

# Sony Cyber-Shot DSC-RX100 III & Fantasea FRX100 III

by Phil Rudin

DEMA, the Dive Equipment & Marketing Association, show was held once again during November in Las Vegas, Nevada USA. Every November dive equipment manufacturers from around the globe meet for the United States largest diving event. Included in the show is a large image resource center dedicated to the art of underwater photography and videography. This years show much like past shows debuted many new and interesting products for underwater photographers & videographers including the new Fantasea Line FRX100 III underwater housing for the Sony RX100 III compact camera which is the subject of this review.

## Sony Cyber-Shot DSC-RX100 III

Compact cameras have been very popular among underwater photographers for years both as reasonably priced entry level systems and for more advanced underwater shooters.

The Sony Cyber-Shot RX100 line of compacts has generated a great

amount of interest since first being introduced in late 2012. Now in its third incarnation the RX100 III retains all of the original features that made this camera so popular plus a few interesting updates.

The large 20.1 MP “one inch” sensor (13.2 mm X 8.8 mm) is the best in class for a camera of this type. This sensor falls between the larger M43 sensors for mirrorless cameras and the more commonly used 1/2.3 inch to 2/3 inch sensors found in most of today's digital compacts. This larger sensor provides excellent image quality for a truly pocketable compact camera.

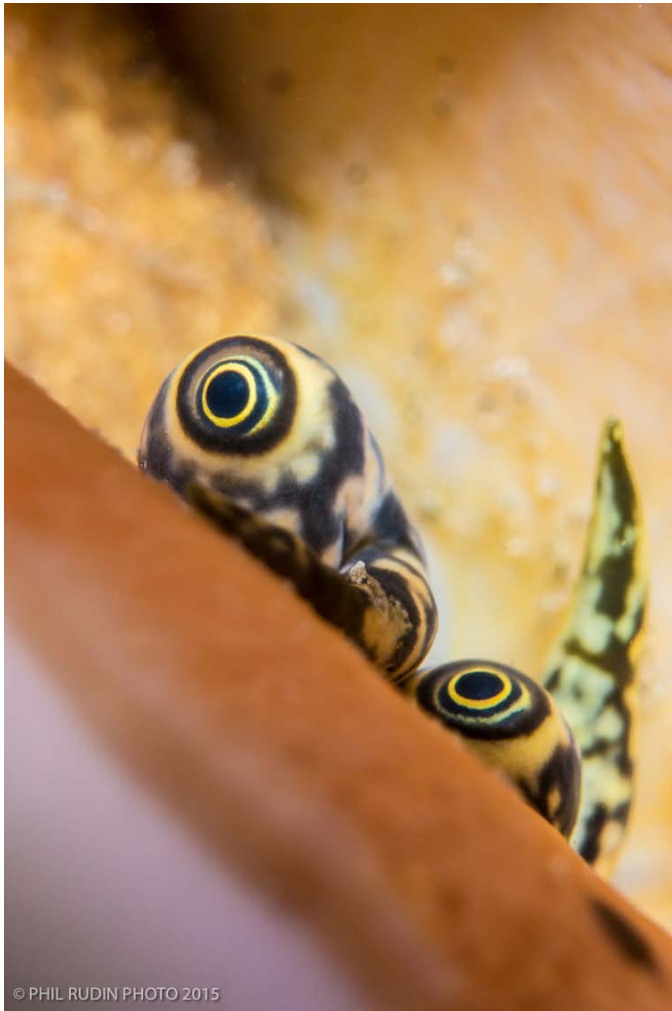
Sony has replaced the Carl Zeiss Vario-Sonnar T\* 28-100 mm f/1.8-F4.9 found in the first two RX100's with a new faster Carl Zeiss Vario-Sonnar T\* 24-70 mm F/1.8 to F/2.8 lens. A pop-up SVGA OLED 1.44M dots electronic viewfinder has been added (not for use in this housing) along with clean HDMI output, 1080/60P video with full sensor readout and 50Mbps XAVC S support. A customizable front lens ring and more have been added to the



RX100 III version of this excellent compact.

The added video features make this camera equal useful as an

underwater still or video camera. The camera uses the same NP-BX1 4.5Wh battery found in the RX100 II with the same 320 photo captures



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found in the older models; however when using the EVF (topside) the captures rate drops to around 230 according to CIPA standard tests.

The camera also comes with a battery charging cable that plugs directly into the camera with no separate battery charger being provided with the camera. The charging cable is quite short; in fact I could not plug it into the wall socket next to my desk and put the camera on top of the desk because the cord was too short. I had to plug into a



*Seaweed blenny, 70mm, ISO 80, F/8.0, 1/500th, SAGA +15 closeup lens, one Inon Z-240 Strobe.*

*Conch Eyes, 68mm, ISO 80, F/8, 1/500th, SAGA +15 closeup lens, Two Inon Z-240 Strobes.*

countertop plug which is a less than ideal situation for a traveling photographer. If you want to charge a second battery while using the camera you need to buy an external charger as an accessory. This seems shortsighted to me and a real negative for Sony. I understand that even Sony's high-end "pro" line of full frame cameras, the A7, A7s and A7r, do not ship with battery chargers included.

I also found the RX100 III menu to be a bit less than user friendly with only marginal improvement over the NEX line I tested several years ago. These issues aside I found this camera worked quite well underwater in average or better lighting conditions. In dim light I needed to add a focusing light for best results. This is an issue quite common to cameras with smaller sensors and nothing to worry about. Images were quite crisp and sharp even at 100% and I found the color pallet to

quite pleasing.

At the 70mm end of the lens range minimum focus distance is around 30cm (12 inches) and 5cm (2 inches) at the 24mm wide end of the range. This lens configuration favors the wide end of the lens and reduces magnification on the macro end of the lens. Other compact offerings like Canon G16 and Panasonic LX7 offer better macro options but with a loss on the wide angle end of those lens for the G16. Outstanding video performance is one of the major strengths of this camera.

## Fantasea FRX100 III Housing

Fantasea Line is an international company with world distribution of water sports photo products and accessories. The Fantasea product line includes an assortment of affordable underwater housings for Canon PowerShot, Nikon Coolpix and Sony Cyber-Shot compact cameras. Fantasea also offers a complete line of underwater optics, adapters, lens holders, color filters, arms, trays, connectors, underwater lighting, LED lighting and more. Fantasea has established a reputation for affordable equipment and excellent customer service.

The Fantasea FRX100 III housing for Sony RX100 III is quite small for an injection molded polycarbonate housing offering complete control over all camera functions. Without accessories the housing is 15.5 x 14.5 x 12cm (6.25 x 5.75 x 4.75 inches)

This housing is rated to a respectable 60 meters (200 feet) and is ergonomically designed in every respect for a housing of its size. The main issue with housings of this size in general is that with the growing number of controls especially on the rear of the housing the control buttons tend to be

bunched together making it difficult to distinguish between control functions when wearing gloves.

The control wheels, zooming lever and push buttons on the Fantasea housing are large, well laid out and nicely labeled for ease of use. The housing is a clam shell type housing with the front and rear sections of the housing held together by the hinge on the left side of the housing when viewed from the rear.

The right side of the housing has a rotary cam locking device which will not open without depressing and holding the red cam locking latch. The front and rear sections of the housing each have an o-ring providing an excellent dual seal when the housing is locked shut.

The front half of the housing is made from black polycarbonate while the rear door is clear allowing a view of the interior camera controls and any leakage into the housing. A leak detection system is also included with the housing which has both a red flashing light and audible alarm in the unlikely event of a leak. The leak detector uses a 3V lithium CR 1220 battery which can be commonly found in most parts of the world.

The large three inch LCD has a removable anti-glare hood which attaches to rail at the top and bottom of the LCD on the rear of the housing. All attachments come with a lanyard

so they won't be lost if removed or knocked loose.

Above the LCD is a dial which can be turned counter-clockwise to popup the cameras onboard flash. This is a very useful control when using external strobes being fired with fiber optic cords. On more than one occasion I have forgotten to pop up the camera flash before going in the water and it is a real pain when you realize you have no control over that mistake except to surface and open the housing.

The rear door cluster of controls to the right of the LCD surrounds the OK/select/rotary control wheel. The display/up arrow push button is above the OK wheel and the exposure compensation/down arrow/and photo creativity button is below the OK wheel. To the left is the drive mode/self timer/left arrow and to the right is flash/right arrow push button. Above that five push button cluster to the left is the Function button and to the right is the menu button. Below the cluster to the left is the playback button and to the right is the custom/delete button.

Above the menu button is the video control button which is marked with a red dot. No matter how hard I tried to avoid it several times I activated the video by accidentally bumping the video button. I even laid the housing down on a bench



*Redbreast Sunfish, 70mm, ISO 200, F/5.0, 1/125th, Two Inon Z-240 Strobes.*

and accidentally ended up with about twenty minutes of bright blue sky video. This is not the only housing I have tested where I had similar problems with video activation. It seems that a raised guard around the video button or a much stronger button spring making the button harder to push are the most common fixes for housings with this problem.

It may appear that I am nit picking but this was actually the only issue I encountered while using this housing. The top rear door has the mode dial and the front top of the housing has the on/off push button,

shutter push button, lens zooming control lever and a metal cold shoe for mounting strobes and focusing lights.

The front of the housing has a removable fiber optic mounting plate for two optical cords. When removed you find a clear window which can be used with the pop-up flash and a defuser for basic strobe lighting.

The flat lens port features a 55 mm thread which is compatible with a wide variety of wet accessories lenses and filters from Fantasea and other manufactures including those with the 52mm and 67mm thread sizes. These accessory lenses and filters are easily

installed using step-up and step-down rings to match thread sizes.

The bottom of the housing has a secure metal plate with three tripod mounting points suitable for mounting any number of accessory trays and handles for both single and dual strobe use. The left side of the housing also has a unique control wheel which accesses the lens control ring and is operated with the left hand. I really like the versatility of this arrangement and had aperture control assigned to the control wheel allowing me to change F/stops with my left hand while I controlling the shutter release with my right hand. Included with the housing along with the things listed above are a hand lanyard, silicone grease, screwdriver, silica gel packs, spare rear door O-ring, O-ring remover, diffuser, quick release security strings and a very useful hand strap which adds a good deal of extra support when hand holding the housing.

A very user friendly downloadable instruction manual can also be found at the [www.fantasea.com](http://www.fantasea.com) web site. This manual provides information on setting up the camera and housing for underwater use along with other useful information.



*Fantasea Line FRX100 III housing with Fantasea Line tray and flex arms, shown with the BigEye MKII mounted and two Inon Z-240 Strobes.*

## My experience in the field

I used the camera and housing with several different configurations of trays, strobe arms and strobes shooting both closeup and wide angle.

I started with a single Inon Z-240 strobe mounted on a single short arm and tray for closeup work. I found this configuration quite executable for closeup work with subjects from about 7cm to 35cm (2.8 inches to 14 inches) in length. This is not true macro for an image sensor of 13.2mm on the long side but it is still allowed me to shoot some fairly small subjects. I added a SAGA +15 closeup lens which got me to image sizes of around 35mm on

the long side or around 1:2.5 life size for the 13.2mm sensor. Keep in mind that this would be 1:1 on a 35mm sensor so still quite small. Buying a closeup lens of +10 or more diopters can be a bit tricky for compact cameras and my first recommendation for the RX100 III would be the newly released Nauticam CMC-1 designed specifically for compact and mirrorless cameras (\$320.00 US). If the CMC-1 is out of your price range many other C/U lenses will get the job done but with reduced image quality for the approx +15 magnification of the Nauticam CMC-1.

For wide angle I used the Fantasea Line dual tray with two flex



*Water Lily, 24mm, With BigEye MKII, ISO 200, F/5.0, 1/125th, Two Inon Z-240 Strobes.*

arms and two Inon Z-240 strobes. Mounts for a variety of excellent strobes are also available from Fantasea. For wide angle I used the Fantasea BigEye lens M67 mark II wet W/A lens. The BigEye mark II restores the 84 degree in air angle of view lost behind the housing flat port when it is submerged. The 84 degree AOV is not considered ultra wide by underwater standards but I find it quite useful for subjects like diver portraits, large fish like sharks, close focus wide



*Two shots taken by Amanda Cotton in Dominica using the Sony RX100 III camera and the Fantasea Line FRX 100 III*

shots, large pelagics and more.

Accessory lenses like the Inon UWL-H100 28m 67II lens can extend the angle of view even more to 100 degrees and with the Inon dome lens over the UWL-H100 AOV can be widened to 144 degrees with excellent results according to tests performed by Inon. Other manufactures wide angle lenses can also be used and again make sure you have checked with your local dealer for lens compatibility with this and other compact cameras.

What is most appealing to me about a compact camera system is being able to go into the water with one or two small accessory lenses and photographing absolutely any size animal you encounter. I can't begin count the number of dives I have made with an interchangeable lens camera where I have missed the most interesting subject of the dive because I had the wrong lens for the subject.

In the water the Sony/Fantasea Line system is a very well balanced and easy to hold with one

hand. The included wrist support added extra value to the system while handholding and made long dives far less fatiguing to the wrist and forearm. I had a few issues locking auto focus in dim lighting conditions which were resolved with a not to powerful focusing light. As an entry to mid-level camera and housing system I found the Sony RX 100 III/Fantasea Line housing combination to be a compelling choice both for quality and price.

The Sony RX100 III camera retails for around \$798.00 US and the Fantasea Line FRX 100 III housing retails for around \$499.00 US. The camera and housing kit retails for around \$1260.00 US. The Fantasea Line BigEye lens M67 mark II wet lens retails for around \$219.00 US.

**Phil Rudin**

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