

HydroCycle-PO₄

In Situ Dissolved Phosphate

The HydroCycle-PO₄ 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, a 2.3 µg P/L detection limit, and an accurate calibration means you can trust data, line-up grab sample records, and swap sensors with minimal offsets.

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

Features

- **Accurate**- Nanomolar resolution and scatter-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.



Optics

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|------------------|----------------------|
| Path Length | 5 cm |
| Wavelength Range | 870 nm |
| Linearity | > 95% R ² |

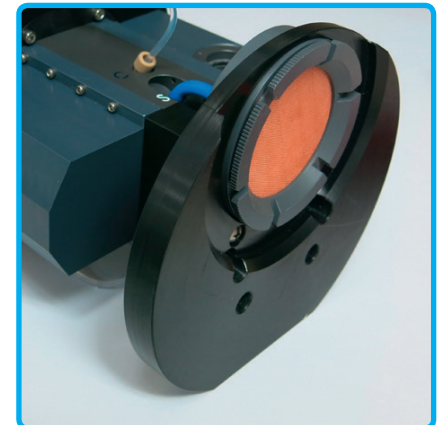
Electrical

| | |
|--------------------------|---------------------|
| 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 |
| Battery | No internal battery |



Mechanical

| | |
|----------------------------|----------|
| Rated Depth | 200 m |
| Weight in Air (w/reagents) | 7.6 kg |
| Weight in Water | 0.4 kg |
| Height (w/handle) | 56 cm |
| Diameter | 18 cm |
| Temperature (Operational) | 0 - 35°C |



- 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 $2.6 \mu\text{M} \leq 0.0015$ mg/L PO₄-P
- Range, nominal 0 – 0.3 mg/L PO₄-P
- Higher range is possible (0-40 μM , 0-1.2 mg/L PO₄-P), but is outside specifications.

Service and Warranty: Factory service recommended every 12 -18 months. 1 year warranty.