SmartChem® 800 Series

HIGH-THROUGHPUT AUTOMATED DISCRETE ANALYZER

ENHANCE EFFICIENCY AND FLEXIBILITY IN MODERN COMMERCIAL LABORATORIES



SmartChem® 800

SmartChem® 800 Series

HIGH-THROUGHPUT AUTOMATED DISCRETE ANALYZER FOR MODERN COMMERCIAL LABORATORIES

The SmartChem® 800 Series is KPM Analytics' next-generation high-throughput automated discrete analyzer, designed to meet the needs of modern commercial laboratories. Its unmatched capacity, extended autonomy, and true random-access capability support efficient, reliable operation throughout the day.

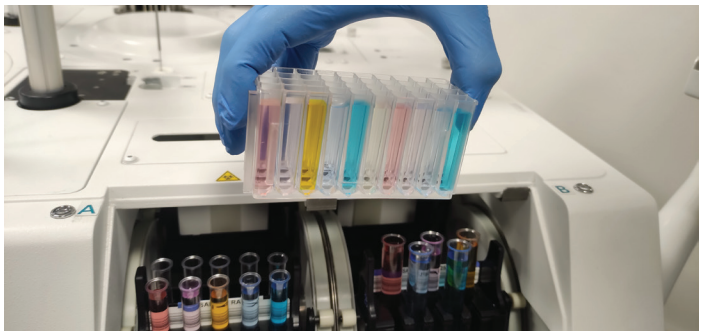
The SmartChem® 800 Series is designed for laboratories that need to:

- Process more samples with fewer staff
- Handle unpredictable daily workloads
- Meet strict turnaround times
- Reduce downtime and interruptions
- Improve operational efficiency without adding instruments



ENGINEERED FOR HIGH SAMPLE CAPACITY AND THROUGHPUT

- Up to 600 tests/hour
- Up to 800 samples per load
- Automatic reagent or sample cooling, model-dependent



Sample rack holders

LESS LABOR, MORE PRODUCTIVITY

- Designed so technicians can set up the full day's workload; simply press "Run," and the SmartChem® does the rest.
- Pre-schedule startup and shutdown to prepare the instrument outside the working hours
- Optional total 150L washing-solution tank capacity reduces the number of refills
- Includes fully automated workflows with tight LIMS connection via CLSI LIS02-A2 (ASTM E1394) communication protocol
- The SmartBeacon™ Visual Status indicator reveals running condition at a glance, without requiring operators to approach the instrument.



LOW COST OF OPERATION AND ENVIRONMENTAL IMPACT

Reusable cuvettes eliminate single-use plastic waste, and the washable 40-position sample tray allows for multiple use to help significantly reduce consumable cost. Microliter reaction volumes reduce reagent consumption and waste-handling costs.

True Random Access

TRUE RANDOM ACCESS

- Run any test, on any sample, at any time, without waiting for batches to finish.
- This flexibility lets laboratories prioritize urgent samples instantly, insert urgent requests mid-run, and adapt workflows on the fly. The result is faster turnaround time, reduced bottlenecks, and more efficient use of instrument capacity.

EXCELLENT ANALYTICAL PERFORMANCE

- Dual beam UV/Vis Spectrometer supports a broad range of chemistry methods.
- Methods used on thousands of SmartChem® instruments worldwide are fully compatible, ensuring easy method transfer across all SmartChem® platforms. Direct reading in reaction cuvette improves analytical precision, reducing transfer errors and simplifying the workflow.



WIDE APPLICATION RANGE

SmartChem® Series discrete analyzers are widely used across environmental, agricultural, food & beverage, and industrial laboratories to deliver fast, accurate, and fully automated wet-chemistry results. Designed for high-throughput testing, they support a broad range of enzymatic and colorimetric methods, from nutrients and metals to process-control chemistries, while minimizing labor and human error.

Industry/Sector	Applications	Examples
Environmental Testing	Drinking water, wastewater, surface water, groundwater monitoring	Ammonia (NH_3–N), Nitrate/Nitrite, Phosphate, Total Nitrogen (TN), Total Phosphorus (TP), Sulfate, Chloride, Fluoride, Silica
Agricultural & Soil Testing	Soil nutrient analysis, fertilizer QA/QC, agronomy services	Nitrate, Ammonium, Phosphorus, Potassium, Sulfate, Micronutrients (Fe, Mn, Zn, Cu, B)
Food & Beverage	Quality control, nutritional testing, process verification	Sugars, Organic acids, Ammonia, Protein assays, Preservatives (sorbic/benzoic acid), Colorimetric freshness indicators
Commercial & Industrial Labs	Chemical manufacturing QC, process monitoring, wastewater compliance	Additives, Reaction byproducts, Purity tests, Residual chemicals, Cooling/boiler chemistry





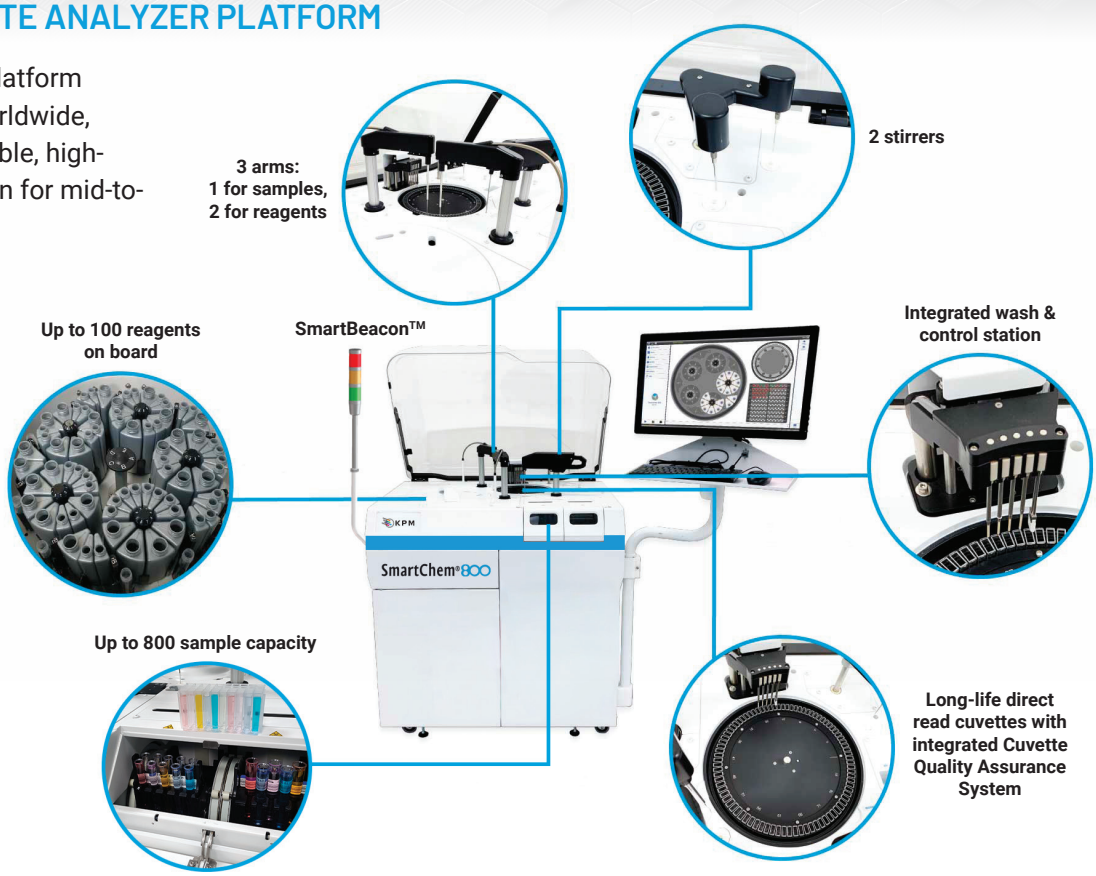


SmartChem® 800 Series

NEXT GENERATION DISCRETE ANALYZER PLATFORM

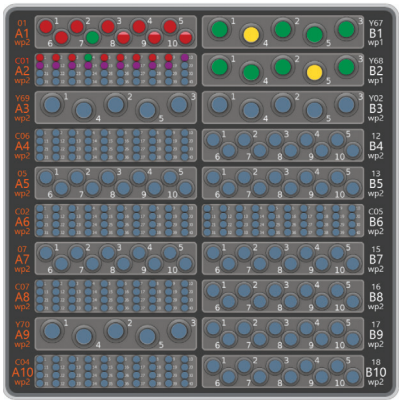
Built on the proven SmartChem® platform with thousands of installations worldwide, the SmartChem® 800 delivers reliable, high-performance, and precise operation for mid-to-high-volume labs.

- A high-capacity sample compartment
- Large reagent storage
- Cooling for both samples and reagents
- True random access
- High-precision microliter fluidic system
- SmartBeacon™ status indicator



COMPLETE WALK-AWAY OPERATION

The SmartChem® 800 Series is designed to maximize unattended run time with a fully customizable sampling setup.



Rack configuration

- The system supports a mix of rack/tray formats: 5-position sample rack for 10 mL tubes (up to 100 samples), 10-position rack for 5 mL tubes (up to 200 samples), and a 40-position sample tray for 3 mL vials (up to 800 samples)—allowing a full day's workload to be loaded at once.
- Optional external solution tanks (150 L total capacity) with integrated level sensors further reduce the need for refills.
- SmartBeacon™ visual indicator lets operators monitor instrument status from a distance, reducing the need for frequent checks.
- Automated, scheduled startup and shutdown procedures minimize daily preparation and cleaning.
- True random-access work plan execution supports flexible, user-driven workflows.

LOWER COST, LOWER WASTE

The SmartChem® 800 is engineered to reduce operating costs and environmental impact through efficient, sustainable design. Its reusable reaction cuvettes and compact 40-position sample tray significantly cut plastic and consumable waste compared to disposable systems. Meanwhile, the microliter-optimized fluidic handling and reaction system minimizes reagent and chemical usage, lowering per-test costs while supporting greener laboratory practices.



Washable 40-position sample tray



Reaction plate with reusable cuvettes

SAMPLE & REAGENT COOLING

Cooling options depend on the model, with reagent cooling or combined sample and reagent cooling available to ensure stability during long runs. Temperature-controlled storage preserves sample integrity and prevents degradation, while cooled reagents maintain consistent performance and extended on-board shelf life. Together, these features support reliable results during high-throughput, all-day operation and reduce waste from temperature-sensitive materials, improving both workflow efficiency and overall testing quality.

Three models are available with different cooling options:

SmartChem® 800	SmartChem® 810	SmartChem® 820
No cooling	Reagent cooling with internal cooling hardware	Sample and reagent cooling with an external chiller (included)

DUAL BEAM UV-VIS OPTICAL SYSTEM

The SmartChem® 800 Series features a refined optical architecture designed for long-term measurement stability and high-analytical accuracy. Its dual-beam spectrometer continuously compensates for lamp and optical drift, ensuring reliable results over long runs. Flexible wavelength selection, fully compatible with the extensive SmartChem® method library used worldwide, allows laboratories to apply established chemistries or develop new assays with optimal sensitivity and precision.



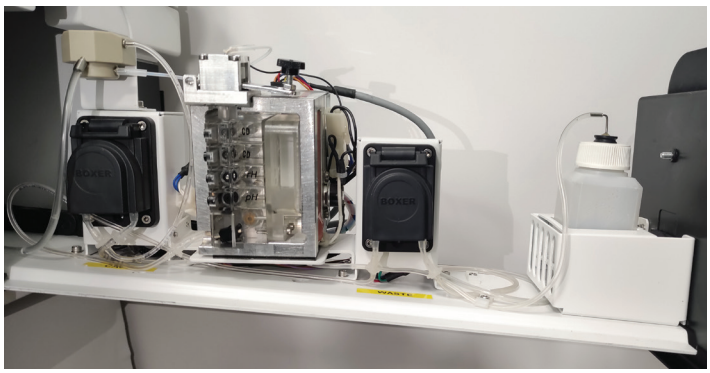
9 defaults + 7 optional wavelengths

EXTENDED ANALYTICAL MODULES

The platform also extends its core colorimetric capabilities with optional modules that broaden its analytical range. The electrochemical module enables accurate ion-selective and redox measurements, while the NO_3 reduction module uses a cadmium coil to efficiently convert nitrate to nitrite for precise downstream analysis. These integrated options allow laboratories to consolidate more methods onto a single platform, increasing versatility, reducing external sample preparation, and minimizing the need for additional specialized instruments.



Nitrate (NO_3^-) cadmium reduction module



Electrochemical module

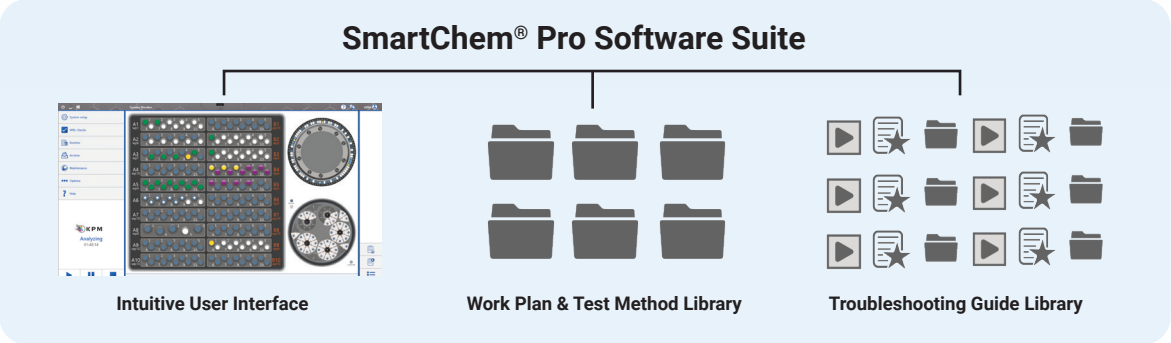
SmartChem® 800 Series

SMARTCHEM® PRO V5 – A NEW STANDARD FOR EASE OF USE IN AUTOMATED WET CHEMISTRY ANALYSIS

Designed for busy laboratories, the software combines an intuitive interface with powerful workflow automation to simplify every step—from instrument startup and QC management to method selection, calibration, and sample reporting. Clear visual guidance, automated checks, and streamlined navigation help users complete tasks quickly and confidently, regardless of experience level.

Built on years of field-proven SmartChem® expertise, SmartChem® Pro reduces training time, minimizes operator errors, and keeps laboratories running smoothly. The software integrates a large library of validated standard test methods, giving laboratories immediate access to proven chemistries while simplifying method setup and deployment. In addition, a built-in multimedia library provides guided tutorials, troubleshooting clips, and on-screen help resources. These tools further reduce errors, accelerate onboarding, and ensure consistent performance across shifts.

Whether managing high-volume daily workloads or handling urgent samples, users benefit from a clean, modern platform that makes advanced chemistry testing feel effortless.



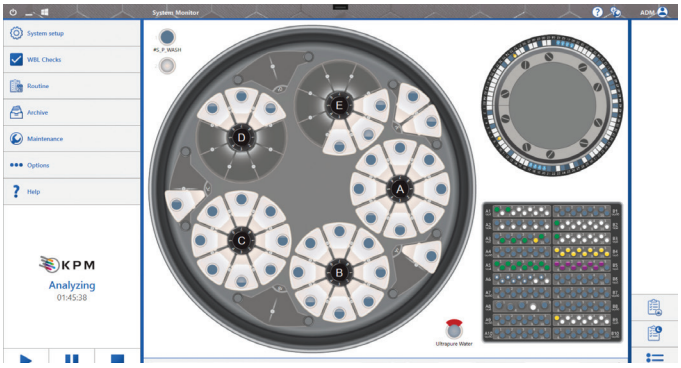
EASE OF USE DESIGNED FOR EVERY OPERATOR

- Clear navigation menu for quick access to all major functions.
- Graphical, intuitive setup screens that simplify method creation, calibration, and quality control.
- Prominent action buttons that streamline routine operations.
- Real-time status bars showing instrument readiness, reagent levels, and work plan progress.
- User-friendly interface that reduces training time and minimizes operator errors.
- Simple switching between Operator Mode and Admin Mode optimized for different use cases.

POWERFUL AUTOMATION FOR RELIABLE HANDS-OFF OPERATION

SmartChem® Pro offers powerful automation that reduces operator workload and keeps laboratories running efficiently.

- Scheduled and automated startup/shutdown to prepare the instrument and secure it at the end of the day with minimal operator intervention.
- Sophisticated workflow engine with advanced logic to automatically manage errors, exceptions, and conditional steps for uninterrupted operation.
- Full LIMS connectivity using the CLSI LIS02-A2 (ASTM E1394) communication protocol for seamless data exchange, result reporting, and bidirectional control.



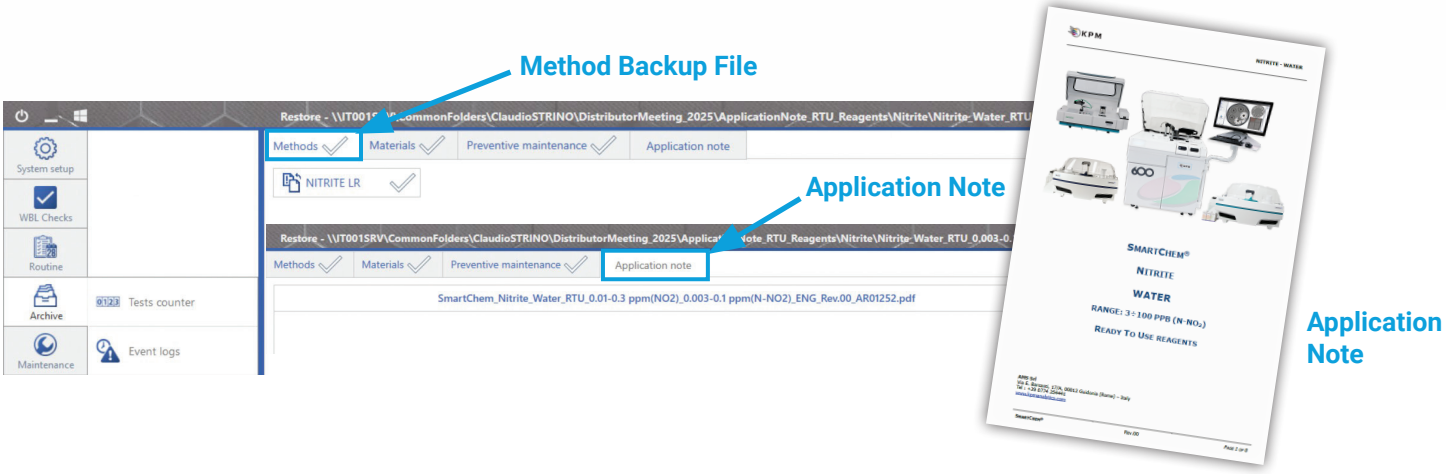
System monitor - Reagent plate

EXTENSIVE STANDARD TEST METHOD LIBRARY

SmartChem® Pro includes a comprehensive library of validated colorimetric test methods, giving laboratories immediate access to proven chemistries without the need for time-consuming development work. Each method is optimized for SmartChem® analyzers, ensuring consistent performance, accurate calibration, and reliable results across a wide range of sample types and matrices.

- Unified test-method file format compatible with SmartChem® 210, 450, 600, and 800 models for seamless cross-platform transfer
- Ideal for multi-instrument laboratories, reducing duplicate setup work and ensuring standardized workflows across all SmartChem analyzers
- Detailed application notes included with each method, providing chemistry background, workflow guidance, and analytical considerations

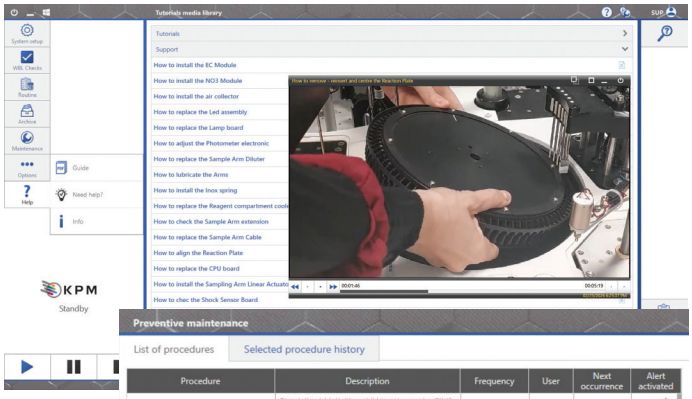




INTEGRATED MULTIMEDIA TROUBLESHOOTING & USER GUIDE LIBRARY

SmartChem® Pro includes an integrated multimedia library designed to support operators in daily use, maintenance, and troubleshooting.

- Step-by-step video tutorials covering routine operations, maintenance, and setup.
- Visual troubleshooting guides to help users quickly diagnose and resolve issues.
- Interactive on-screen help available directly within each workflow.
- Context-aware organization for fast access to relevant instructions.
- Reduces operator errors and shortens training and onboarding time.
- Improves uptime by enabling operators to resolve issues without external support.



Tutorial videos within the "Need Help" menu (above) and preventive maintenance (below).

ORDERING INFORMATION

The SmartChem® 800 Series consists of automated discrete chemistry analyzers using technical polymer cuvettes. All models are equipped with internal washing solution tanks (35 L), a sample bar code scanner, a touch-screen PC with Windows® license and SmartChem® software and provide 9 fixed wavelengths (340–880 nm). Additional features depend on the model and are detailed in the "Options & Accessories" table below.

MODELS

Part Number	Description
20-06059-00	SmartChem® 800 Automatic Discrete Analyzer
20-06059-10	SmartChem® 810 Automatic Discrete Analyzer with reagent cooling
20-06059-20	SmartChem® 820 Automatic Discrete Analyzer with reagent and sample cooling

OPTIONS & ACCESSORIES

Part number	Description
65-06027-00	External washing-solution tanks - 150 L
05-04009-00	Reagent Bar Code Reader
05-06061-00	SmartBeacon™ Status Indicator
15-05107-00	Electrochemical Module for pH, conductivity, and redox.
15-05108-00	Module for determining NO_3 by cadmium reduction
65-03163-03	Extended filters (7) set



Ready-to-use enzymatic and colorimetric reagents for all SmartChem® analyzers, validated for high stability and reproducibility, supplied in compatible bottles for easy preparation and storage

SPECIFICATIONS

	SmartChem® 800 Series
Dimensions (W x D x H) Instruments Only	960 mm x 700 mm x 1200 mm (38.7 in x 27.6 in x 47.2 in)
Weight	115 kg (254 lbs)
Input Power	Voltage: 100-230VAC, 47-63Hz - Power: 430 Watts
Software	SmartChem® Pro V5
Operation System	MS Windows® 11
Throughput	Up to 600 tests/hour
Optical System	Dual beam UV/Vis Photometer, 9 wavelengths
Sample Capacity	100 (10 ml) / 200 (5 ml) / 800 (3 ml)
Sample Bar Code Reader	Internal (included)
Sampling System	3 mechanical arms
Reagents Capacity	Up to 100 positions
Reagent Bottle Size	50 / 25 ml
Reagent Bar Code Reader	Optional
Sample Cooling	SmartChem® 820 only
Reagent Cooling	SmartChem® 810 and 820 only
Reaction Plate	85 cuvette positions
Cuvette Material	Technical polymer
Cuvette Type	Reusable
In Cuvette Dilution	Yes
Wash Cannulas	4 + Drying
Rinse Solution Tanks	Internal 35 L total (default) optional: external tanks 150 L total

KPM Analytics
Via E. Barsanti 17/a 00012 Guidonia Monteceilo RM Italy
Phone: +39 0774 354441
www.kpmanalytics.com | sales@kpmanalytics.com

Protected by KPM Care
kpmanalytics.com/KPMCare

©Copyright 2026. All rights reserved. 02.005.0554.EN.v2