

Sony RX100 VI

by Team Backscatter

The Sony RX100 VI follows a long line of excellent cameras that has evolved over the years in the RX100 line. With the Mark VI, Sony has made a major change with an all-new 24-200mm lens, making this the most versatile RX100 camera to date. This is the biggest game changer and has both pluses and minuses. Read on to see how awesome this new lens is, albeit with a few caveats.

All New 24-200 Lens

The new 24-200mm lens from Sony is very impressive for its topside use. Previous models sported a 24-70mm lens which was a bit limiting in reach for many topside applications and limited how tight the camera could shoot macro subjects. Having a 200mm lens camera that can fit in your pocket is pretty darn incredible. With the capability of up to 200mm, working distance is now further away, like an SLR, and helps to avoid spooking skittish critters.

School of Barracuda

The wide angle capabilities of the Sony RX100 VI is its main strength. Blue backgrounds are spot on with sharp detail in the sun rays. 1/125, f8, ISO 400. ©Jim Decker





Blenny with Snoot

This image was shot at full zoom of 200mm with a Nauticam SMC-1 lens. This image is uncropped from the camera. The depth of field is SLR-like thin, and the Sony RX100 VI is capable of delivering super tight macro shots, unlike any previous RX100 series camera. To focus this shot, I moved the camera until I saw the focus peaking indicate a sharp focus on the eye. 1/500, f11, ISO 100. ©Jim Decker

Finally, Super Macro Capability with an RX camera

One of the shortfalls of previous models of the Sony RX100 VI was the lack of close focus for macro, and the relatively short focal length of the zoom lens at 70mm, which limited how tight of a macro shot one could get. Now with the new 200mm lens, super tight shots are now possible when adding on an accessory macro lens.

However, there are some major caveats and a few drawbacks to shooting macro with an accessory macro lens on the Sony RX100 VI. These lenses work by allowing the camera's lens to focus closer than the minimum focus, thereby allowing you



Scorpionfish

This scorpionfish on the left was shot with just the stock camera lens and the one on the right shot with the Nauticam SMC-1. The stock lens allows for plenty of working distance for fish portrait shots like this with less risk of scaring off the fish. The shot using the Nauticam SMC-1 was the widest and furthest away I could shoot using that lens, which is still pretty tight. For shots that would be framed in between these two shots, a less powerful macro lens will be needed. 1/800, f11, ISO 100. ©Jim Decker



to get closer, and making the image larger on the camera. The more powerful the lens, the closer one can get, and the larger the object appears.

The drawback to this is that the entire focusing range of the lens is shifted closer, so the camera won't focus at far distances any longer with the macro lens installed. This can put the camera in a very narrow range of minimum and maximum focus distance.

In the case of the Sony RX100 VI this is around an inch or so at 200mm with the Nauticam SMC-1 that we tested. While this is great for super tiny critters, you get kind of a donut hole where you can't back up anymore and be in focus for larger critters when a macro lens is in place, and when it's

removed, you're not close enough. Carrying around different powered macro lenses for differently sized critters solves this problem, but these can be a pain to install and uninstall underwater.

For this camera, we recommend the SAGA Trio, which allows for +5, +10, and +15 powered diopters in one easy to deploy the device.

Because of the very limited focusing range of the camera, autofocus is just about useless when used with an external macro lens. The distance to the subject is in such a narrow range and the camera will not focus outside of that range.

Manual focusing and moving the camera in and out until the subject is in focus is really the only way to shoot with an accessory macro lens. Focus



Both of these shots were at the full zoom of 200mm, with the Nauticam SMC-1, lens at minimum focus, photo uncropped. This is the maximum optical reproduction ratio possible with this particular setup. The depth of field is SLR like thin, where the eye and stripe above the mouth couldn't be in focus at the same time. 1/1000, f11, ISO 100. ©Jim Decker

peaking in manual focus mode makes this an easier task. Due to this limitation, moving subjects with a macro lens installed is extremely difficult to do.

How to accommodate a 200mm lens underwater

If you've ever read our Best Underwater Compact Cameras article, you'll have seen it explained in our introduction that having a long zoom range for a compact camera is actually a negative for underwater imaging. The reason why is that all compact cameras need an accessory underwater wide angle lens to shoot proper wide angle.

Long zoom ranges make this hard when the entire zoom range is accommodated in the housing because this positions the external wide lens too far away from the camera's lens for it to work properly. To make it work with an underwater wide lens,

housings will need to have an option for a shorter front dry mount lens port that will limit the zoom to a maximum of about 70mm. The downside is 2 separate lens setups, one for macro, one for wide where it can't be changed in the water.

Speed and Performance—Best Compact We've Seen Yet

24 frames per second RAW, with continuous autofocus, and over a 100 shot buffer make the Sony RX100 VI the fastest performing compact we've seen yet. This level of performance is way ahead of most SLR cameras! While this is great for fast action, if you're using strobes, the speed isn't as relevant as the flash can't recycle that fast.

The speed of shooting and being able to pull off a lot of shots in a row is critical to successful underwater nature photography and getting "the shot" where everything is in just the right position.

While automatic flash control sounds good in theory, it has a long recycle time between shots, not allowing one to pull off a rapid-fire succession of shots. With manual flash, a lower power setting can be used with a quick recycle time to trigger the external strobe. Unfortunately, a downside for performance is no manual flash control with the Sony RX100 VI.

Autofocus is very fast and accurate, even in continuous focus mode (AF-C). When set to the wide area in wide angle shooting, it does a good job of picking up the proper subject most of the time. In cases where it didn't pick up the intended subject, just release the half press focus, re-aim the camera with the area you want to focus on in the center, then try again. Single focus (AF-S) with the point set to the center was very fast and accurate.

4K Video and High-Speed HD

Video on the Sony RX100 VI continues to be among the best a compact camera can offer. The video image quality is excellent and is taken from the full width of the sensor for both 4K and 1080 HD, unlike other compact and SLR cameras where some models use a cropped portion of the sensor and limiting the wide-angle capability. 4K is at 30p and 1080 HD has a frame rate up to 120p which allows for 4x smooth slow motion. Both formats are in H.264 and have a maximum data rate of 100 Mbps, which is comparable to what you'll find in a top end mirrorless or SLR system. Video with lights looks great, with excellent color and contrast. Ambient light only results are a little more mixed and covered in detail in the next section on white balance.



Fast and accurate focus is critical for getting in-focus shots of fast-moving subjects. 1/125, f8, ISO 400.
©Jim Decker

Custom White Balance—Improved, But Could Still Be Better

It looks like the Sony RX100 VI has inherited the same new white balance engine present in the top end Sony a7R III. In the past, Sony cameras were not able to execute a custom white balance even in the shallowest of depths. The color temperature would max out at 9,900 Kelvin, and for underwater white balance, we need a limit somewhere in the upper reaches of 50,000 Kelvin plus. This limitation basically made underwater ambient light wide-angle video unusable, as this could not even be recovered in post very well. Now with the Sony RX100 VI when executing a manual white balance at depth, it now reads >9,900 Kelvin, and it is actually making an adjustment above that level. Unfortunately, it's still not perfect with the water color leaning towards magenta instead of blue as you get deeper. This can be fixed in post at least and is an improvement over previous models, but



Ikelite RX100 VI Housing \$495.00.



Nauticam NA-RX100VI Housing \$1,100.00.



Nauticam NA-RX100VI Housing Package \$1,350.00

still lacks the proper color one needs for wide angle ambient light video.

Conclusion

The Sony RX series has been around for quite a while now, and while improvements over the years in performance have been substantial, the Sony RX100 VI takes it in a radically different direction with an all-new lens.

This new lens makes underwater super macro viable with the 200mm focal length when an additional macro lens is added on. It's not the easiest camera to shoot for super macro and we can definitely say you'd have a much easier time shooting super macro with an SLR than with the Sony RX100 VI. On the wide-angle side, photos look excellent with great colors and sharp images.

Manual white balance has been improved, but it still needs more work to match the standard that Canon has set for underwater ambient light color. Video with lights look great, so if you prefer video lights to ambient you'll be very pleased.

Having a camera with a 200mm lens that can fit in your pocket with the level of quality you get

from the Sony RX100 VI is really an incredible thing. Combine that with 24 frames per second RAW with over a 100 shot buffer, there is no better compact camera for carrying around for all of your land adventures. For someone who wants this level of versatility on land and has something they can take underwater all wrapped up in one, this is the best camera for the task. While it probably won't be our favorite compact camera for underwater, it definitely is our favorite for both topside and underwater use.

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