



Sea-Bird Coastal HydroCycle

In Situ Dissolved Phosphate Analyzer

The Sea-Bird Coastal HydroCycle-P is a wet chemical sensor engineered for environmental monitoring to enable valid, scientifically defensible results that lead to better management recommendations. A NIST traceable on-board standard, factory calibration check, a 2.3 μg P/L detection limit, and an accurate calibration mean you can trust data, line-up grab sample records, and swap sensors with minimal offsets.

Autonomous operation, low power, and five month reagent stability enable extended deployments in remote locations. Over 1,000 samples between services, up to four samples per hour, and both SDI-12 and RS232 permit capturing higher frequency phosphate data than ever before. The fluidics have been advanced to provide > 90% uptime free of bubbles for data quality in high oxygen saturation environments and to ensure it stabilizes rapidly after deployment. Filter life has been extended to minimize clogging and enhance data quality during high sediment events.

Quality control (QC) flags have been developed to speed up troubleshooting and provide confidence in data quality and uptime. With HydroCycle-PO4 you can know that your instrument is operating properly and justify your data quality, so that you can spend your time analyzing what the data means.

HydroCycle-PO₄ : Wet Chemistry Engineered for Environmental Monitoring

Applications

- For continuous or real-time measurement of dissolved phosphate in:
- Lakes and reservoirs
- Streams, rivers, channels, or canals
- Estuaries

Ideal for monitoring for:

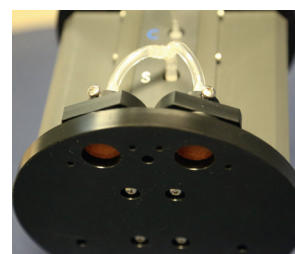
- Point and non-point source nutrient inputs
- Environmental dynamics and change

Performance Features and Benefits

- Accurate- Nanomolar resolution and scattering insensitive optical cell.
- Robust – Reagent lifespan of 5 months and greater than 90% uptime.
- Advanced Fluidics – Data quality resistant to high oxygen levels.
- Onboard Quality Control – Real time QC flags to speed up troubleshooting.

Additional Features

- Each instrument is factory calibrated and ships with a NIST traceable check standard



Specifications

Mechanical

Rated Depth	200 m
Weight in Air (w/reagents)	6.8 kg
Weight in Water	0.37 kg
Height (w/handle)	56 cm
Diameter	18 cm
Temperature (Operational)	0- 35°C

Electrical

Input (Main Port)	10.5 – 18 VDC
Current Draw (Operation)	3.0 A max
Current Draw (Operation)	115 mA avg
Communication Interface	RS-232/ SDI-12
Data Storage	1 GB CF Type II

Optical

Wavelength	870 nm
Pathlength	5 cm
Linearity	> 95% R ²

Analytical

Detection limit, three standard deviations of
18 MOhm water
≤ 0.0023 mg/L PO₄-P

Quantification limit, ten standard deviations of
18 MOhm water
≤ 0.0077 mg/L PO₄-P

Standard deviation of standard solution of 2.6
µM
≤ 0.0015 mg/L PO₄-P

Range, nominal₁
0 – 0.3 mg/L PO₄-P

₁Higher range is possible (0-40 µM, 0-1.2 mg/L PO₄-P, but is outside specifications.