



Ocean-i *Autonomous, long-term, remote monitoring of ocean colour from any boat or fixed station.*

Ocean-i is a robust system initially designed for the autonomous monitoring of ocean colour. The system is centered around a sophisticated electronic data logger that controls the data sampling routine for the sensors, stores and transmits the data.



The System:

In its basic configuration three TriOS RAMSES radiometers are connected to Ocean-i for the measurement of ocean colour. When it was selected for use in the Volvo Ocean Adventure two of these measured water-leaving radiance. In that configuration, one sensor looked towards each side of the vessel. This avoided using data from a sensor which is at an oblique angle to the water or contaminated by the boat's wash or sun glint. The third sensor measured downwelling irradiance in order to calculate reflectance.

Ocean-i initiates data acquisition from all three sensors at user-specified intervals during daylight hours. The data is collected over 255 channels from 300 to 1130nm and is stored on the on-board memory card.

In addition to the data from the radiometers Ocean-i also stores the acquisition time from its internal clock, the position of the acquisition from the integral GPS and diagnostic information from the last cycle. When fitted with a 128Mb card Ocean-i is capable of storing hourly daytime acquisitions from three radiometers for more than a year.

Ocean-i

The Data Logger:

The Ocean-i data logger can be supplied ready to interface, collect and process data from any RS232 instrumentation and can be configured to log that data to a local PC while still storing it on its internal memory card. Sampling frequency, amount of processing, data selection and transmission frequency and quantity can all be programmed to suit your needs.

The standard case is sealed to IP67 and supplied with industry standard neoprene wet-pluggable connectors.

Ocean-i can also be supplied in either a plastic pressure casing, good to 100m/100bar, or a titanium pressure casing, good to 300m/300bar.



Standard Features

- All data is backed up to removable Flash Ram enabling post-processing and analysis of the full data set
- Integral GPS providing position, heading and accurate time for each acquisition
- Triband GSM modem to allow remote data collection and control
- Data collected at user-selectable intervals ranging from every 5 minutes to once an hour
- Information sent back includes sensor id, integration time, position and time of acquisition
- Low power consumption - easy installation on any platform
- Fully autonomous once set up and running
- Communication via RS232 serial link to any PC
- Interfaces with 2 TriOS RAMSES-ARC sensors measuring water-leaving radiance to obtain best data
- Interfaces with 1 TriOS RAMSES-ACC sensor measuring downwelling irradiance to calculate reflectance
- Data collection only during daylight hours to conserve storage space.
- Supplied with user-friendly setup and diagnostic software
- 2-way communication allowing user to download data and change system settings online.

Options

Ocean-i is an adaptable system that can be configured for use in a wide range of situations and applications. Some of the options include:

- Internal and external power options - 12v, battery, solar power etc.
- User-specified sampling and data transmission intervals and quantities
- Fully programmable and special data acquisition regimes
- Data transmission via Iridium satellite system for areas out of GSM range
- Pitch/roll sensor for selection of sample from the sensor with best field of view
- Interfacing with other communication systems according to user requirement
- Can be interfaced with up to 8 RS232 instruments

We welcome any discussion as to possible applications of the system or how we can configure it to best suit your requirements.

Applications

- Long-term time series
- Ships of opportunity
- Buoys and jetties
- Water quality
- Satellite data comparison
- Monitoring
- Education and research

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