



**SEAL**  
Analytical



# AQ400

**DISCRETE ANALYZER**

AQ400 is a flexible analyzer that uses the principle of discrete analysis where each test occurs in a separate or discrete reaction vessel.



# AQ400

*AQ400 is ideal when many and varied tests are needed on different samples and/or individual results are needed immediately.*

**USEPA, ASTM, ISO**

*and other international regulatory compliant methods are available.*

## METHODS INCLUDE

Alkalinity

Ammonia

Chloride

Cyanides

Nitrate/Nitrite

Nitrite

Phenol

Phosphate, ortho

Phosphorus, total

Silicate

Sulfate

Total Kjeldahl Nitrogen

**PLUS MANY MORE**



## HOW DOES THE AQ400 WORK?

The AQ400 robotic sampling arm works in conjunction with a stepper motor-driven syringe that is responsible for aspirating, dispensing and mixing accurate and precise quantities of sample and reagent in miniaturized test tubes called reaction wells.

The sample and reagents are incubated in heated reaction wells until reaction is complete. A single aliquot is then transferred into a 10mm pathlength optical glass cuvette. The absorbance is read on the stationary reactant to ensure the best possible signal to noise ratio.

Each sample is read at the same position in front of the detector in the 10mm glass cuvette, similar to SEAL colorimetric flow systems, known for their high reproducibility and lowest detection limits. This eliminates issues of reaction well variability and scratching found in direct read discrete systems so improves reproducibility. In the SEAL AQ series, liquid is moved not the tray - fewer moving parts equals higher reliability.

Once the absorbance is read, the glass cuvette is thoroughly cleaned and checked, ensuring no carryover or cross contamination.

▶ ***As a market leader, SEAL has over 1,000 applications available and under continual development. Markets include water, wastewater, soil, plant, fertilizer, food and beverage. Please contact us for your specific application.***

# AQ400 – The latest in discrete analyzer technology

*Designed specifically for the environmental market*

## ADVANTAGES AND BENEFITS



- ~ 100% optical glass stop-flow cuvette
- ~ 10 mm optimum path length
- ~ Different path lengths available



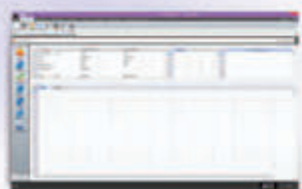
- ~ Low cost, disposable wells used for each discrete reaction
- ~ Constant heating and programmable reaction time ensure reaction reaches completion
- ~ Automatic reagent level sensing verifies sufficient reagent volume



- ~ Optional integrated cadmium coil reduction for nitrate/nitrite determination
- ~ Cadmium coil is sealed and valve controlled
- ~ In situ coil regeneration is fully automated



- ~ Unique probe washer for cleaning sample probe between sample and reagent
- ~ Eliminates cross contamination
- ~ Ideal for wastewater



- ~ Highly flexible software designed with user input
- ~ QCPro™ Data Quality System – allows the user to specify QC types, limits and corrective actions

- ▶ **True unattended operation – including ability to run overnight**
- ▶ **Automated standard preparation and dilution of over range samples**
- ▶ **Tests programmable per sample to reduce analysis time**
- ▶ **Add samples after a run has started**
- ▶ **Total volume per test only 500 – 600 µL**
- ▶ **Different size sample trays are available to accommodate different workloads**
- ▶ **Segregated chemical waste and wash minimizes waste disposal**
- ▶ **LIMS compatible – export in .csv format**



### **SIMPLE USER MAINTENANCE**



**The AQ400 can be used as a standalone spectrophotometer.**

*The optional vial adaptor can accept vials of different sizes for reading tests such as COD.*

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**AA1****QuAAtro39****AA3****AQ1****AQ2**

## RELATED PRODUCTS

**AA3** and **QuAAtro39** are high performance, fully automated instruments, that use the principle of segmented flow analysis to achieve high throughput, high reproducibility and low detection limits.

The **AA1** is a recent addition to the SEAL Segmented analyzer range. It is compact, sleek and simple – ideal for laboratories running 1 or 2 dedicated chemistries.

**AACE software** is a common platform for all SEAL Segmented Flow Analyzers and is intuitive and flexible.

The **AQ Series** are flexible analyzers that uses the principle of discrete analysis where each test occurs in a separate or discrete reaction vessel.

*Discrete analysis is complementary to segmented flow analysis and many laboratories use both techniques. The AQ series Discrete analyzers are ideal when many and varied tests are needed on different samples.*

SEAL's enhanced computer controlled **BD50** digestion block, is especially suited to Total Kjeldahl Nitrogen and Phosphorous methods. Reproducible results are ensured as it is made from solid aluminum with a heating grid for even heating across the whole block. Please see our detailed brochure for further information.



## COMPREHENSIVE SUPPORT

We offer comprehensive applications, technical service and software support.

### INCLUDING

- ▶ A choice of preventative maintenance and service contracts to meet your specific requirements
- ▶ In-house and online training
- ▶ Guaranteed availability of genuine consumables and spare parts
- ▶ Adaptation of methods to specific requirements such as matrix, range or detection limit
- ▶ Continuous in-house development of software to incorporate new customer requested features

## THOMAS CAIN (a SEAL Analytical brand)

*manufactures automated sample preparation and digestion systems for the analysis of trace metals for environmental laboratories. From the **SmartBlock** – a simple manual digestion block – to the **DEENA** acid digestion system, that fully automates the sample preparation and digestion for EPA and other laboratory methods.*



[www.seal-analytical.com](http://www.seal-analytical.com)

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