

Nikon Z7 II Underwater Camera Review

by The Backscatter Team

Can Nikon continue to build on the momentum and success of their first foray into the full-frame mirrorless world? The answer in this case is a solid YES.

The second generation of Nikon's full-frame mirrorless camera line is here with the Nikon Z7 II. It uses the same fantastic image sensor to produce excellent photo quality just like the first Nikon Z7, which shot some of the best photos we've ever seen from a Nikon. This outstanding image quality is now powered by dual processors for even more under-the-hood power and speed. The Nikon Z7 II is priced competitively compared to other full-frame mirrorless cameras making it an outstanding value for its shooting performance. We can easily put the Nikon Z7 II on a pedestal next to our favorite DSLR of all time, the Nikon D850.

What's New?

The most impressive new specs that the Nikon Z7 II gains are a faster processor that allows for up to 4K 60p video, faster 10 frames per second photo shooting, and a larger

shot buffer of up to 77 RAW images. Basically, this generational upgrade is all about faster shooting while maintaining the same great photo quality that we've come to expect from Nikon full-frame cameras. It also brings a new dual card slot option for shooters who want to be able to back-up their files in real-time or split their photo and video media between two different sources.

Nikon Z7 II Main Specs:

- 45.7MP Sensor
- Native ISO 64
- 4K 60p video at 93% coverage of the sensor (about 1.08x crop)
- 5-axis in-body stabilization (3-axis with adapted F-mount lenses)
- 10fps burst shooting with single-point AF
- 3.69M-dot EVF, 3.2" 2.1M-dot rear screen
- -3 EV autofocus (with f2.0 lens)
- 1 CFExpress / XQD card slot, 1 UHS-II SD card slot
- New EN-EL15c battery, rated to 420 shots (LCD), 360 shots (EVF)
- Compatible with new MB-N11 battery grip (topside / out of housing only)



Nikon Z7 II
Ikelite Housing



Nikon D850
Ikelite Housing



Nikon Z7 II
Nauticam Housing



Nikon D850
Nauticam Housing

Size and weight savings between mirrorless and SLR are pretty much nonexistent after adding a housing and port.



Photos captured by the Nikon Z7 II hold tons of detail in super-sharp resolution. Notice the underexposed band at the bottom of the frame due to having the shutter speed set at 1/250 second. The max flash sync speed is 1/200 second.
Nikon Z7 II | Nikon 8-15mm | 1/250 | ISO 100 | f22

Super Sharp Shots - Again

Image quality is what the Nikon Z7 II is all about - it's the standout reason one would want to make this their primary underwater imaging rig. The 45.7mp sensor produces images that are effectively identical to those produced by the Nikon D850, which has been one of our benchmarks for top-tier image quality over the past few years. The sensor of the Nikon Z7 II is the same as that found on the original, so we're pleasantly unsurprised that the same great image

quality carries through to this version.

This level of resolution is also equivalent to that produced by the Canon EOS R5 making each of these current full-frame mirrorless cameras pretty squarely matched for overall still image quality and sharpness.

Dynamic Range Detail With ISO 64

The Nikon Z7 II has a native minimum ISO value of 64, two-thirds of a stop lower than any other current full-frame mirrorless camera with



The competitive price of the Nikon Z7 II compared to other full frame mirrorless cameras, combined with its super sharp image quality, make it one of our picks for Best Mirrorless Camera of the year.
Nikon Z7 II | Nikon 8-15mm | 1/200 | ISO 200 | f11

a base value of only ISO 100. This allows it to preserve more dynamic range detail by retaining image quality in the brightest highlights and maintaining low noise in the shadows. Backlit sunball scenes held dynamic range detail extremely well and looked better than similar shots from other full-frame mirrorless cameras.

Accurate & Vibrant Colors

We were pleased with the vibrancy of colors produced in wide angle scenes. Open water blues

looked rich while brighter colors in the foreground were nicely saturated and accurately reproduced.

We noticed a very slight amount of banding in blue water background transitions from light to dark that was more noticeable on the Nikon Z7 II than on comparable shots from the Canon EOS R5, but unless one was comparing the two side-by-side under scrutinous detail the banding would likely go mostly unnoticed.



Colors produced by the Nikon Z7 II are well saturated and really pop when lit with strobes.

Nikon Z7 II | Nikon 8-15mm | 1/200 | ISO 160 | f16

1/200 Flash Sync Speed

We would have preferred to have a maximum flash sync speed greater than 1/200 for ultra-bright sunballs, but that is the limit on the Nikon Z7 II. This is the same limit found on the Canon EOS R5, so both cameras are somewhat hobbled when knocking down the background ambient light with a fast shutter speed while balancing the foreground with strobes.

The camera will allow you to set a faster shutter speed than the flash sync limit of 1/200, thus resulting in

underexposed areas at the bottom of the frame due to catching the shutter travel. In practice, there were times that we had the shutter speed set faster (1/250) than the max sync speed by accident, and shutter travel was noticeable in the image.

One would have to step up to either the Nikon D850 or one of the Sony full-frame mirrorless cameras to gain a faster flash sync speed (up to a maximum 1/400 on the Sony a1) so sunball shooters and/or those who find themselves shooting in shallow,



A maximum flash sync speed of 1/200 means that you'll have a little less exposure range to knock down natural light when shooting with strobes. This shot was taken at 1/250 creating an underexposed band at the bottom of the frame.

Nikon Z7 II | Nikon 8-15mm | 1/250 | ISO 250 | f16

bright conditions frequently should take note.

Up To 10 Frames Per Second

The Nikon Z7 II gets a speed boost up to a maximum of 10 frames per second RAW shooting, though it can only do this in single-point autofocus, not while tracking autofocus. This impressive spec can really only be taken advantage of when shooting exclusively with natural light because strobes cannot keep up with that rate of fire.

While we like the new and improved faster frame rate, we also feel like the ability to continuously track focus on your subject while shooting at 7 frames per second on the Nikon D850 is a major advantage that the Nikon Z7 II does not have.

Electronic Viewfinder

The resolution of the electronic viewfinder is the lowest compared to other current full-frame mirrorless cameras but the dynamic range detail it presents actually makes



Fire away and pick the perfect frame later by buffering up to 77 RAW shots before the camera slows down.

Nikon Z7 II | Nikon 8-15mm | 1/125 | ISO 320 | f13

us prefer this viewfinder to others. All electronic viewfinders pale in comparison to the level of dynamic range detail that an optical viewfinder can present, but among them the Nikon Z7 II does the best job in our opinion. We also felt like the viewfinder of the Nikon Z7 II presented a larger view than other cameras did, providing an easy user experience.

Ultimately, we still prefer (and likely always will) the optical viewfinder of the Nikon D850 to the

electronic viewfinder of the Nikon Z7 II. Comparing the two is truly “eye opening” in terms of realizing just how much shadow and highlight detail is lost when composing a scene through an electronic viewfinder. Think of it as the difference between looking at a sunset with your naked eye as compared to what it looks like on a smartphone camera screen - the phone will show nothing but black shadows in the foreground while your eye will be able to see plenty of detail.

On the other hand, an electronic



Electronic viewfinders can struggle to display the same level of dynamic range detail as an SLR, but the Nikon Z7 II does a better job than others.

Nikon Z7 II | Nikon 8-15mm | 1/100 | ISO 250 | f14

viewfinder provides focus peaking and exposure tools directly in the viewfinder which an optical SLR can't. They also allow you to review images directly in the viewfinder which is especially helpful when shooting macro so that you don't have to pull your head back from the viewfinder just to see your shot.

No Blackout Viewfinder

The electronic viewfinder of the Nikon Z7 II pairs great with the improvements in shooting speed because there is no viewfinder blackout when the shutter is released. This means that you can rapid-fire during fast action without having to worry about losing your view of the scene during every shot - a necessity when shooting away furiously at 10 frames per second while trying to maintain composition.

Improved Low Light AF

The autofocus system of the Nikon Z7 II has seen a performance boost too, thanks to the new internal processors. The camera can now focus accurately even in dark conditions down to -3 EV so this is a welcome improvement for our often dark underwater environments.

Speedy & Accurate

Overall the Nikon Z7 II performed fairly well in the autofocus department, with good speed and accuracy. It wasn't quite as fast as a Nikon SLR but it still felt snappy and responsive. Those seeking the ultimate in hyper-accurate macro autofocus (such as continuous tracking even while shooting through a diopter) should consider the Sony a1.

The biggest thing to note about autofocus is that the Nikon Z7 II uses

an entirely new system for autofocus, both inside the camera and in terms of user control, so those migrating from a Nikon SLR may find it to be a little unfamiliar at first, but ultimately easy to adjust to and use. The Nikon Z7 II has both single and continuous autofocus modes, with controls and focus points being easily accessible through the 'i' menu.

There is a Phase Detect Autofocus subject tracking mode, but it's not the same as the 3D AF Tracking Mode that we have in the Nikon D850 and Nikon D500. While this feature does a good job on the Nikon Z7 II, the accuracy, intelligence, and speed of the 3D tracking on the Nikon D850 is a high bar to meet. There is definitely a noticeable difference between the two when compared side by side, with the Nikon D850 taking the top spot.

We look forward to comparing the Nikon Z7 II & Nikon D850 autofocus performance overall to the newest flagship Nikon Z9 upon our first chance to test it underwater.

No Autofocus Tracking at Max Speed

The lack of autofocus tracking while shooting at the maximum 10 frames per second spec is something that stands out as less than ideal, and may play a factor when shopping for cameras comes down to deciding

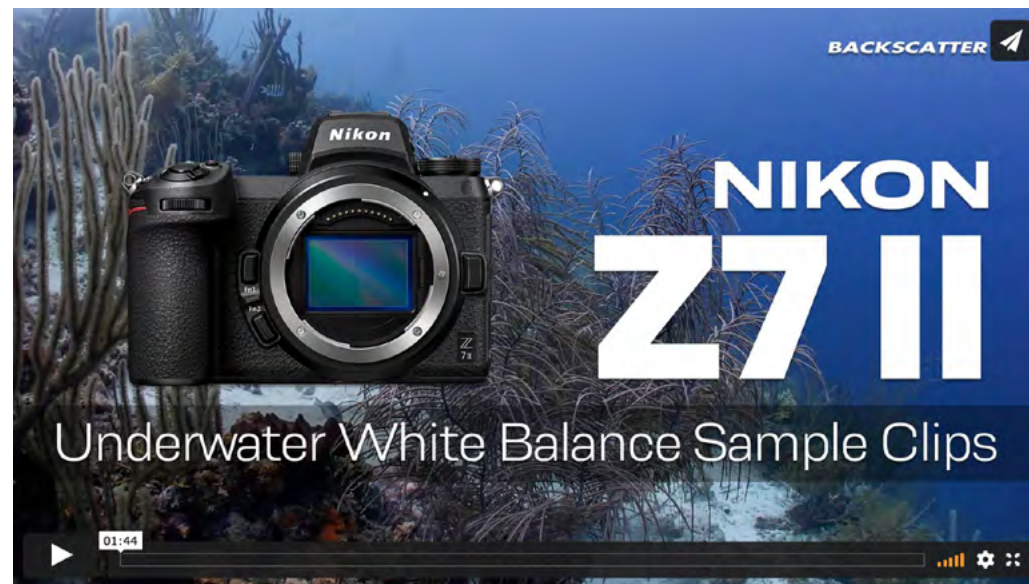
between the ultimate speed of shooting and ultimate autofocus tracking accuracy.

Small topside, SLR-Sized Underwater

The camera body itself is relatively small as full-frame mirrorless cameras go, and it's very lightweight making it convenient for topside use when not in a housing. When sealed in the housing and fully set with a port to accommodate the full-frame optics, the final rig size really doesn't come out any smaller or lighter than an optical SLR. This is basically true of all full-frame mirrorless cameras, so it's not so much a drawback as it is a fact of life for underwater photographers.

Video Upgrades

While the show-stealing specs of the Nikon Z7 II are primarily photo-based, there are some decent upgrades in the video department. The biggest video upgrade is the jump to 4K 60p internal recording, bringing the Nikon Z7 II up to par with most other current cameras' UHD video specs. If using an external recorder, it can output 10-bit N-Log or HDR footage for maximum dynamic range and color depth. For those that are really into post-processing their footage there is also the option (again, on an external recorder only) to output RAW video



Watch Video: The Nikon Z7 II produces a purple-ish hue at depths greater than 40 feet (12m), but it can make an interesting video. This video has no color correction and was shot with ambient light, no filter, and a manual white balance performed at each capture depth.

in 1080p from the full width of the sensor or in 4K from an APS-C sized sensor crop.

White Balance Limited to Shallow Water

The Nikon Z7 II is fine for photographers who want to pick up an occasional video clip, but it's really not the strong point of this camera. The biggest reason for this is the relatively shallow natural light white balance limit of about 40 feet. Even in ideal clear, high-vis water conditions, the deepest we could get the Nikon Z7 II to look good was about 40 feet.

Beyond that, the blue water developed an uncorrectable purple hue that got progressively worse the deeper we went. Anything above 40 feet looked pretty great, so casual shooters shouldn't stress over this too much, but serious video shooters will need natural light white balance capabilities with deeper range.

No Meter Makes Judging Exposure Difficult

It's difficult to judge proper video exposure in bright ambient light by looking at the LCD image alone. Nikon cameras unfortunately don't

display an exposure meter on the LCD making it quite frustrating to judge exposure in real-time. In difficult lighting situations advanced shooters use the meter to underexpose the scene by two thirds or a full stop for saturated colors. New video shooters with the Nikon Z7 II will find it best to use Auto ISO and an Exposure Compensation of -0.7 to -1.3 for best results.

Who Is This Camera For?

We recommend the Nikon Z7 II for Nikon shooters who are looking for excellent image quality, with only a passing interest in underwater video. It's a great choice for a smaller-than-an SLR camera body without sacrificing image quality or camera controls and photo capabilities to rival those of the Nikon D850.

The Nikon Z7 is an excellent full-frame mirrorless choice for still shooters. It produces an awesome image quality on par with the Nikon D850 thanks to the insanely sharp 45.7-megapixel resolution and a native ISO value of 64 for outstanding dynamic range.

The Nikon Z7 II is priced lower compared to other full-frame mirrorless cameras, coming in at about \$500 less than its most closely-spec'd competitor. Full-frame still shooters seeking the most bang for their buck should start looking at this

camera before any others.

It has the best electronic viewfinder that we've seen yet for dynamic range detail. The autofocus was fast and accurate overall, though we do wish the Nikon Z7 had the same autofocus system and operation as the Nikon D850. While the body itself is smaller and lighter than an SLR, the overall underwater system size is about the same.

This is not a camera made for video shooters. Despite the Nikon Z7 II's 4K 60p video specs, the white balance limits are lagging behind what other more video-centric cameras can do. Additionally, the lack of a meter makes judging exposure accuracy way too difficult. If your primary interest is shooting video, then it's worth looking at Sony or Canon over Nikon for the best in-camera natural light color at depth, but for those who want to primarily shoot stills and also be able to roll some video that looks great down to 40 feet then the Nikon Z7 II is a fair choice.

Z7 II or D850?

The Nikon Z7 II is great for its smaller body when walking around topside, but if you want a bit more out of your camera image quality and autofocus-wise, then get the Nikon D850.

When comparing ultimate image quality we have to give the top spot -

albeit by a thin margin - to the Nikon D850. The difference in quality is minor and may go unnoticed to the casual eye, but pixel peepers will be able to discern enough (especially in the color banding of open water backgrounds) to potentially sway their decision in favor of the Nikon D850.

The most noteworthy and practical shooting advantage that the Nikon D850 brings to the table is the 3D Tracking Autofocus mode. This mode is massively better than what the Nikon Z7 II uses in both execution and performance. If camera body size is a concern when shooting topside, then by all means the Nikon Z7 II isn't a bad choice in terms of pure autofocus performance, but all things being equal underwater where the full rig size difference is negligible, we prefer the Nikon D850 for the overall better autofocus system.

It's also important to consider the faster flash sync speed of 1/250 found on the Nikon D850, which opens up

more exposure range when shooting with strobes.

The Nikon D850 also has the benefit of an optical viewfinder for superior visible dynamic range detail - the value of which cannot be understated when composing wide angle shots.

If you've read this article and reached the conclusion that you want "just a little more camera" than what the Nikon Z7 II offers, consider that the Nikon D850 is the same price and other than the topside weight/size-savings advantage it's better in basically every way.

The Backscatter Team
www.backscatter.com

