



SMARTCHEM 450

FULLY AUTOMATED HIGH
TECHNOLOGY DISCRETE ANALYZER





PRODUCTIVITY & EFFICIENCY

The Smartchem 450 is the result of AMS Alliance know-how, manufacturer of analytical instruments with over 35 years' experience. It is the most recent analyzer among a full range of laboratory instruments, and it has been designed to meet the needs of high productivity while reducing the overall cost of analysis and providing accurate, safe, rapid and standardized results.

Thanks to its loading capacity (100 samples, 72 reagents) and its capacity of 450 tests/hour, the Smartchem 450 is the right solution for all laboratories with its incomparable efficiency.

Barcode readers, ready to use reagents with unique inventory management, connectivity ... everything has been designed to optimize both the performance and the autonomy of the Smartchem 450, which will reduce the preparation time of your analyses.

The discrete technology flexibility, powered by AMS Alliance, allows to safely combine the analyses and the parameters in all kind of matrix.

The Smartchem 450 will be able to handle all your obligations for maximum efficiency.

PRODUCTIVITY FOR ALL LABORATORIES

- RECORD CAPACITY OF 100 SAMPLES
- CONTINUOUS LOADING
- UNLIMITED METHODS
- HIGH THROUGHPUT UP TO 450 TESTS PER HOUR
- AUTOMATIC STARTUP AND CALIBRATION ROUTINE
- REPEAT & REFLEX TESTS
- BARCODE READING
- BI-DIRECTIONAL LIMS READY
- REAGENT INVENTORY MANAGEMENT



The Smartchem 450 is a fully automated discrete analyzer that provides one of the best returns over investment on the market, reduces the time of analysis as well as the risk of errors. The analyses are optimized, simplified and accelerated by the use of dedicated ready to use reagents available for most of the parameters.

It uses a proven concept of washable and reusable cuvettes, whose integrity is guaranteed by an integrated wash and control station before and after every analysis.

Furthermore, the device has been designed in accordance with a Green technology, which aims to reduce firstly the amount of water and reagents used, and secondly the volume of waste to be reprocessed.

Finally its compact dimensions enable to minimize the floor area occupied, which will help to decrease your operating costs.

These innovations, coupled with its high speeds, decreases the running costs of the analyzer and the unit cost of the analyses, responding accurately to the needs of laboratories..

COST EFFECTIVE

LOWER RUNNING COSTS

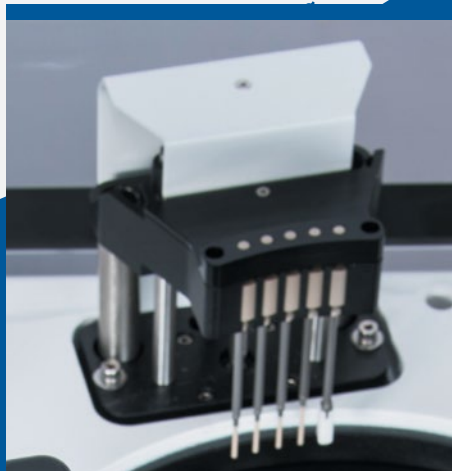
- ANALYTICAL THROUGHPUT UP TO 450 TESTS/HOUR
- LONG-LIFE CUVETTES WITH INTEGRATED CUVETTE QUALITY ASSURANCE SYSTEM
- INTEGRATED WASH & CONTROL STATION
- REDUCED REAGENTS VOLUME
- REDUCED WASTE VOLUME
- LOW POWER AND WATER CONSUMPTION
- YOUR ANALYSES FOR A FEW CENTS PER TEST

100% AUTOMATED INSTRUMENT FOR ROUTINE AND PRECISION ANALYSES

Up to 72 reagents on board



Long-life direct read cuvettes with integrated Cuvette Quality Assurance System



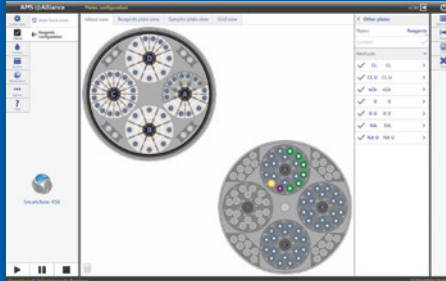
Integrated wash & control station



Nitrate module or ISE module for pH, conductivity & redox analysis (options)

NEW USER-FRIENDLY SOFTWARE

High capacity up to 100 samples with continuous loading

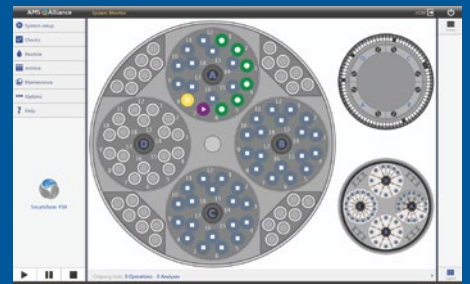


The Smartchem 450 uses a new user-friendly operating software that drives all the operations with its intuitive access concept compatible with a touch screen. You have the possibility to have a wireless control of the device thanks to a touch screen

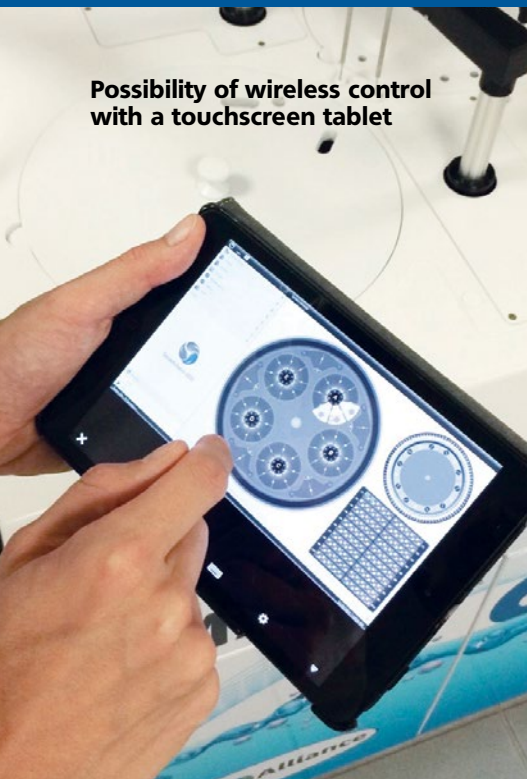
tablet or, remotely, through a web interface. Many settings (such as pre-cleaning of the cuvettes, calibrations...) can be programmed in advance in order to optimize the machine-operators' time.

The new software enables and records where every reaction takes place so that the individual test values of a sample can be accurately identified in the incubator. This is particularly relevant in certain analytes known to cause issues in other systems incubators. This enables the operator to rapidly audit and identify any potential anomalies and react swiftly in real-time to provide corrective action.

Another unique development of the Smartchem 450 is over range dilutions, these are carried out in sequence and not left until the end of the run, which in the case of systems which leave then until the end of the run can often interfere with reporting sequencing.



Possibility of wireless control with a touchscreen tablet



TOTAL FLEXIBILITY

- AUTOMATIC START-UP (INCLUDING CALIBRATION)
- 100 SAMPLES VISIBLE AT A GLANCE
- REPEAT & REFLEX FUNCTIONS
- BARCODE READING FOR SAMPLES & REAGENTS
- ADDITION OF NEW SAMPLE OR METHOD TO A SAMPLE DURING THE RUN
- STAT SAMPLES
- COMPARISON OF CALIBRATION CURVES WITH PREVIOUS CURVES



BETTER RESULTS

The Smartchem 450 is the most flexible analyzer of the market, adapted to all laboratories capacities. It uses the latest innovations of discrete technology in order to offer more flexibility, more precision, more simplicity, more rapidity, and finally, better results.

The development and introduction of capped sample tubes* minimizes the risk of Ammonia cross contamination as well as reducing evaporation. Capping also reduces the effects of aerial factors that interfere with parameters such as pH and conductivity. Together with the incubator design tests have shown this to be a major advantage over existing technologies.

Our technical support and our application laboratory assist and advice you over the methods to use, and provide the maintenance of your device worldwide in order to permanently ensure its top performances.

*On development

FLEXIBILITY & PERFORMANCE



- 6 OR 10MM OPTICAL PATH FOR INCREASE ACCURACY
- CAPPED TUBES FOR THE ANALYSIS OF SENSITIVE SAMPLES / PARAMETERS*
- AUTOMATED CLEANING OF CUVETTES TO AVOID ANY RISK OF CROSS CONTAMINATION
- FULLY AUTOMATED OPERATION
- READY-TO-USE REAGENTS WITH BAR CODE FOR BETTER TRACEABILITY
- TECHNICAL SUPPORT AND APPLICATION LABORATORY AT YOUR DISPOSAL

MAIN PARAMETERS

Main analyzed parameters

(Do not hesitate to consult us if you can't find your parameter in the following list)

Surface, ground, drinking, waste and sea waters

Alkalinity	Cyanide	Nitrate	Sulfate
Ammonia	Fluoride	Nitrite	Total Kjeldahl Nitrogen
Chloride	Hardness	Phenol	Total Kjeldahl Phosphorous
Chlorine	Iron	Phosphate	Turbidity
Chromium	Manganese	Silicate	Urea

Soils & Plants

Ammonia	Chloride	Nitrate	Total Nitrogen
Boron	Lysine	Nitrite	Total Phosphorous
Calcium	Magnesium	Phosphate	Urea

Feed & Fertilizers

Ammonia	Chloride	Protein	Total Phosphorous
Calcium	Phosphate	Total Nitrogen	Urea

Some parameters require an external pre-treatment of the sample.

READY-TO-USE REAGENTS

- FAST
- PRACTICAL
- ECONOMICAL
- READY-TO-USE

We have created **SELECTION**, a full range of enzymatic and colorimetric reagents dedicated to our Smartchem range of discrete analyzers. Developed, tested and validated by our application laboratory, they will guarantee a perfect stability and reproducibility of your analyses. Very easy to use, they are supplied liquid, in specific bottles specifically made for Smartchem, and automatically detected by the barcode reader (optional). Thus, this ready solution greatly simplifies the preparation of your analysis and facilitates the use and storage of reagents. It also secures your analyses with reagents adapted to your application and your instrument. A unique reagent inventory management is proposed when using our ready to use reagents.

Selection AQUA

Alkalinity (MO)	Hardness
Alkalinity (BPB)	Nitrate
Ammonia	Nitrite
Chromium VI	Phosphates
Chlorides	Silicate
Fluoride	Sulfates

ALL OUR REAGENTS ARE AVAILABLE ON OUR WEBSHOP
www.webshop.amsalliance.com/en

TECHNICAL SPECIFICATIONS

DESCRIPTION	Fully automated, direct read, bench top, Discrete analyzer	
ASSAY TYPE	End Point, Kinetic, Differential, Bi chromatic assays, fully programmable	
ON-BOARD REAGENTS	Up to 72 reagents can be loaded into the refrigerated compartment and distributed on: - 4 removable racks with 16 positions each (25 ml containers) - 8 extra position for 25 ml containers 10/20 ml containers can be adapted	
SAMPLES LOADING	- 4 universal, separate racks for continuous loading of samples, calibrators and controls - Each rack contains up to 18 samples (4-7-10 ml) - 28 extra positions for urgent samples, calibrators and controls - Tubes size: 12,5-13,3 mm diameter and 50-75-100 mm height	
URGENT SAMPLE ANALYSIS	Allowed at any time	
THROUGHPUT	Up to 450 tests/hour (including 120 for ISE test)	
READING SYSTEM	Direct photometry	
MINIMUM REACTION VOLUME	300 µl	
OPTICS SYSTEM	Photometer	multi - wavelength optics, double beam
	Wavelength	12 wavelengths available with 9 on board
	Source	halogen lamp 6V/10W
	Optical Path	6 or 10 mm
	Linear range	0.001 - 4.200 Abs
	Resolution	0.0001 Abs
SAMPLING SYSTEM	One mechanic arm provides all sampling operation with : - Capacitive liquid level sensing - Reagent pre-warming at 37°C - Automatic probe washing - Sample Volume range : 2.0 µl- 300 µl (1µl incr.) - Reagent Volume : 5.0 µl-300 µl (1µl incr.) - Sample pre-dilution - Sample rerun with or without dilution	
DILUTOR	Automatic dilution in pre and post-dilution	
REACTION PLATE	Holds 80 cuvettes which perform the following operations: - Automatic cuvette washing - Continuous monitoring of cuvette quality - Incubation temperature: 37°C +/- 0,2	
DIMENSIONS	50 x 70 x 105 cm (H x W x L)	
WEIGHT	48 Kg	
OPTIONAL ACCESSORIES	- ISE module for pH, conductivity & Redox - Nitrate module	- Barcode reader for reagents - Barcode reader for samples
COMPLEMENTARY PRODUCTS	<p>Ready to use reagents</p> 	



www.amsalliance.com



AMS France
10 avenue Charles de Gaulle
95740 Frepillon
FRANCE

Tel. : (+33) 134 18 71 10
Fax : (+33) 139 60 72 39
E-mail: info.fr@amsalliance.com