

Sony RX100 VII Review

by Jim Decker

On the surface, the Sony RX100 VII looks almost identical to the previous Sony RX100 VI camera. Under the hood, however, it packs a new upgraded sensor and an improved autofocus system. The new autofocus system, in particular, is completely game changing for compact cameras. Read on to see the details on the latest updates and how the Sony RX100 VII performs underwater.

Autofocus Tracking That Will Blow Your Mind

The biggest change to come with the Sony RX100 VII is the new autofocus system. Sony has taken the autofocus tracking from their top-of-the-line mirrorless cameras and implemented it in the Sony RX100 VII. Anyone who has ever used those focus systems can attest that it is a game changer. Simply point the focus squarely on what you want in the frame to be in focus, half-press the shutter, then the camera will track that object as it moves through the frame. The level of performance and accuracy looks to be the same as you get in the top-end mirrorless Sony a7R IV. This is great for close focus wide

angle shots where the depth of field tends to be thin or tracking a fish for a portrait-style shot.

The focus tracking is so good, it's the only autofocus setting we would use on this camera for land or underwater. This is by far the best autofocus system ever put into place for a compact camera.

The 24-200mm lens from Sony is very impressive for topside use. Having a 200mm lens camera that can fit in your pocket is pretty darn incredible. Anything needing a long zoom application such as concerts or sporting events works great at the long side of the lens, making the Sony RX100 VII the most versatile camera out of all the compact cameras in our comparison review.

Underwater, the capability of the

The focus tracking of the Sony RX100 VII had no problem tracking this cuttlefish as it moved, even at really close distances. We were able to keep tracking until it was in the perfect position, then take the shot. Using this method will consistently produce shots with perfect focus, making soft, out-of-focus images a thing of the past.
Sony RX100 VII | 1/125 | ISO 100 | f8





The Sony RX100 VII works really well for medium-sized macro subjects like this nudibranch. Sony RX100 VII | 1/2000 | ISO 100 | f11

200mm creates a working distance that is further away, like an SLR, and helps to avoid spooking skittish critters.

However, there are some caveats to shooting macro with an accessory macro lens on the Sony RX100 VII. These lenses work by allowing the camera's lens to focus closer than the minimum focus, thereby allowing you to get closer, making the subject larger in the image. 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, especially while using more powerful macro lenses.

In the case of the Sony RX100 VII, this is around an inch or so at 200mm with the Nauticam SMC-1. While this is great for super tiny critters, you get 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.



While the focus tracking is great for moving subjects, the shooting speed when using the flash is very slow due to a lack of manual flash control. The camera was only able to pull off 2 shots with this turtle encounter, leaving the photographer wanting a faster shooting experience in order to have more shots to choose from. Sony RX100 VII | 1/250 | ISO 100 | f8

With a powerful macro lens, it will also have a super thin depth of field at the greatest magnification levels due to a combination of a long focal length lens, minimum lens aperture of f11, and a relatively large 1-inch sensor.

Because of the very limited focusing range of the camera, autofocus is just about useless when used with a powerful external macro lens, like those used for super macro. The working distance to the subject

is an extremely 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 a high powered macro lens. Focus peaking in manual focus mode makes this an easier task. While all this makes super macro completely possible with the Sony RX100 VII, it makes it extremely challenging to execute.

On the other hand, using this

camera with a less powerful macro lens, such as a +5, makes it really easy to do “normal” sized macro critters. The average nudibranch, cuttlefish, or fish portrait shot is actually quite easy with a +5 macro lens. The working distance from near to far is in the twelve-inch range, rather than about one inch as it is with a more powerful macro lens. The autofocus tracking works really well with a +5 macro lens as long as you stay within the focusing distance the lens is capable of.

With all of this being said, carrying around different powered macro lenses for differently sized critters is mandatory to cover the entire range of macro shooting with this camera. Novice shooters will find it much easier to shoot larger sized macro critters with something in the +5 macro lens range. Using a +10 or greater lens will be much more difficult.

Fantastic Wide Angle Image Quality

Wide angle photography is the major reason one would take this camera underwater. The new sensor has a base ISO of 100 which is 1/3 of a stop more sensitive to light than the previous model Sony RX100 VI. This will allow the Sony RX100 VII to pick out a little bit more detail in the shadows and preserve highlights compared to the previous model. Bluewater backgrounds look great and images look sharp with good detail. Combining this camera with a high-quality wide angle lens such as the AOI UWL-09 PRO or the Nauticam WWL-1 will yield one of the best images that can be had from a compact camera for underwater wide angle photography.

Shooting Speed and Performance — The Good and The Bad

20 frames per second RAW shooting, continuous autofocus, no screen blackout during continuous shooting, and a 100+ shot buffer make the Sony RX100 VII the best performing compact we’ve seen yet. This crazy level of performance is on par with some of the highest performing SLR and mirrorless cameras out there today.

On paper, this sounds great and works really well for fast action with continuous or natural light. However, if you’re using strobes, this speed isn’t as relevant as the flash can’t recycle that fast. The camera’s flash is automatic only and has no provision for manual flash.

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 big downside for performance is no manual flash control with the Sony RX100 VII.

Trying to get a strobe-lit shot of a fast-moving subject is really difficult because there is no way to shoot in rapid-fire style. During testing, it was not uncommon to only be able to get one shot off during critical moments, which meant missing most of the action while waiting for the flash to recycle. After about 2 or 3 shots in a row, it slowed down significantly trying to recharge the flash and the recycle time became unbearable.



The wide angle image quality is excellent, featuring great colors, sharp detail, and good dynamic range. Sony RX100 VII | 1/250 | ISO 100 | f8

4K 30p and High-Speed HD Video

Video on the Sony RX100 VII continues to be top-notch. The video image quality is excellent and is taken from the full width of the sensor for both 4K and 1080 HD, unlike some other compact and



When shot to its strengths, video from the Sony RX100 VII looks awesome.

SLR cameras which use a cropped portion of the sensor, which limits the wide-angle capability. 4K has a maximum frame rate of 30p while 1080 HD has a frame rate up to 120p, allowing for slow-motion up to 4x. 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 while balance looks great in the shallows but starts to fall apart at about 35 feet. Compared to Olympus, Panasonic, and Canon compact cameras it has the shallowest manual white balance capability, though the results in those shallower

depths do look particularly good.

Conclusion

The Sony RX100 VII is the perfect example of a camera that excels massively in some areas while falling short in others. The on-land performance is crazy good with excellent image quality, extreme levels of shooting speed that is better than most pro-level SLRs, and definitely the best autofocus system out of any compact camera (by a long shot). This camera is absolutely Backscatter's #1 recommended pocket camera for any topside shooting.

The underwater strengths of the Sony RX100 VII are wide angle photos, wide angle video with lights,

wide angle video with ambient light down to about 35 feet, and medium to larger sized macro. It excels massively in these areas. It falls short in recycle time of the flash (due to a lack of manual control), super macro capability (a novice will have a much easier time shooting an SLR instead), and the relatively shallow white balance capability for wide angle ambient light video.

Whether this camera is right for you totally depends on the type of shooting that you do. If you want to own just 1 compact camera for both topside and underwater adventures, this is probably the best choice due to the range of the lens for topside and the excellent image quality it produces underwater. For those that want a small rig to push through the water chasing whales, this is at the top of the list. The speed it has when shooting without strobes makes this a top choice. Causal video clips shot in shallow water look great but would be limiting for a serious video shooter.

Pros

- * Maximum topside shooting power in a minimum sized body makes this our pick for Best Compact for Topside & Underwater
- * 24-200mm lens allows super tight macro
- * Lens zoom range is fantastic for

dual topside/underwater use, but still fits in your pocket

- * Video quality is excellent
- * AF speed and tracking in continuous mode rivals top-end mirrorless and SLR cameras

Cons

- * 24-200mm lens requires different ports for true wide angle and macro
- * Long or multiple back to back clips in 4K video can lead to overheating
- * Manual white balance limit is about 35 feet
- * Built-in flash is TTL only, limiting shooting speed with a flash
- * Versatility and compact size comes at a price that's not far off from an SLR

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