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TEST DIVER

CAN'T PICK ONE? WE TRY 10 FOR YOU

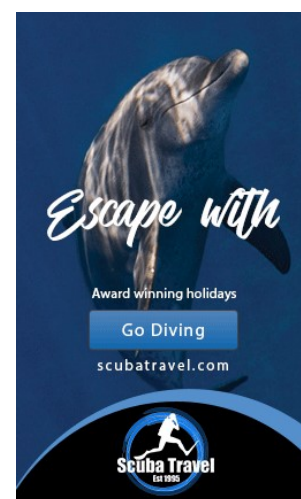
It seems that many divers choose their computer for no more rational reason than they like the look of it. And as MIKE WARD finds when he takes two armfuls on a liveaboard to compare, it could be that this makes perfect sense



THE TWO FUNDAMENTAL variables on any dive are depth and time. How deep you go and how long you stay there decides the schedule you need to follow to surface safely.

Make relatively shallow, short dives and you'll stay inside your no-decompression window and can ascend to the surface at any time, though a safety stop never hurts.

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Go deeper, stay longer and you'll need to perform mandatory decompression stops on the way up to arrive sunny-side without injury.

Monitoring depth and time and providing you with an ascent solution updated in real time is the job of your dive-computer. You dive, it does the math, and all you need to do is read and follow the information it provides.

Of course you could use tables to plan your dive, then write the plan on a slate and use the slate plus a depth gauge and a timer to execute the plan, just like ye divers of olden times did. It's a great way to develop some diving discipline and make you think about what you're doing to your body, but who am I trying to kid? Nobody uses tables any more, so let's stick with computers.

There are about a million units on the market, some basic, some "feature-rich", and with prices from just over a hundred quid to ten times that. How to choose?

I recently took 10 current models on a northern Red Sea wreck safari offering three or four dives per day over a six-day period, diving from Scuba Travel's diver Awards-winning Whirlwind.

Most of the wrecks lay in 30m or less of water, with a few much shallower and a couple deeper.

Some permit multi-level dives, even ending on a reef, and some demand what is effectively a square profile. It's a perfect itinerary to compare computers, offering repetitive diving, dives where mandatory decompression is useful to get the best out of the site, dives where I could chase no-deco times by coming shallower and dives where deco is unlikely regardless of dive-times.

With so many computers to dive I needed a system. The best opportunities for decompression dives would be on days two, three, four and six.

I know Whirlwind's crew well, guides Hamada and Ahmed were happy to provide support, and my buddy John never turns down the chance of a few minutes' deco, so the stage was set.

Two of the computers were console versions, easily plumbed into a first stage with the hoses supplied. A number of others offered gas integration using tank-mounted senders, and two makers had sent the appropriate sender units.

I used these with stage cylinders as required.

The idea was that I could dive a single cylinder where it was sensible, adding a stage or two for the deeper or longer stuff, and mix and match computers to the dives.

I sorted the computers into an order that would allow me to use each one on both no-deco and decompression dives, diving at least three computers per dive. I was looking for overall times to surface, suggested decompression schedules, indicated deep stops and any idiosyncracies.

All this changing computers around meant that individual units might not be accurate for me on a particular dive, because they wouldn't reflect my actual tissue-loading, so I used my own Aladin Tec 2G as a reference master computer. It's been my fallback for almost a decade so I'd feel confident following the deco schedules it suggested.

Before the trip I downloaded instruction manuals for all the units to my phone, a great way to carry such information. I set them all to metric units, salt water and minimum conservatism, and with deep stops enabled where appropriate.

I like to set my own computer to minimum conservatism, so that I know the minimum time to surface the computer recommends. If necessary I can follow it and feel safe, but mostly I'll add time to the last stop for safety. I'm also a believer in deep stops, so on dives of 20m or more I ascend to half my maximum depth and make a two-



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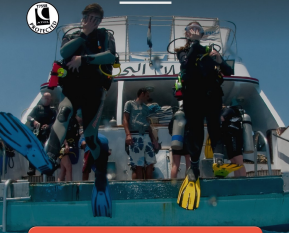


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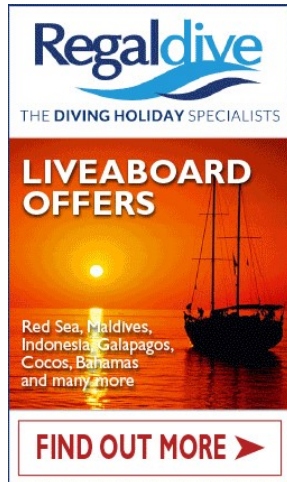


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minute stop, then halve depth and stop again until I reach the deepest stop indicated on the computer.

I don't believe this reduces the need for shallow stops, however, and accept that sometimes my overall time to surface might increase as a result. I also prefer to make my final stop at 6m, where the effects of wind or waves are less obvious, but will ascend to 3 or 4m, water-movement permitting, for a safety stop.



Side by Side

The first thing that struck me when comparing all these computers was just how close the decompression information they provided was, regardless of the units I was comparing.

They weren't identical, but the differences on the first dive of any day were small, regardless of the amount of deco I might have incurred.

That shouldn't be hugely surprising – seven of the 10 used the Buhlmann ZHL-16 algorithm, with only the Suunto Eon Core, Mares Puck Pro and Quad Air using something different.

Repetitive diving didn't reveal many differences between the units either. All the computers on test entered mandatory deco at roughly the same time and counted up stops at roughly the same rate, although the Suunto and Mares units stood out.

For example, when I dived the Suunto Eon Core, using Suunto's own Fused RGBM algorithm, alongside the Scubapro G2, using a Buhlmann algorithm, on two repetitive deco dives on the Rosalie Moller wreck, they were pretty much neck-and-neck on the first dive.

The Suunto asked for a couple of extra minutes of stops, neither here nor there. On the second dive, however, the Suunto gave me a longer no-deco time at depth, but once into mandatory deco the stops it required increased more quickly.

Back at 6m it required significantly longer stops. I'm not suggesting that either was right or wrong, just that they're different and that you need to know.

What did surprise me was that if I had already completed a couple of dives in the day, then took an undived unit on the third dive, the difference in ascent plans recommended by the previously dived and the undived units wasn't huge.

The undived unit always allowed me more no-deco time or required shorter mandatory stops, of course, but not by as much as I'd expected.

And the gap between the end of the night dive and the first dive of the next day, usually around 10 hours, pretty much eliminated any differences at all.

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Many of the test computers offered gas-switching, from two to 10 gases on a dive. Some were nitrox only, others could be set for trimix. Setting and enabling gases was invariably straightforward, and again familiarity with a specific unit was key.

Without exception the gas-switching process was simple, though the Suunto Eon Core stood out as simplest of all, and all the units could deal with missed switches by recalculating the ascent schedule.

All 10 computers were capable of making a late gas-switch, or of returning to a previously used gas and recalculating the ascent plan.

Deep stops were a common feature, and the units fell into two groups, those basing their deep-stop depth on the maximum dive-depth and those that use the decompression algorithm to calculate a stop depth. Both required some attention on ascent to ensure that I didn't miss the stop.

I normally make my deep stops at half maximum depth, so found that they fitted me better, though I'm not saying that they were better.

As a rule of thumb, units that calculated the stop depth, like the Mares, called for the deep stop a little shallower than half maximum depth, but that was profile-dependent.

Whether you do your last stop at 6m or 3m makes a big difference to the time you need to stay there to off-gas. Some of the computers display the time required at your actual depth, while others show the time required and the depth at which they think you should be.

The Mares Puck Pro Plus and Quad Air were the obvious examples, their screens displaying the length of the last stop required at 3m, so if you stop deeper and are off-gassing more slowly you'll need to stay there longer.

It actually feels as if the clock on the unit has slowed to a crawl.

I call these Mares minutes, because I remember them from a Mares M1 RGBM I used to have.

The Suunto Eon Core does this differently and displays the length of stops at your current depth, so moving from 6m to 3m can make a significant difference to the length of stop time displayed.

Your stop time won't be different, it's just shown differently, so you need to be aware of how your computer works when calculating your gas requirement.

Finally, all the units offer a Gauge mode, so provided you're diving within the depth limit of the computer you can plan your dive in advance and then use it as a depth- and dive-timer.

The gas-integrated units allow you to monitor cylinder contents in Gauge mode.

Far more important in real life than all this stop stuff was the clarity of the information provided on the dive, determined by a combination of screen size, amount of data displayed and layout.

The biggest single factor was familiarity with the specific computer. Diving so many computers back to back meant that I needed to recalibrate my head for each one, because they displayed the data in slightly different ways, with more or less additional information available either on the main screen or on one or more alternative screens.

I was still finding new screens on some of the units at the end of the week, which at least gave me something to do on stops, but I preferred those units that gave me essential data and nothing else.

The easiest units to read overall were those that presented only the basic information, such as the Mares Puck Pro Plus or Oceanic Veo 2.0, or which presented the data big and bold and in yer face, like the Suunto Eon Core, Oceanic Pro Plus X and the Ratio iX3M.

The bright, permanently lit colour screen of the Suunto or the illuminated lettering of the Scubapro G2 were easier to read than the similarly sized screen of the Mares Quad Air in low vis and low light, but then I find permanently illuminated computers distracting on

night-dives and prefer one that's dark until required. The TUSA with its automatic backlight was excellent in that respect.

You might have expected the slightly smaller watch-style units to be at a disadvantage on readability, but they were just as intelligible as the bigger computers thanks to careful choice of what to show and where, and in reality the screens weren't really much smaller.

What it all adds up to, somewhat unexpectedly, perhaps, is that divers picking what they like the look of is an entirely reasonable way to go about choosing a dive-computer, provided the computer you choose does enough to support your own diving.

Used within their limits, any of these computers will deliver excellent service.

VOX POP

There were another 20 guests aboard Whirlwind, most of them on the experienced side, so over a deco beer I asked them about their computer use.

There were a number of twin-set divers, a buddy-pair diving sidemount, and another pair who had booked an extra cylinder apiece to be used as a stage, as well as the single-tank divers. Air and nitrox 32 are pumped on board, with nitrox mixes adjusted down for the deeper dives, but everyone but me was using the same gas in every tank they carried.

In reality, none of them needed more than a basic nitrox computer, and the cheapest unit in this test would have done the job. However, almost all of them were using computers offering far greater functionality – and, while aware that they weren't making full use of this, were mainly uninterested in finding out what the other

functions might be, or had not bothered to read the manual much beyond the page on altering the nitrox mix.

A few had researched their units in depth and bought them for specific reasons, but most had simply liked the look of theirs, figured out the basics and dived it without worrying about the technical stuff. Asking about choice of algorithm largely got me blank looks.

OK, it's just a snapshot of one week on a warmwater liveaboard holiday, but the views chimed with those I've heard many times before in different situations (tec and rebreather divers excepted).

I reckon most divers assume that the basic depth/time/deco stuff is going to be OK on any computer, and base their buying decisions on other factors.

OCEANIC VEO 2.0 – £180

It looks and feels like a no-frills, even old-fashioned, dive-computer, and that's a compliment. If you've ever used a computer, you'll feel at home at once with the Veo 2.0.

It monitors the use of only one

gas per dive, chosen from air or nitrox 21-50%, or can be used in Gauge mode, and offers a comprehensive selection of alarms and user-customised settings to suit the way you dive.

It has the familiar hockey-puck shape, with a 3.5 x 3cm screen. Adjust settings using the two grey buttons below the screen.

The left one allows you to scroll through the settings menus and other options such as logbook and planning

functions; the one on the right selects the option you want to alter or view to enter the appropriate sub-menu.

Once in, the left button scrolls through the sub-menu and the right one selects the value. It's simple, but you'll find it easiest to use the manual first time round, as the abbreviations aren't always obvious. Press the left button, for example, scroll to Set and you can select sub-menus headed F, A, U, T or M. These stand for O2 Fraction, Alarms, Utilities, Time and Mode functions – would you have known?

The F menu allows you to set elements that change from dive to dive, such as the O2 content of your nitrox mix. Others cater for aspects that once set can be taken as read on future dives – such as the PO2 you prefer to guide maximum depth, audible alarms on or off and many more.

I especially liked the deep-stop function, which indicates a two-minute stop at half your maximum depth and counts down stop-time in minutes and seconds remaining; the customisable safety-stop depth of 3, 4, 5 or 6m; and the light that comes on only when it's dark, to save battery life.

I had the wrist-mount version but the Veo 2.0 also comes in a console combo with a pressure-gauge or compass in the other pod. The wrist-mount is available separately.

A single user-replaceable battery powers this simple, inexpensive unit that works.



Logbook screen.



Surface screen.



Battery compartment and pins for optional download cable.

MARES PUCK PRO – £199

This straightforward wrist-mounted computer is seriously easy to use. All the data is displayed on a 37mm-diameter screen and accessed using a single button on the base.

Using one button and alternating long and short presses works well, but with

no back button, if you enter 33% for your nitrox instead of 32%, for example, you'll need to cycle through the full range up to 50%, when you'll be sent back to 21% and need to keep pressing until you reach 32%.

Don't sweat it and press too fast or you'll overshoot again. It's no big issue in real life.

Short presses cycle you through the menu options and a long press enters the menu you wish to adjust. Start with the Mode menu and you can

select Air, Nitrox or Gauge. Select nitrox (EAN), and you can then set the O₂ content of your primary gas and then either turn a second gas on or off.

You also set the partial pressure of oxygen for each gas in here. The MOD (maximum operating depth) for each gas is displayed as you alter the PO₂, and you can set different PO₂s for your bottom gas and deco gas. Your setting for the latter will determine the depth at which you're prompted to switch.

Set two gases and the O₂ content of both will alternate on the front screen pre-dive as a reminder. The Puck Pro always starts the dive using the gas with the lowest O₂ content but will assume you intend to use both on the dive, so will show the total ascent time applicable if you switch.

If you don't, it will remind you for a bit before assuming that you intend to stick with the bottom gas, at which point it recalculates the ascent time.

The deep stop function calculates the depth of the stop dependent on the rate of gas exchange from your tissues, so it can pop up a little unpredictably. This at least encourages you to monitor your computer properly during the ascent.

The battery is user-replaceable, and the screen display very clear, with no extraneous data in the way.

Buy a Puck Pro as a newbie and it'll be a long time before you need anything more – at which time it'll make a cracking back-up.



Logbook screen.



Gas-set screen.



Battery compartment and port for optional download cable.

MARES QUAD AIR – £318,

tank-pressure sender £182

This gas-integrated computer with its seriously large and readable screen has a slimline case to help keep it safe from knocks.

The 56 x 40mm screen is divided into three rows of data. At the top is

depth and time information, in the centre row your deco data and the bottom row is where the tank-pressure read-out lives.

Quad by name, Quad by nature, and everything about this computer seems to come in fours. Four buttons set the various options, and you can set up to four gases for use on your dive.

Press any of the buttons and the screen comes to life. You use either of the two right buttons, marked Up and Down, to scroll through the set-up menus.

Enter the menu you want by pressing the top left button, marked Enter, then make changes and save your desired values by using the right and Enter buttons.

It sounds a bit clumsy but it isn't, though you might need the manual to decode the abbreviations Mares uses and the menus in which to find the parameters you can set.

The four gases you can set are variations on the nitrox theme, with increasing oxygen content as you work your way up from G1 to G4, and you can set an appropriate PO2 for working and deco gases. Switching is straightforward.

The manual will also be handy when you pair the Quad Air with one or more tank-pressure senders. It's a straightforward process and reliable, but takes a few minutes per sender. Once paired, the tank pressure(s) are clearly displayed, and the computer will get appropriately uppity about the amount of gas available when necessary.

I most liked the sheer readability of the data. There's enough screen size to lay out the information using nice big numbers and without having to crowd. Clear presentation of vital information is the single most critical function to my mind, and Mares has it bang to rights here.

The manufacturer says that the user-replaceable battery will last 100-150 dives.

OCEANIC OCi – £450,

tank-pressure sender £270

This watch-style computer is small and neat enough to wear comfortably and forget about during the day, so it's not likely to be forgotten on the next dive. Over and above that, it's a full-function four-gas computer with serious diving chops.

It comes with a neat bayonet-fitting



Logbook screen for deco-dive.



Battery compartment & port for download cable.



Gas-set screen.

cable that you can connect to a computer to download dive-data to Oceanic's logging software, and has a user-replaceable battery.

Four buttons set around the periphery are used to scroll through menus and set up the computer, and as with most watch-style computers the manual proved vital.

Once the unit has woken from the Deep Sleep mode in which it arrives you set the time and units you



Dive-log screen.



Download port and cable.

intend to use and it defaults to Watch mode. Get into the dive settings by pressing the top-left Mode button for more than two seconds.

You can set up to four nitrox mixes and pair the watch to a similar number of tank-pressure senders, providing the neatest all-in-one gas-integrated option on test here.

I'm not usually a fan of lots of data on a small screen but Oceanic hasn't overdone it and the layout is perfectly clear. I'd be quite happy diving the fully gas-integrated OCi as my main computer.

The nitrox mixes you can set range from 21-100% oxygen and must be set in increasing steps, then be turned on or off in order for any given dive. So you cannot, for example, enable gas three without first enabling gas two.

This means you need to reset the OCi before each dive with the gases to be used – no bad thing, as you will be thinking about the dive-plan more closely. Actual gas-switching is a piece of cake.

Like other Oceanic models this unit allows users to choose between two decompression algorithms, the Buhlmann ZHL-16c derived Z+ and a more liberal DSAT algorithm.

Deep stops are available, both on no-deco and mandatory deco dives, though the manual counsels against them on the latter. Unusually, Oceanic also includes some dive-tables in the manual, which I rather liked.

SUUNTO EON CORE – £599, tank-pressure sender £250

Where to start? Suunto has a well-deserved reputation for its computers and I really liked the new Eon Core when I tested it fully a few months ago, so it was good to have it on this comparison test.

It's a decent-sized wrist-mounted unit with



Dive-set home screen.



a big, colourful screen measuring 50 x 38mm that you can customise to your heart's content. I liked the way Suunto had the test computer laid out, and left it as it was.

The other units in this test all have similar dive-logging software available, and some also have software that will update the computer when new developments occur, but the free-to-download

Suunto DM5 needs to be regarded as part of the package, because you'll need it to access some features of the computer. It's a really good standalone dive-planner too.

Charge the unit using the included USB cable in a computer port or with a phone-type USB charger. Pressing any of the three buttons on the right of the unit will wake it up. You can flip the display if you prefer your buttons on the left.

A long press of the central button accesses the set-up menus, then the top and bottom buttons scroll up and down. A short press of the centre button enters appropriate sub-menus and a short press of the centre button confirms choices. It's an intuitive, easy-to-use system, the result of thought and experience.

The Eon Core offers the option to dive with air or nitrox out of the box, plus a bottom-timer mode, and you can turn on trimix via the DM5 app. Suunto doesn't specify how many gases you can set, but I had no trouble setting and planning a dive with a helium travel mix, helium bottom mix and two deco mixes, and the computer was happy for me to add more. Switching couldn't be simpler.

As with other gas-integrated units, ideally you'll want a sender for each tank in use, and when you're fully tooled up the computer will calculate your deco and monitor gas use to deliver you to the surface.

In the water the dive data is displayed in a very readable fashion, and of all the computers I had with me, this was the one most people fancied as their next computer.



Surface screen.

Logbook screen.



Tank-pairing screen.

TUSA SOLAR IQ-1204 – £625

This is the chunkiest of the watch-style units on test and displays data on a 27mm-square screen, but it wouldn't look out of place anywhere except perhaps at formal events where you need to wear a dinner-suit or long black frock.

The TUSA party trick is the solar power. Provided it's getting some sunlight, the

battery will never need to be recharged or replaced.

I certainly experienced no out-of-power issues on the test, and even left it in a drawer for a week and found it still fully functional when I got it out.

Compared to some units in the test that needed their rechargeable batteries topped-up mid-trip, that was really nice.

The manual proved essential in setting up, but

once the relevant sequences were clear in my mind, changing settings between dives was simple.

As a watch-style instrument the default screen is Time mode, and you need to use the four buttons, two either side of the case, to access and alter the various settings. A fifth button on the bottom of the case serves only to turn on the light for reading it in the dark.

You don't need that much because the IQ-1204 uses a sensor, so the backlight comes on automatically when you lift the watch to your face to check the time or, during a dive, to check your decompression status.

I really liked this simple feature. You can enable or disable it in the appropriate menu.

Dive into the menus and you can set four flavours of nitrox to speed your deco, ranging in O₂ concentration from 21-100%. You need to activate the gases in order and according to your plan for the specific dive, and the IQ-1204 will track and monitor the dive based on gases set and gas-switches made.

Gas-switching is a doddle, and if you don't make a switch the unit will assume you're intending to surface on the last gas you used, and calculate your deco accordingly.

Another function I really took to was the big, bold, black box that appeared at the top of the screen with the word DECO in it to tell me I'd entered mandatory decompression.

Most computers are more subtle about it, but shouting out the message was fine. It doesn't look that big in the picture above, but in real life it was very noticeable.

This was a grand device that I liked a lot.



Watch screen.



Buttons.



Logbook screen.

SCUBAPRO G2 – £980

Scubapro's current range-topping computer comes in both wrist-mounted and console version – I was sent the latter. The G2 is as full-featured as computers come, yet Scubapro claims that it's totally intuitive to use, with no manual needed.

It was right, as I first discovered when I tested the unit last year. I was

also pleased to find that it provided near-enough identical decompression results to my own Aladin Tec2G, especially when the latter gave up the ghost halfway through my diving week.

The console version of the G2 comes with a dedicated high-pressure hose that screws directly to an hp port on the first stage of your regulator. At the other end of the hose is a bayonet fitting, so you can attach or detach the computer from the hose in transit.

The computer has a thick rubber shell. A moulded loop on top of the unit is an ideal place to attach a bolt-snap so that you can clip it off somewhere safe.

Charge the battery using the included USB cable, turn it on and select the menus and options using the three buttons on the face of the unit. A small caption tells you what each button does as you press it, to make things even simpler.

The G2 allows you to set and select up to eight gases on any one dive and activate them as and when you need them, choosing from air, nitrox and trimix.

The only limit is probably the 120m depth one, but that's irrelevant for most of us.

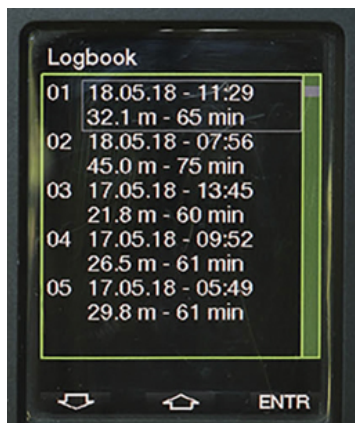
The screen is nicely sized, but Scubapro packs a lot of information on there. If the figures can sometimes seem a bit weeny, the important ones are bigger and easier to read.

The screen is permanently lit, with the lighting options being dim or bright, so you'll never struggle to read the face even if you're task-loaded and don't have a finger to spare for the appropriate button.

Select the compass setting and you have a very fine navigational instrument, easily viewed and followed – it's almost like using an old-fashioned magnetic compass.



Compass.



Logbook.



Console surface screen.



Quick disconnect.

RATIO iX3M REBREATHER – £999,

tank-pressure sender £275

This computer stands out. Made in Italy, it's a big, square, brutal-looking piece of kit for which function clearly comes before beauty.

Gone are the plastic straps of pretty much all the computers in this review; instead you get a pair of elasticated length-adjustable straps with big snap buckles that can pinch bare skin but will fasten securely around the bulkiest drysuit arm.

Hit any of the four buttons on the base to bring the computer to life and you'll see a full-colour TFT screen measuring 58 x 44mm. It looks big enough for watching a



Surface screen.



Straps.

movie on your deco stops. You can't, which is a shame, because the iX3M looks to be built for the sort of dives that would incur enough deco time to screen *Gone With the Wind*.

On start-up you'll see an odd little icon to the right centre of the screen. This shows the current phase of the moon and is another clue that this is no ordinary instrument.

The iX3M has too many functions and settings to cover here but they're all accessed and changes made using the four buttons. These are quite heavy to push, so are unlikely to be pressed by accident. Given the diving this unit will support, that's reassuring.

Putting the set-up sequence into some sort of logical order, you can select either Buhlmann or VPM algorithms, with settings for gradient factors or micro-bubbles, then set the computer to act as a back-up for your rebreather or run an open-circuit dive.

You can pretty much set any gas or combination you care to mention and then customise your deco stops, deep stops and safety stops to suit your preferences. Whatever your dive, this computer can be set to allow you to execute your plan and stay in full control of all the variables.

The built-in acoustic and vibration alarm also deserves a mention. Audible alarms can often seem mimsy, but not this one. It's loud and clear, and backed up by a vibration that feels like your buddy gave your arm a tug.

Get past the intimidating feature set and this is an easy-to-use and easy-to-dive-with computer. Easy, Deep and Tech variants offer various reduced levels of functionality if these suit your diving better. Power comes from a rechargeable battery.



Gas-set screen.

GARMIN DESCENT MK 1 – £1000,

for titanium strap £275

It looks more like a slightly scaled-up watch than a scaled-down dive-computer. It comes with a plastic strap with optional long and short tongues to make it easy to fit around even a bulky

drysuit arm, or a beautiful titanium bracelet with the plastic strap included in the box for when you go diving.

This watch offers a huge range of options and only a few of them relate to diving, but viewed solely as a dive-computer it offers a choice of Air, Nitrox, Helium and Gauge modes, with a single gas or up to six different ones available on any dive.

Unusually, it assumes you'll complete your dive with the currently selected gas, and then updates the time-to-surface indicator when you switch to an alternative.

Incur some deco with a low-O₂ bottom gas, for example, and you might see a really long ascent time indicated that suddenly reduces when you switch to a higher-O₂ deco gas.

I found that this encouraged a bit more attention to gas-planning, and even inspired some old-fashioned pre-dive planning, no bad thing. A planning function is available on the watch, and works very well.

Information is displayed on a clear 3cm-diameter screen. Access to the huge range of functions is available using the five buttons set around the rim of the unit, three on the left and two on the right. You will need the manual with this one.

I find watch-style units far less intuitive to set than other computer styles, even when they don't offer the Descent's staggering range of functions. However, once you've used it a few times it's as easy to set up as any other computer, and switching gases under water is straightforward.

Two functions I especially liked were the conservatism setting, which allowed me to input a personalised gradient factor instead of just picking the factory-set low, medium or high conservatism offered in the menu; and the compass function, which was very straightforward to access and use.

And that's without mentioning all the other stuff such as full GPS-based navigation, fitness training, Golf and Ski modes – seriously.

Power comes from a rechargeable battery topped-off using the supplied USB cable.



Compass.



Gas-set screen.



Charger cradle with rear.

OCEANIC PRO-PLUS X – £1000

Oceanic's latest iteration of its range-topping Pro-Plus is a serious piece of kit. Chunky and weighty, it exudes such solid reliability that it feels you could use it as a lumphammer.

There's an hp hose to connect to your first stage and a bayonet fitting to detach the computer from the regulator so you can download dives or carry it as cabin baggage.

A plastic collar screws into place and a rubber sleeve slides over the coupling when it's connected.

The unit is built into the console rather than having separate rubber armour, and there's a loop on top to attach a bolt-snap for clipping-off somewhere convenient.

Turn the unit on with a single press of any of the four buttons and a 55 x 42mm screen bursts into colourful life. Oceanic has chosen to limit the amount of data shown on any one screen, so dive readability is excellent. Surface and set-up menu screens are more crowded, but you'll be out of the water and taking your time so that's OK. This was the clearest of all the computers tested.

The buttons are arranged in T formation. A small label at the bottom of the screen tells you which to press to select and change which setting, return to the main menu and so on. It's rapid and intuitive, and you won't really need the manual.

Four gases can be set ranging in O2 concentration between 21% and 100%, with gas-switching determined by the set PO2 for each gas, and both set-up and switching is as simple as with any computer on the test.

The compass is like using a magnetic instrument but lit up for legibility. Choose from two deco algorithms, Z+ or DSAT – a label on the screen describes DSAT as "more liberal for everyday diving".

I've heard it said that this setting is intended largely for warmwater, minimal-effort diving while the Buhlmann-derived Z+ is a bit more suited to coldwater diving. Your computer, your choice.

So, which do you buy?

Having established that there's not much to choose between computers in terms of their decompression performance, you're going to have to make your decision some other way.

The computers in this comparison fall naturally into a number of different groups, but probably the most fundamental is the style of computer.



Compass.



Quick-disconnect bayonet.



Surface screen.

Do you prefer watch-style or a standard computer? If you prefer your unit on a console, many are available as both wrist- and console-mount, which makes life simpler.

If you go for a watch, the three here offer real differences. The Garmin will monitor trimix use and isn't gas-integrated but is the most watch-like out of the water.

The Oceanic OCi offers gas integration and four nitrox mixes in a streamlined case, and the TUSA has that everlasting solar battery and offers four nitrox mixes, but doesn't have gas integration.

The only issue I had with the watches was that the positioning of the buttons on the sides of the case could allow for accidental presses, so I sometimes found myself looking at a compass screen instead of the main dive screen.

The trimix computers were the watch-style Garmin, the Scubapro G2, the Suunto Eon Core and the Ratio iX3M. All but the Garmin offer gas-integration and a CCR function, though the Ratio goes further than the others by offering a sensor board that can act as a check on your rebreather, and is rated much deeper than the others.

However, not that many divers will go beyond the 80m mark offered by the Suunto Eon Core, and if the Suunto appeals but the 80m depth-limit doesn't, go for the Suunto Eon in the steel case.

The multi-gas nitrox computers are the Oceanic Pro Plus X and the Mares Puck Pro and Quad Air. The Puck Pro isn't gas-integrated, which shows in the price. The Mares Quad Air is but doesn't offer a compass function; the Pro Plus X has a tremendous display with a great compass, but the price is much higher.

And the Oceanic Veo offers only one gas but would have been all that was needed by any diver on my wreck-trip bar myself. In reality I could have managed perfectly well with it, because my buddy was using a single-mix computer and I wasn't out of the water until he was.

And which is right for you? Depends on the diving you do, is the best I can offer. Be honest about that to yourself, and about how much you want to spend, and there's a computer here that can do the job for you.

CONTACTS



Garmin –
garmin.com
Mares – mares.com
Oceanic –

oceanicworldwide.com
Ratio – liquidsports.co.uk
Scubapro – scubapro.com
Suunto – suunto.com
TUSA – cpspartnership.co.uk



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