and front shutter release for macro. I tried out the rear focus which also works very

well however the AF on this camera with the front shutter release was very accurate and fast so I used it for the bulk of the review period. If you do not intend to buy the optional slanted LCD back I would recommend adding the optional Inon 45 or 180 degree optical viewfinder to the housing if you intend to use the EVF frequently.

The zoom/focus control is smooth and easy to reach with one finger. I controlled most setting changes like focus mode, frame rate, focus area, flash mode, ISO and more from the control display on the LCD

accessed through the Fn button. This makes control changes very easy to see while you navigate through the settings using the arrow buttons.

I had the front (F/stop) and rear (shutter speed) control wheels setup to make those adjustments. The slanted back plate control lever on the left side allows you to move the LCD forward almost flat against the rear of the camera to prevent ambient light from affecting the view of the LCD. With the LCD slanted out to 45 degrees the screen is much easier to see while holding the housing below eye level and looking down into the screen. I found this to be a very comfortable shooting position for both stills and video.

Moving the LCD in closer to the camera body helps when holding the housing in the vertical (portrait) orientation and away from your body. While the camera EVF has a dial for diopter control each person has different needs when it comes to using an LCD. I tend to hold the housing closer to my mask while others vision requires holding the housing farther away. I am old school guy and generally favor the EVF over the LCD but was hard pressed to see any difference in image sharpness between the two with all things being equal.

If your goal is the very best image quality using a full frame sensor camera with excellent lenses

then you should consider the Sony Alpha A7R III/Acquapazza APSO-A7R3 system.

After over twenty dives with the Acquapazza APSO-A7R3 I have come away with a very positive impression of the Acquapazza housing line and hope to review future products.

I would like to thank Mr. Yamamoto for the loan of the equipment for this review, contact acquapazza.com or through their FaceBook page.

I would also like to thank Miki Kurimoto Owner of Scuba Freedom in Playa Del Carmen, Mexico. Miki was an excellent guide for all of my Cenote diving needs. Miki can be reached at scubafreedom.com and on her Miki Kurimoto FaceBook page.

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www.scubafreedom.com

www.acquapazza.jp/en





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