

CYCLE – PO₄ in-situ dissolved phosphate analyser.



WET Labs introduces the new CYCLE-PO₄ in-situ dissolved phosphate analyser.

The CYCLE combines precision micro-fluidics with state-of-the-art optics to provide unparalleled precision and accuracy for in-situ nutrient monitoring.

The CYCLE brings standard wet chemistry techniques to the field and is designed to be an operational sensor providing the highest quality data day after day, deployment after deployment.

Reagent cartridge technology and the straightforward software interface allows setup in minutes. On-board calibration assures quality data analysis. Control can be autonomous or external. Fully integrates with WET Labs' sensors for a full biogeochemical sampling system.

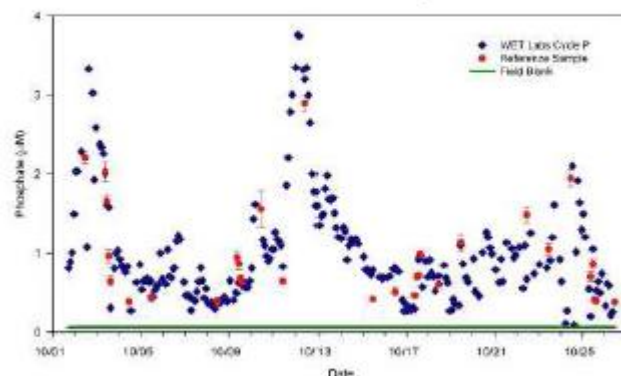
Designed for unattended long term moored operations, the CYCLE-PO₄ is the first of WET Lab's line of single-analyte chemical sensors. The CYCLE line combines precision micro-fluidics with state-of-the-art optics to provide unparalleled precision and accuracy in operational in-situ monitoring of nutrient

Designed for long-term use, the CYCLE-PO₄ features:

- Colour coded and easy to fit reagent cartridges
- On-board spike calibration
- Calibration scheduling
- Nanomolar resolution
- Easy-to-use software
- Titanium optical cell
- Over 1000 samples
- Deployments more than three months
- Smart sampling minimizes power consumption
- Calibrated output
- 200m depth range

Proven in the Field

Clinton River, Michigan comparison of CYCLE-PO₄ with field sampling data.



Alliance for Coastal Technologies, 2008. Performance Demonstration, WET Labs CYCLE-PO₄ Nutrient Analyzer, ACT TD08-03.

Specifications

Mechanical

Height (w/handle)	56 cm
Width	18 cm
Weight in air	6.8 kg (w/reagents)
Maximum depth	200m

Electrical

Input	9.5-18 VDC 2.0 A max
Current draw	125 mA avg
Serial output	RS-232
Connector	MCBH-6-MP
Sample rate	2 per hour (max)
Data memory	1 GB

Optical

LED wavelength	880 nm
Path length	5 cm
Linearity	$\geq 95\% R^2$

Chemical

Precision	50 nM
Dynamic range	0 -10 μ M
Reagent capacity	> 1000 samples

Designed for Ease of Use



Host Software

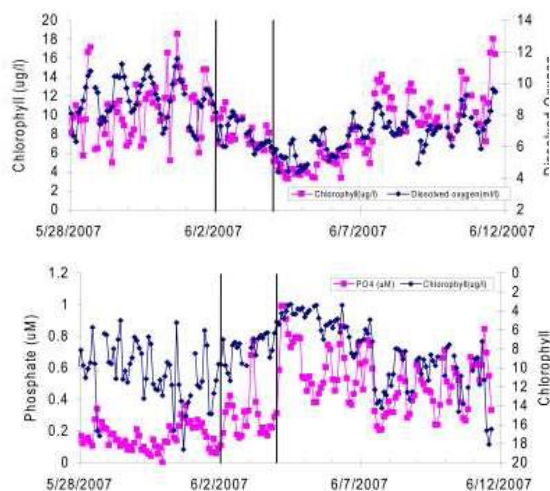
Software features a simple interface for setup, initial data analysis, and quality control.

Reagent Cartridge System

- Color-coded
- Intuitive setup
- Rapid change-out



From an ACT report, available at: www.actus.info/evaluation_reports.php



The chlorophyll and DO records are closely coupled throughout the time series, demonstrating that biological oxygen production was a primary influence on the in-water dissolved oxygen concentration. The vertical lines indicate the duration of a rain event. The rain event dampened phytoplankton growth rates leading to a decrease in chlorophyll concentration.

Before the rain event, phosphate concentrations were generally extremely low. After the rain event, phosphate concentration spiked up and chlorophyll decreased to a minima. Subsequently, phosphate and chlorophyll were inversely coupled, suggesting uptake driven kinetics controlled the phosphate concentration.

Specifications subject to change without notice.

REF – CYCLE-PO4 iss A APR 2009