

Nikon 105mm VR lens

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Over the last couple of year's Nikon has introduced plenty of new glass to excite photographers with fresh possibilities and new solutions. But we photographers of the wet variety can feel a little hard done by because of the 10 or so new lenses released since the 12-24mm, none have really been ideal for underwater use. All that changed in February when Nikon announced a new 105mm macro lens: the micro-nikkor 105mm f2.8 AF-S VR to give it its full name.

Macro is a big part of underwater photography and perennially the favourite lenses for Nikon shooters are the 60mm and 105mm. The 60mm is the favoured option in low viz and with larger subjects. While the 105mm is better for shyer subjects and for high magnification reproduction. This is because the longer camera to subject distance (for the same reproduction size) facilitates lighting subjects with our strobes. Few land photographers own more than one macro lens, but underwater with the inherent restrictions on camera to subject distances many underwater photographers routinely choose both macro optics in their lens bags. For the sake of this review I will

concentrate on evaluating the new 105mm VR against the old 105mm for underwater photography.

To cut to the chase, the main upgrade features of the new 105mm are:

- 1) VR or Vibration Reduction gyroscopic image stabilisation
- 2) AF-S or in lens Silent Wave Motor driven autofocus
- 3) New higher quality glass lens elements
- 4) 9 curved blade aperture diaphragm
- 5) Internal focusing of the lens – i.e. the lens does not change length.

All that probably sounds a bit dull. But I now want to go through each of these (in reverse order) explaining their impact on using the lens underwater.

But before that, the first thing you will notice about this new 14 element lens is that it is noticeably fatter than the old lens. This has two consequences for us – the first is that it can cause problems fitting the lens into some housings and existing macro ports (I am using a modified port for my Subal). The second consequence is that the lens has a larger (62mm vs 52mm) diameter front filter than the old 105mm, so



This cropped image demonstrates the impressive sharpness and detail recorded by the 105mm VR, as one goby eats another. Nikon D2X + 105mm VR. Subal Housing. Subtronic Strobes. 1/125th @ F14.

The new Nikon 105mm VR macro lens. The lens incorporates 14 optical elements, a nine blade aperture, AF-S autofocus and gyroscopically controlled VR II vibration reduction.

close-up filters that you had (such as the 3T and 4T) will not fit on the new lens. Nikon also state that the new lens will not auto-focus with their AF-S teleconverters, although it will auto-focus with my own third party (non-AF-S) teleconverter.

Internal focusing in a macro lens



is a new development for Nikon, but not for other manufacturers. It is useful for underwater shooting because it makes port design and optimisation much easier, although it should be noted that the close-up dioptres for the 105mm VR are quite big and your port should leave 2cm of clearance in front of the lens if you want to use a dioptre.

The purpose of the 9 bladed aperture diaphragm is to improve the smoothness of the *bokeh*. Don't worry if that makes no sense – I'll explain. *Bokeh* (is an Anglicised Japanese word) that describes the aesthetic qualities of out-of-focus areas in an image – or the smoothness of the blur. Simply, the more circular the shape of the aperture (and less hexagonal) the smoother and more pleasing the out of focus areas of the picture will appear. Macro photography is characterised by shallow depth of field and lots of out of focus areas, which is why all this effort has been put into the aperture.

So does this make a noticeable difference underwater? Yes. In fact before I read anything about the aperture of this new lens I had commented to several people that the lens produced much smoother backgrounds than the old one.

The main effect of the new glass is unsurprisingly to produce sharper results. The old 105mm was a sharp lens, but most people felt that it was not as pin-sharp as the 60mm. The new 105mm is clearly sharper and in my opinion is as good if not better than my 60mm. Also of benefit are the incorporation of two special optical elements, one with ED or Extra-low Dispersion glass that reduces chromatic aberrations (CA) and one with Nikon's Nano Crystal coat that minimises internal lens reflections. CA is amplified by close-up dioptres so again this seems a useful addition in a macro lens.



The aperture is made with 9 curved blades which greatly improves the smoothness of blurred backgrounds, even at small apertures (note - the smoothness of the background here is rather undermined by JPG compress artefacts for reproduction online). Nikon D2X + 105mm VR. 5T close-up lens. Subal Housing. Subtronic Strobes. 1/250th @ F22.



In dark conditions the AF will hunt like the old lens – and you should consider using a focusing light. A focus light is not essential and I took this image of a Blenny under and overhang without one. Nikon D2X + 105mm VR. 5T close-up lens. Subal Housing. Subtronic Strobes. 1/250th @ F20.



This picture is not remarkable in itself, but the fact that I was able to take 8 similar frames in a row, and all were sharp, is. The VR or Vibration Reduction of the new lens really works underwater making it much easier to use long exposures to produce blue backgrounds and sharp foregrounds in macro photos. Nikon D2X + 105mm VR. 5T close-up lens. Subal Housing. Subtronic Strobes. 1/20th @ F16.

So can you see a difference? If I look at the details in my images at 100% in Photoshop I can see a difference in sharpness and CA, most noticeable towards the corners of the frame. That said, if I hadn't looked for the difference I probably would never have noticed it.

So far the new lens is impressing, if not exactly wiping the floor with the old one. The AF-S is where things start to get more interesting. Try the

lens out on land and the speed and accuracy of the AF-S driven focusing is astonishing (particularly on my D2X) and in a different league to the old 105mm.

But the picture is very different in the low light, low contrast, monochrome world beneath the waves. In these conditions auto-focus tends to hunt. When the old 105mm hunted the focus racks through its range relatively slowly and it was



Vibration Reduction will reduce the risk of camera shake blurring an image during a long-ish exposure. But of course it can do nothing about subject movement. VR has ensured that the body of this Striped Sweetlips is captured sharply, but the fins show a bit of movement blur on the edges. Nikon D2X + 105mm VR. Subal Housing. Subtronic Strobes. 1/25th @ F7.1.

possible to take your finger off and on the shutter release to stop it close to the point of focus to help it on its way- a little bit of manual over-ride as it were. This technique is not possible when the new lens is hunting because it zips through the focus range so quickly. The new lens does not hunt anymore than the old one – it is just the speed at which it zips through the focus range makes you feel more of a passenger and less in control.

This problem does not exist in bright conditions or if you use a good focusing torch, and after a dive or two I found I had quickly adjusted to the focusing characteristics. Some might say that you can always use the lens in manual focus, which is true. But the AF-S is one of the main selling points of this lens, and to say that you can always turn it off rather undermines the case for buying this lens.

I have canvassed the opinions of



In bright conditions the AF is excellent and a big improvement over the old lens. It is easily capable of tracking the eye of a moving fish – here a Bluestriped Grunt. Nikon D2X + 105mm VR. Subal Housing. Subtronic Strobes. 1/50th @ F8.

several other photographers on this subject and views vary. Some feel that the new lens has “clearly superior” autofocus, while others say that they do sometimes miss the slower focus racking of the old lens, but they prefer the new one. And on reflection I think I fall into the latter category. Despite dedicating four paragraphs to autofocus, perhaps I say a lot more when I tell you that since I got the 105mm VR, I have shot in Indonesia, Cayman and Sardinia and I haven’t even put

the old lens on my camera.

Finally and probably most interesting is the VR or Vibration Reduction image stabilisation because this is the first time that this feature has been available in a popular focal length underwater lens and also in any macro lens. Firstly, I should make it clear that the advantage of image stabilisation is to reduce or eliminate camera shake or blurring during long-ish exposures. This lens features Nikon’s VR II, the second generation

design, which they claim gives “the equivalent stability of a shutter speed that is 4 stops faster when compared with a conventional lens”.

If you only shoot short exposure macro shots (i.e. with black backgrounds) VR will not be a significant feature. Its main use underwater is to help us produce blue backgrounds and high depth of field in macro photos by shooting long exposures. And if you like these types of images - it really works.

I have shot Whip Gobies many times and I always prefer these images on blue backgrounds as I feel the water colour really compliments the orange or red of the sea whip. To get a pleasing depth of field I usually keep my aperture on F16 and have to slow my shutter speed down (to say 1/20th) to get the blue. Now I (and many others) have been taking such images for years without VR. With the old 105mm I would usually take about 8-10 frames of a goby at 1/20th to be sure of a sharp one or two. In Bali, during my first dive with the 105mm VR I happened across some whip gobies and thought they’d make the perfect test. As usual I shot 8 frames and to my astonishment every single one of them was sharp. I was sold. Vibration Reduction really does work underwater and has a clear benefit for taking this type of shot.

So should you rush out and

buy this lens? Well, first make sure it fits in your housing and ports. It is certainly sharper than the old one, although only if you really, really look. Also the *bokeh* is noticeably more pleasing than the old lens. But both are minor points, really. The AF-S is faster in bright conditions, but the same speed makes it less user friendly when hunting in low light. And the VR really works, but is only useful if you want to shoot balanced light macro shots.

To come to a conclusion you must factor in your own situation. If you are looking to upgrade the advantages are small and the price is quite big (especially as it might mean buying new ports and dioptres). If you don’t already have a 105mm, then this new lens looks tempting, but then again there are some fantastic second hand deals on the old lens at the moment.

I guess it comes down to whether you are a macro-fanatic, in which case this lens has quality that will pay you back in each image you take. But if 105mm macro is only a minor part of your underwater photography the old 105mm will almost certainly continue take every image you could want.

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