

Paralenz

by Dan Bolt

The Paralenz camera has been around for a little while now, so while you will probably have seen quite a few 'reviews' already – Peter Rowlands asked me to take a look at this latest action-camera from the viewpoint of an underwater photographer. Challenge accepted.

The brainchild of some serious product designers based in Copenhagen, a successful crowdfunding campaign saw 3000 units delivered to happy customers in 2017. As their website is proud to shout about, this was only after an extensive Alpha testing phase that meant 250 divers from around the world fed-back into the product design and (presumably) firmware, app, and associated feature-set.

That feature-set mainly consists of a much-touted Depth Colour Correction (DCC) capability, 4K video, JPG & RAW stills shooting, waterproof to 200m, 120-degree lens, auto start/stop recording and a super-rugged build quality.

Coming in at a hefty £580 in the UK this isn't a cheap option, and so I was very keen to see what this premium-end camera could do; not the easiest thing to achieve in the winter

when diving opportunities, light and clear water are not available in abundance!

In the well-packaged box you get the camera, usb-charging lead, a couple of mounts and some instructions. The camera itself has a built-in battery that is meant to give 2hrs of 4K recording. I have to give the designers credit for putting together a very well-built product; in the hand it's a solid unit that really does feel like it will live up to its 200m depth rating.

The rear cap that you can remove to access the micro-SD card and charging port has three o-rings and a lanyard. Oddly this isn't a replaceable part, where-as the front lens element is - just in-case you scratch it presumably – which you might do because a lens cap isn't included.

There is a small, but very bright and easily read OLED screen at the rear of the camera. At first I thought it was too small to be useful, but after a couple of dives I came to rely on it to let me know what mode/status the camera was in.

There is a single sliding button and a rotating mode-switch both of which have a solid, confident feel





with enough tactile resistance to feel through 5mm gloves with cold fingers. There is a vibrate-function that is also meant to help feed-back to the user when (for example) you turn the camera on/off, or take a photo/video. In reality this would be fine if you held the camera in your bare hands, but mounted and with thick gloves on you really can't feel those vibrations.

The two options for mounting the camera both use a proprietary clamp that fixes into the body of the camera – one allows you to use GoPro type accessories and the other lets you mount it to your mask. I tried the former and mounted the camera onto my Aquatica housing... it's a good job I also attached the lanyard because within a few minutes the camera had fallen off the mount! (And yes I had mounted it correctly, and double-checked before I got in the water). It is interesting to note that

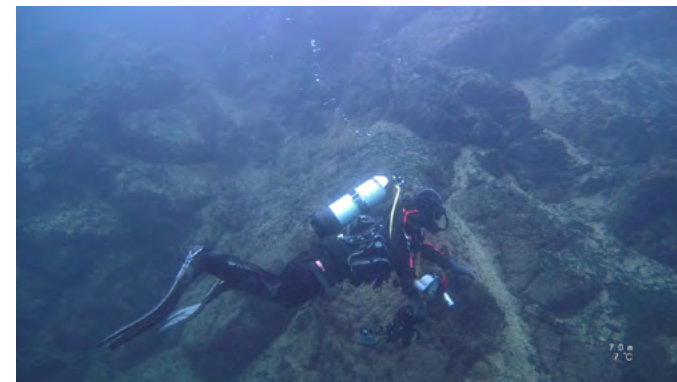
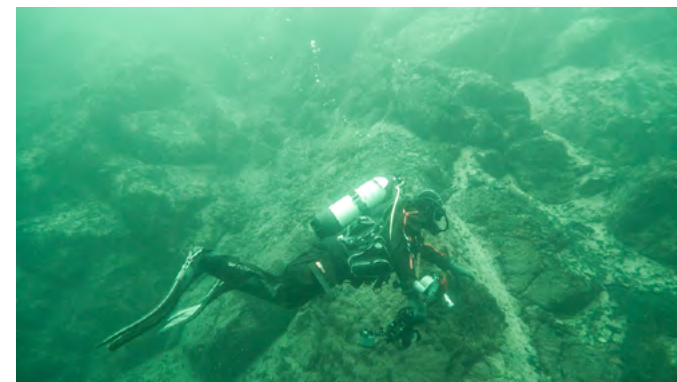


DCC Green comparison one (Vobster Quay inland diving centre), clearly the DCC system is doing a good job of adding colour.

Above – Original DNG file. f/0.8, 1/40th, ISO1400

Top right – tweaked DNG. f/0.8, 1/40th, ISO1400

Right – OOC JPG. f/0.8, 1/40th, ISO1400



the manufacturers are now offering a ball-mount accessory that screws onto the camera body... so perhaps I wasn't the only one to encounter this problem. Since then I've used a modified Inon torch holder that works perfectly.

Using the Paralenz to take video is an easy affair. Turn it on (it takes around 10 seconds before the camera is ready to shoot) and the rear screen shows you battery and SD card % remaining, what white-balance mode is currently set and if the wifi is on or off. Wifi is there because in common with all modern gadgets the Paralenz has an accompanying app that lets you shoot remotely (though there is no live feed in RAW mode), download your media files, change settings and update the camera

firmware.

I'm going to go a little off-piste here, and have a proper rant about the way so many crowd-funded projects seem to treat us consumers! If I had just paid £580 for this camera, and the first thing the app told me to do was to update the firmware – which then fails three times (and for a while I thought I had 'bricked' my new camera) – and also is not able to show me anything I've recorded in the media-library nor give me a live-feed just because RAW shooting is enabled... I'd be a little bit annoyed. I'm a consumer who had paid a lot of money for a premium product... I am not a bloody Beta tester! I get that app and firmware updates can add features and fix bugs, but really guys, a little bit

more thought into the user experience would be very welcome. And while I'm having a rant – it is worth noting that the camera 'locked up' on me on 6 out of the 7 dives I did with it. Really? Is this a finished product? I've a feeling they know about this because there is an official way to re-boot the camera if this happens, thankfully that did work every time... but left me feeling less than impressed.

Right, rant over, let's have a look at the images that you can get from the 4K/8Mpix sensor. Firstly you need to know that this is not a multi-aspect capable camera. Video and stills are both fixed in the 16:9 wide-screen aspect and can't be changed. Not a problem for video, but if you want to shoot portrait stills then you end up with a very odd looking tall-and-narrow image.

I'll briefly note that the video quality is actually superb – both in 4K and standard HD, the recording is crisp, well exposed, shake-free (if you turn on the electronic image stabilisation) and definitely meets expectations from such a high-priced camera. If you've chosen the correct white-balance mode or used lights it also had really good colour rendition too.

So, back to looking at the photographic options available to you: you can shoot plain old JPG files (which produces an 8-megapixel file

around 2.25Mb in size), or RAW and JPG at the same time (proprietary RAW files 15Mb). Additionally (and increasingly I hear this method of 'shooting stills') you can just record everything in 4K video and grab an 8-megapixel frame from that. If you do rely on frame-grabbing for your photographs – then it may be useful to know that by my (probably dodgy) calculations the 4K 60Mbps data-rate gives around 7500Kbps, so dividing that into 30 frames only gives around 250Kb for each frame (aka photo that you can grab). That is a lot less information than even in the JPG file – image 001 is a tweaked OOC JPG and 002 is a 4K frame grab, you can clearly see there is more information in the highlights, shadows and general detail of the JPG.

Like the video quality, the JPG files are very usable and have a pretty good IQ for a small sensor camera. The noise reduction applied can be a little harsh and will lose detail fairly quickly, but if you're worried about getting the best from the camera then you can shoot in RAW too. The RAW files have to be converted* into a DNG file before you can use them, but there is much more detail to be had from the RAW file – and even at high ISO levels you can pull out details that are lost in the JPG. You don't have any control over exposure, but you can select from auto, DCC Green



Auto white balance with Lume Cube video light (Vobster Quay inland diving centre)

Left tweaked DNG. f/0.8, 1/35th, ISO800

Right OOC JPG. f/0.8, 1/35th, ISO800



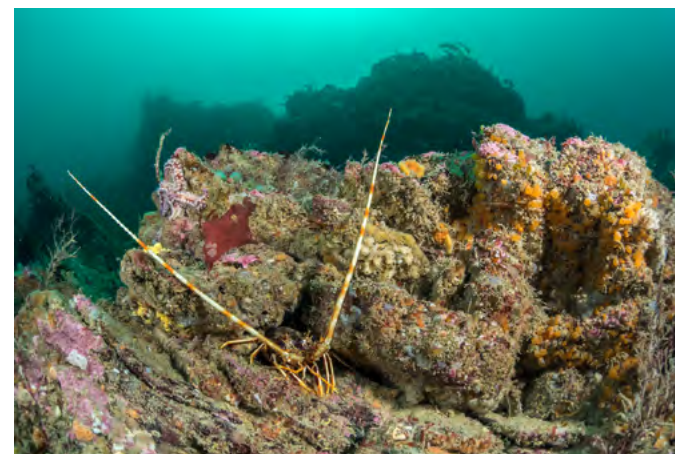
and DCC Blue white-balance.

[* mini-rant! The RAW to DNG conversion process had me tearing my hair out for a few weeks because of basic errors on the part of the manufacturers. Firstly (they tell you) you need to drag-and-drop the RAW files onto the conversion

tool... but they don't tell you that the RAW files and conversion tool HAVE to be in the same folder (this detail is in their instructional video, but not in the written instructions). Secondly, you have to then drag-and-drop these new DNG files onto a .bat file to colour correct them. This is

the part that really had me annoyed. The first batch file I downloaded from the Paralenz website was completely wrong. Being a bit of a geek I looked into the parameters they were using and they had corrected brightness, but no colour correction what-so-ever! It wasn't until a few weeks later that they obviously spotted this oversight and put out a corrected batch file. (see what I mean about being a Beta tester?). Oh, and if you're a Mac user none of this applies to you... because this only works on a PC. And also, don't try to colour-correct more than 75 files at a time because it crashes.]

The most talked about feature of the Paralenz is their Depth Colour Correction electronic white-balance 'filter'. There are two modes, one for green water and one for blue water. And, from what I can see if you choose the right mode then you'll get really quite good results (but only down to 20m, when you're advised to turn it off and use video-lights instead – meaning it's only really effective for 10% of the camera's rated depth). Actually this is a very clever bit of software and when there is plenty of light around it really does add colour back into your stills and video. However... if you elect to use the wrong mode, things get very ugly. 'But why would you use the wrong mode?' I hear you ask, well we don't all live in well-defined blue or green water diving areas. The last dive I did with the Paralenz was in surprisingly clear waters off the south-west of England. Traditionally this would be green-water territory so I set the camera to DCC Green. Sadly (not really) for me the cool 8-degree water was so devoid of planktonic life (as is usual in our winter) that it really was a blue-water dive. You can see what effect choosing the 'wrong' DCC mode had in these images. Despite the clever software, by far the best results can be had by using



Wrong DCC results one (used DCC green but probably needed DCC blue) Frustratingly, the embedded thumbnail in the DNG shows that the camera clearly is capable of getting it right, but without a screen you don't know if the settings are correct until it's too late.

***Top left - Original DNG file. f/0.8, 1/35th, ISO600. Bottom left - tweaked DNG. f/0.8, 1/35th, ISO600
Top right- OOC JPG. f/0.8, 1/35th, ISO600. Bottom right OOC JPG Olympus OM-D E-M1, 2xYS-D1, Panasonic 8mm FE, f/7.1, 1/160th, ISO400***

auto white-balance and some decent video lights, then the Paralenz acts like a good camera should do.

So that leads me nicely on to the biggest problem I have with the Paralenz: it's lack of a screen. I can only imagine this was a design-led decision (there's no-where to put one in the cigar-shaped body) but I really do think this was an oversight. Without a screen framing your shots is a

hit-and-miss affair (and mostly 'miss' because you can't see how soft the edges may be, or how in/out of focus your foreground subject is). Without a screen you can't check if you've got the correct white-balance set. Without a screen you've no method of reviewing your shots. Without a screen you can't show your buddies your images until you get your phone or laptop out and turn on wifi. With



a screen you can see when the camera is using a slow shutter-speed. Need I go on?

I would hate for you to think that I don't like the Paralenz. Despite all its shortcomings I actually do. As a product, in your hands, it's top-notch. When everything works well (and in good light with the correct settings used) it really does record fantastic video and stills. Its just that for such a lot of money I would not expect it to lock-up EVER, let-alone on 90% of my dives, and not to be able to properly see what I'm shooting is very, very frustrating.

But then I have to remember that I am almost certainly not the target audience for this camera. They're probably after the 'casual' shooter, or deep-diver who want a 'fire and forget' system. So for these divers the Paralenz is a good choice. I still have a problem with the price though: for the same money you can get a 4K GoPro and 200m housing that gives you a screen to use and user replace-



able batteries. If the 200m rating is not important (take a look at all the Paralenz website home-page and all their promo clips are shot in less than 20m!) then you can save many hundreds of pounds and still get 4K, screen, stills, wifi etc.

Where this camera is useful for me (because I miss those compact-camera interchangeable wet-lens days), is as a wide-angle option when I'm on a macro dive... just in case ;)

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www.underwaterpics.co.uk
www.paralenz.com



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