

## PRODUCT INFORMATION

**marionda**

marine analytics and data

### Dissolved inorganic carbon in seawater (VINDTA 3D):

The **VINDTA 3D** is a system for the extraction of CO<sub>2</sub> from a sea water sample and quantitative transfer of released CO<sub>2</sub> to a coulometric titration unit (e.g. coulometer 5011, UIC Inc., USA) for the measurement of total dissolved inorganic carbon (DIC) in sea water. Sample handling and coulometric titration is controlled by the software.



In principle, the VINDTA 3D is the DIC - part of the VINDTA 3C; see there for further details. The VINDTA 3D is prepared for the optional available separate **add-on units** for **gas calibration** with pure CO<sub>2</sub> and for **salinity determination** from the same sample. Another option is a Peltier cooler option for the condenser (this saves one circulation bath).

The VINDTA 3D is comparable to the former SOMMA system. Optional we offer another version of the VINDTA 3D, that uses the SOMMA glassware and partially also SOMMA hardware (e.g. the 110V AC valves; this 'SOMMA version' makes use of 'leftovers' and spare parts from an old SOMMA system).

#### features:

- automated sample handling and coulometric titration
- easily transportable and sea-going
- only one gas (carrier gas) required
- precision typically  $\pm 1 \mu\text{mol/kg}$  (open ocean water)
- user friendly software interface using LabVIEW™
- optional control PC (Shuttle-PC) tested with the hardware and with all software and drivers installed
- gas calibration and salinity measurement as option

LabVIEW™ is a trade mark of National Instruments Inc.

#### Additional hardware required or recommended:

UIC coulometer model 5011, 5012, or later (with 5011 emulator option)  
circulation bath for temperature control (20 or 25°C) of the system equilibration of sample bottles  
second circulation bath for the condenser ( $\sim 2^\circ\text{C}$ ; not required with Peltier option)  
carrier gas supply (nitrogen or dry and CO<sub>2</sub>-free air)