

Water and nutrient analyses finally mastered

Powerful. Efficient. Confident.

For fully-automated agricultural testing

Determination of nutrient levels in soil, fertilizer, and plant extracts is critical for maximizing crop yield and providing effective, risk-based control of the food chain. Fertilizer manufacturers, agricultural service providers, and commercial soil-testing labs need accurate and reliable results to provide their clients with agronomic assessment and recommendations for soil augmentation.



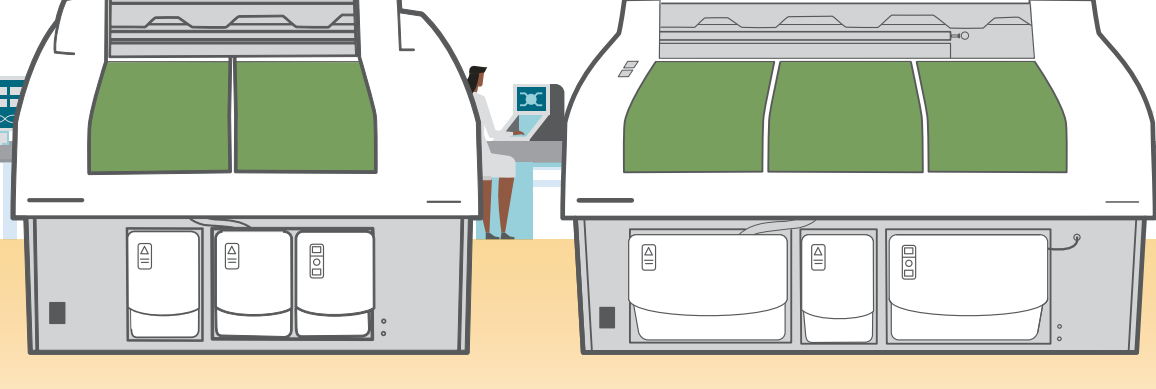
More efficient, accurate, and reliable analysis of soil, fertilizer, plant, and irrigation water (enables more frequent monitoring)

More insightful agronomic assessment and recommendations for soil amendment

Healthier plant, improved crop yield

Thermo Scientific™ Gallery™ and Gallery™ Plus Aqua Master Discrete Analyzers

are easy-to-operate automated systems created specifically for simultaneous multiparameter water and nutrient analyses, powered by specially designed software features to help customers meet local regulations, realize high-throughput automation, and achieve walkaway efficiency.



Analytical technique comparison

Features	Fully-automated agricultural testing method	Traditional FIA/SFA/CFA
Instrument type	Fully integrated discrete analyzer	Open and modular type
Required operator skills	Low	Advanced
Number of measuring channels	Freely selectable 12 filter positions (channels)	Maximum 4–6 channels—need 2 to 3 instruments to match channel capabilities
Sample sequence	Random access—parallel and batch: sample can be loaded for several tests while a calibration for another is being processed	Sequential sample and parameter testing
Cross contamination	Minimal—discrete, fully disposable reaction cells	Medium to high—impacts results reliability; requires intense maintenance to minimize carryover
Method stability	Very high—long calibration stability and reproducible results	Low—detector signal drifts; adjust data due to baseline drift throughout a batch run
Reagent delivery	Fully automated micro liquid handling; robust system	Peristaltic pump—requires frequent maintenance
Number of tests/hr	200–350	60–120
Number of chemical parameters/sample	Up to 20 different chemical parameters for a sample	Typically, from 2–5—limited by number of channels
Reagent consumption	Very low—typically <100 µL	Large—8–110 mL
Instrument startup time	<5 minutes	15–45 minutes
Change over time between chemistries	None	15–30 minutes

More information can be found [here](#).

Top 5 reasons to consider fully automated agricultural testing for soil, fertilizer, plant and irrigation water samples

Top 5 reasons

1 Confidence in results

- Fully-automated liquid handling, dilutions, calibration, QC, and spiking.
- Reduced manual handling, reduced preparation errors.
- Traceable results.
- No carryover.

5 Low training needs and maintenance

- Easy to operate by a single technician from any expertise level.
- New users can be easily trained in hours. Lab staff issues resolved.
- Low maintenance. Product family average <1 service visit per year.

2 Automation for walkaway efficiency

- Up to 20 parameters are tested simultaneously.
- Test workflows are highly automated for up to 350 tests per hour and 3 hours of walkaway time.
- Continuous access to samples, reagents, and cuvettes without interruption of routine workflows.

4 Open and flexible systems

- Easy to transfer existing SFA/FIA or spectrophotometric methods.
- Versatile software to program and adopt existing methods.
- Open to third party reagents or self-prepared reagents.

3 Improved productivity, reduced cost

- Automatic startup and shutdown protocols.
- Reduced sample and reagent volumes for lowest waste generation.
- A reduced cost per test (up to 20 times lower).

A perfect solution to the tedious, laborious, and maintenance-intensive operations of flow analyzers:

The high-throughput Gallery Aqua Master discrete analyzer offers a **turnkey solution for agricultural testing** to resolve pains and issues from SFA/FIA with a true walkaway efficiency.

If you often find yourself thinking, "I wish there were more hours in a day," **you will appreciate the up to three hours of walkaway time** that free you up to focus on other important tasks.

Common testing parameters in agricultural applications, soil, fertilizer, plant, and irrigation water samples with Gallery Aqua Master systems:

- Ammonia
- Boron*
- Calcium
- Chloride
- Cyanide*
- Fluoride
- Hexavalent chromium
- Magnesium
- Nitrate + Nitrite (TON) —(enzymatic, hydrazine, or vanadium reductions)
- Nitrite
- Orthophosphate
- Potassium
- Silica
- Sulfate
- Sulfide*
- Total hardness
- Total Iron
- Total Kjeldahl nitrogen (TKN)*
- Total phosphorous (TP)*
- pH & conductivity

*Third party reagent

Thermo Scientific Gallery Aqua Master and Gallery Plus Aqua Master discrete analyzers

They're what you've been asking for.

Learn more at thermofisher.com/AquaMaster

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