

Sony A7R V

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The Sony a7R V is the newest full-frame mirrorless camera from Sony. It's an all-around serious upgrade for a7 users and we dove deep to find what matters most to underwater photo and video shooters.

Backscatter CEO Jim Decker put it to the test underwater and came back with some excellent images, gorgeous video, and lots of juicy info about the updated autofocus performance, improved video specs, new processor, and much better-looking manual white balance.

The Sony a7 IV is the base model, which tends to be more entry-level in features and price, with a photo resolution of 33mp and 4K 60p video.

The Sony a7S III is more video-centric, recording up to 4K 120p video with very low noise at high ISO values and faster sensor readouts for less rolling shutter effect, but with a lower resolution 12mp photo sensor.

The 61mp Sony a7R V is all about photo resolution and ultimate still image quality, though it can also shoot up to 4K 60p video, too.

Outside of the a7 lineup is the Sony a1, which is a combo of the best video, up to 8K 30p and 4K 120p, and

50mp photo resolution all wrapped up in one camera body - along with a justifiably hefty price increase over the a7 line.

The 61mp sensor isn't changed from the previous model, but that is totally fine with us. It's sort of an "if it isn't broke, don't fix it" type of situation. In our review, we called the previous model Sony a7R IV the best image quality of all time and that title hasn't changed with the latest generation.

The resolution is outstandingly sharp, allowing for insane amounts of detail when zoomed into 1:1 size during review. The dynamic range is great and maintains sharp resolution and detail in the brightest highlight and darkest shadow areas of the image. Color reproduction is great as well, with a very natural look that often requires minimal correction for ideal results.

It's not uncommon for ultra-high resolution sensors to suffer a bit in low-light performance. They can often create higher noise levels at lower ISO levels than other cameras. This is not the case with the Sony a7R V; it performs great in lower light



If you're online, watch our interview with Backscatter CEO Jim Decker to learn firsthand what shooting the Sony a7R V was like underwater.



The Sony a7R V is the photo-centric model of the Sony lineup with an ultra sharp 61mp sensor.

Sony a7R V | Sony 28-70mm | Nauticam WACP-C Lens | 1/125 | ISO 200 | f11



The level of detail captured by the Sony a7R V is insanely sharp. Sony a7R V | Sony 90mm Lens | 1/250 | ISO 100 | f16

environments thanks to the backside illuminated sensor. Test shots at ISO 1000 look more like ISO 400 film grain than distracting noise - we actually kind of liked the look, in fact! Even in large-scale prints this noise is barely noticeable and not at all distracting from the image quality in our opinion.

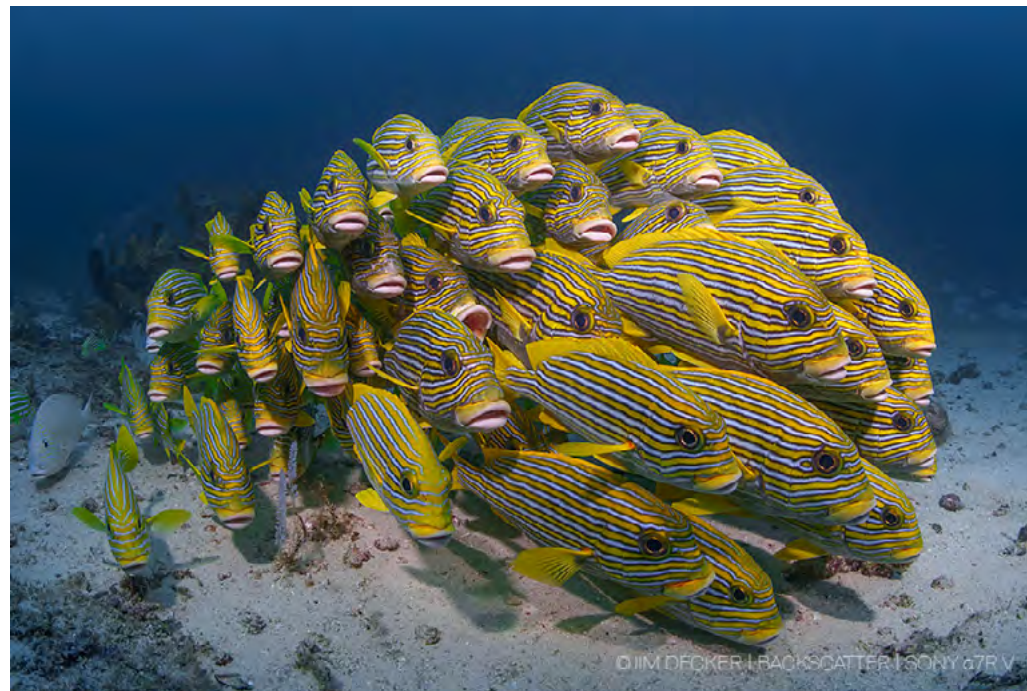
The Sony a7R V will shoot 10 frames per second in a compressed lossless RAW format which is pretty quick for how huge of a file size the 61mp sensor creates. If switching over to uncompressed RAW it drops to 7 frames per second, which is fine if shooting with strobes as most strobes won't be able to keep up any faster than that anyway. Strobeless shooters might feel that this shooting speed is a little limiting for fast-action shots, but if that is the priority, then it's worth seriously considering a bump up to the Sony a1 for its impressive 20 to 30

frames per second performance.

We can confidently say that the Sony a7R V has the best autofocus of any camera that we have ever used. This is due to the all-new AI engine powering the autofocus system. The relative performance increase over the previous model cannot be understated. This is most noticeable when shooting macro.

In the past, Sony full-frame mirrorless cameras have struggled to autofocus well when using the Sony 90mm macro lens. We used to recommend shooting the Canon 100mm IS macro lens with a Metabones adapter as it worked better than the native Sony lens. This is no longer the case at all as the Sony 90mm now blew us away with how well it worked on the Sony a7R V.

We set the camera up to shoot with the Animal Eye Detect setting and



Shooting lossless RAW quality at 7 frames per second is more than fast enough when shooting with strobes, and the images process quickly too.

Sony a7R V | Canon 8-15mm Lens | 1/60 | ISO 800 | f11

it worked wonders for macro critter tracking. We would use continuous focus and just place the focus square over the eye of the subject, hold the AF-On button using the back-button focus technique, and let the camera do the work. The camera would not only recognize, and follow the eye, but it would also seamlessly switch between tracking a single eye to both eyes as the subject moved and repositioned itself.

The electronic viewfinder on the Sony a7R V was about as good as it gets, at least on par with our other

current top picks found on the Sony a1 and Canon EOS R3. Electronic viewfinders will - at least for now - not be able to match the dynamic range of the human eye, however, the performance of the viewfinder on the Sony a7R V still allowed us to make out detail in both the brightest and darkest parts of the frame as we were composing the shot. This is most apparent when shooting sunballs and scenes where there are both super bright and super dark elements in the same shot.

An optical viewfinder such as



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The dynamic range displayed in the electronic viewfinder was among the best that we have seen yet and was actually usable for a change.

Sony a7R V | Sony 28-70mm | Nauticam WACP-C Lens | 1/250 | ISO 400 | f8

those found on DSLR cameras will always be our first choice when it comes to wide angle shooting, as they will always beat the dynamic range that an electronic viewfinder can produce. That being said, there are actually some benefits to using an electronic viewfinder for macro, such as not having to remove your eye from the viewfinder for image review and built-in focus and exposure tools that an optical viewfinder cannot do.

Our preferred method of shooting was to disable automatic image review in the viewfinder and

to use the playback button when we wanted to review our images. This allows us to shoot more like an SLR, where our shooting is not interrupted by our image popping up in the viewfinder. It is easy to apply the viewfinder/toggle function to the C3 button, which is conveniently accessible from the left thumb button. This allows us to toggle between working from within the viewfinder or off of the LCD screen. This setup provides maximum flexibility with minimal shooting interruption.



©JIM DECKER | BACKSCATTER | SONY a7R V

By disabling the auto image review we were able to shoot through the viewfinder uninterrupted.

Sony a7R V | Canon 8-15mm Lens | 1/200 | ISO 640 | f11

Choosing the right glass for the job

For wide angle we shot the Canon 8-15mm Fisheye lens with a Sigma MC-11 adapter; there are also Metabones adapters available. The Sigma MC-11 does not allow for autofocus in video mode, whereas the Metabones does (the Sigma MC-11 was all that we had available at the time of this review).

For macro, we shot the Sony 90mm Macro lens. We also shot the basic Sony 28-70mm lens behind the

versatile Nauticam WACP-C.

Some of our favorite tried-and-true lenses worked great on Sony a7R V, with the Sony 90mm feeling like an all new lens compared to using it on the previous model

The Nauticam WACP-C is a more compact version of the Nauticam WACP-1 with slightly lower-grade optics. We found that the Nauticam WACP-C liked higher apertures around f/11 to f/16 for the best corner sharpness, whereas the Nauticam WACP-1 could have been opened up to f/5.6 without any issues. With 61mp



The Sony a7R V is able to capture more accurate colors deeper than any a7R before it. Sony a7R V | Sony 28-70mm | Nauticam WACP-C Lens

of resolution to examine it can be easy to pick apart any potential flaws in your images, so opting for the highest quality lenses and wet optics is highly recommended for this camera system.

For our review, we used the Nauticam NA-A7RV housing. Other housings from Aquatica, Ikelite, Sea & Sea, Marelux and Seacam are either currently available or coming soon.

Video

The Sony a7R V gets a nice little boost to the video specs by jumping up 4K 60p over the previous model's limit of only 4K 30p. At this point, 4K 60p is really the minimum required spec to be taken seriously as a video

camera, so it's great to see this model meets that requirement. The benefit of 60p footage is that it allows you to slow down playback to half speed to increase the duration of your clip, improve stability, and get a nice little slow-motion effect when played back at 30p.

One of our most often repeated video mantras is that "if the color isn't right, nothing else matters". Video shooters have to get the color right in camera during recording, as there is not nearly the same amount of latitude for color correction that shooting photos allows for. This is controlled by the ability to capture a manual white balance using only natural light at depth. In



See the gorgeous and accurate colors captured by the Sony a7R V in action.

the past Canon has been the gold standard for doing this well, but the recently upgraded performance on the Sony a7S III has risen to be a decent competitor for the top spot. Thankfully the Sony a7R V seems to have inherited the same color accuracy and abilities of the Sony a7S III so it is extremely capable of capturing natural-looking, accurate colors in video underwater.

To put this in context, the previous model of this camera was only usable to about 30ft/10m when shooting ambient light video. Now the Sony a7R V can shoot at depths of nearly 90ft/30m while producing accurate colors with only ambient light.

One factor to be aware of for video is that the camera does a 1.24x crop on the sensor when recording. This means that wide-angle shooters may favor a lens with a wider field of view, such as the Canon 8-15mm Fisheye lens to help offset that crop. Meanwhile, macro shooters might be a little excited about it, as it means more working distance and tighter shots on those tiny subjects.

When rolling video there's loads of data coming off of this sensor but the read speeds can sometimes have a hard time keeping up with it. Fast, hard pans and shots with lots of fast-moving things may produce noticeable rolling shutter effect, but if things are nice and steady and stable

this will likely not be an issue. For the ultimate video performance, we still recommend either the Sony a7S III or Sony a1, but the Sony a7R V is now more video-capable than any A7R model has been in the past.

There are some control scheme updates on the Sony a7R V that we are quite fond of. It now offers the ability to have separately saved controls for photo and video. You can be set to the ideal settings for either shooting style with just a single flick of a switch. This is massively helpful for quickly switching between photo and video, as it saves the time required to make the necessary changes to aperture, ISO, shutter speed, focus, and white balance that we would have to do individually otherwise.

The photo exposure will typically be set to underexpose ambient light by 1-2 stops, and we are usually shooting in auto white balance because we will be correcting the RAW files in post. Conversely, the video exposure will be set so that the shutter speed is always double the frame rate (1/125 when shooting 60p), and the white balance will be custom to get the color right in-camera. We'll also have the aperture set to f/8, ISO set to Auto, and Exposure Comp set to -0.7 to knock down the highlights a bit. Thanks to the new control operation we can have those settings locked in and ready to roll video with ideal

results with just one control activation from the ideal photo settings.

We also liked programming the C1 custom button to the white balance function. This allowed us to execute and cycle between saved white balance presets with just 1-2 button presses which was super convenient for video shooting. If we already had a white balance saved, we were ready to roll as soon as we flipped the control switch. If not, we were just 1-2 clicks away from either selecting the appropriate white balance or capturing a new one.

Conclusion

To state it as plainly as possible, the Sony a7R V is the absolute best image quality from a full frame camera right now - mirrorless or DSLR. The ultra-detailed and razor sharp resolution captured by the whopping 61mp sensor are currently unparalleled. It creates the opportunity to easily crop down to a vertical aspect ratio from horizontal shots with plenty of resolution to spare. The dynamic range detail in brightest highlights and darkest shadows holds up extremely well under intense scrutiny. The color reproduction is accurate, vibrant, and walks the fine line between rich saturation and natural appearance - so perfectly in fact that we felt most of

the color was ready to publish straight out of the camera. It's incredible that a camera with so much resolution can also maintain such a low noise limit even when shooting in excess of ISO 1000, creating a look that was more like ISO 400 film grain than digital noise. This will absolutely be our first choice for an underwater photo camera when ultimate still image quality is the top priority.

The video side of things left us pleasantly surprised, and while it may not be the ultimate video camera, it is absolutely solid enough to be considered a viable hybrid camera. The white balance is as good as the best video cameras currently on the market and the 4K 60p video spec meets our minimum requirements for serious video work. The 1.24x crop factor is a negative factor to consider for video as it is a pretty heavy crop to contend with and



will require a lens that will maximize the field of view.

This camera is made for the hardcore photo shooter, who wants to dabble in video that looks pretty dang awesome, too. Anybody interested in high-quality, high-resolution still photography needs to take a hard look at the Sony a7R V.

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