



# SMARTCHEM 600

THE NEW GENERATION  
DISCRETE ANALYZER



# SMARTCHEM 600

FULLY AUTOMATED, DIRECT READ, DISCRETE ANALYZER TO MAXIMIZE PRODUCTIVITY FOR ROUTINE AND SPECIAL CHEMISTRIES, UP TO **600 TESTS/HOUR**



AFTER HAVING SUCCESSFULLY INTRODUCED A COMPLETE RANGE OF DISCRETE ANALYZERS IN LABORATORIES, THE SMARTCHEM RANGE (OVER 7000 DISCRETE SYSTEMS INSTALLED WORLDWIDE), WE HAVE DEVELOPED THE SMARTCHEM 600 WHICH PROVIDES YOU:

1. MORE PRODUCTIVITY
2. LOWER RUNNING COSTS
3. BETTER RESULTS

The Smartchem 600 combines the latest technology in discrete analysis with an innovative and unique design that guarantees accurate and reproducible results.

The Smartchem range is the first discrete analyzers to utilize washable cuvettes with an integrated wash and control station, which guarantee a lower running cost and reduced risk of contamination. In addition to automated analysis the Smartchem 600 offers automated system Quality Control.

The Smartchem range is also the first discrete analyzers to utilize a patented, dedicated sample prep module for the determination of NOx by Cadmium reduction. Designed for multi-tasking and high throughput rates, the NOx module also provides automated cadmium regeneration. The instrument provides also a pH, Conductivity and Redox module.

Fully automated, the Smartchem 600 is available with new user-friendly software designed for touch screen computer with the possibility of wireless control.

Ease of use combined with minimal operating condition requirements make the Smartchem 600 the right choice for every cost-efficiency laboratory.

## MAIN ADVANTAGES

- 600 tests per Hour
- 200 samples capacity
- Automatic startup and calibration routine
- Unlimited number of unattended tests
- Barcode reading
- No disposable cuvette
- Integrated wash & control station
- Caped tubes
- New software with touch screen
- Bi-directional LIMS ready

## MORE SIMPLICITY FOR BETTER RESULTS

The Smartchem 600 utilizes direct read photometry utilizing a true discrete, direct read measurement system.

- Fully automated operation, just load the Samples and start
- 6 mm or 10 mm Optical Path for increase accuracy
- Complete range of reagents and methods

## MORE PRODUCTIVITY

- 200 Samples capacity (2 carousels with 10 racks)
- Continuous loading
- STAT sample
- Barcode reading for samples & reagents
- Repeat & Reflex tests
- Up to 100 reagents on board

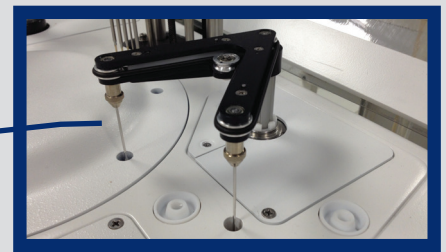
## LOWER RUNNING COST

- Limited space occupancy
- Use of washable cuvettes
- Reduced hazardous waste management cost
- Reduced volume of waste
- Low energy & Water consumption
- Green technology

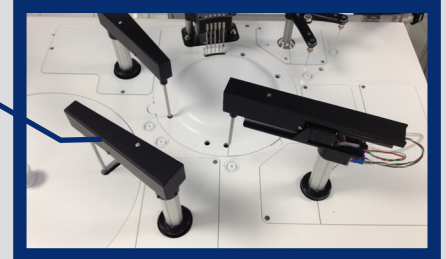


## ISE module for pH, conductivity & redox analysis

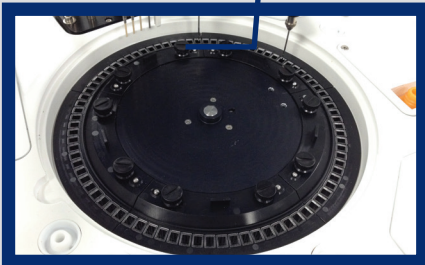
## Integrated wash station



2 stirrers



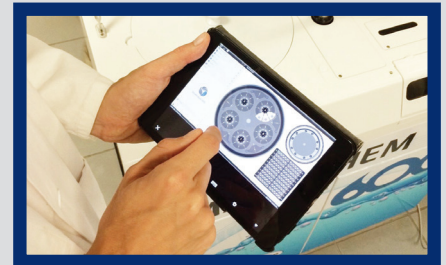
3 arms, one for samples, two for reagents



Long-life cuvettes with integrated Cuvette Quality Assurance System

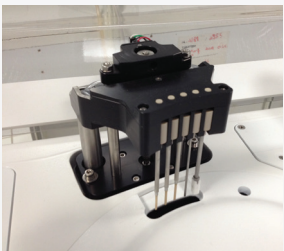


Sample capacity 200, with continuous loading



Enabling use of tablet to monitor your analyzer

## CUVETTE QUALITY ASSURANCE SYSTEM: LESS RISK OF CROSS CONTAMINATION



- Automated cleaning eliminates carryover in the cuvette
- We clean, rinse, dry and verify optically each cuvette before and after each single test
- Provides an infinite number of reaction vessels for analysis
- Economical: long lasting cuvettes

## CAPPED TUBES



With the new capped tubes, you can run any type of samples without any problems.

- You can load low and high concentrated samples on the same rack without any risk
- The caps will prevent evaporation and contamination.

## OPTIONAL MODULES

Multiple techniques are available to answer all environmental application and include electrochemical parameters:

- ISE module for pH, conductivity and redox analysis
- NO<sub>3</sub> module with new reductor

## NEW USER-FRIENDLY SOFTWARE WITH INTERFACE DESIGNED FOR TOUCH SCREEN COMPUTER

The Smartchem 600 use a new user-friendly operating software with intuitive access concept and touch screen approach. Extremely flexible, it is designed for either keyboard or touchscreen. It can be used with remote assistance service.

## NEW SOFTWARE MAIN FEATURES

- Automatic start-up
- Automatic shutdown
- Barcode for reagents
- Barcode for samples
- Addition of new sample or method to a sample during the run
- Reanalyse key
- Reflex testing
- Accurate estimation of completion of analysis
- Calibration points recalculation
- Last accepted calibration overlay
- Pre-dilution
- Standard curves
- Ready to read 2D barcoding in reagents kits
- Computer controlled micro pipettor
- EPA Nilac compliant

# MAIN PARAMETERS

## Surface, ground, drinking, waste and sea water

- Acidity
- Alkalinity\*
- Aluminum
- Ammonia\*
- Chemical Oxygen Demand (COD)\*
- Chloride\*
- Chlorine
- Chromium\*
- Cyanide\*
- Fluoride\*
- Hardness\*
- Iron
- Manganese
- Nitrate\*
- Nitrite\*
- Phenol\*
- Phosphate\*
- Phosphorous\*
- Silicate\*
- Sulfate\*
- Total Kjeldahl Nitrogen\*
- Total Kjeldahl
- Urea

\* According to EPA, ISO approved Methods

## Wine

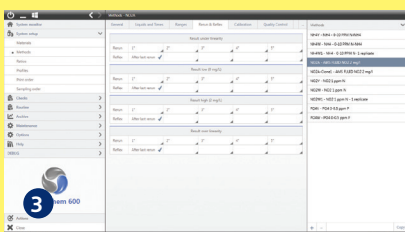
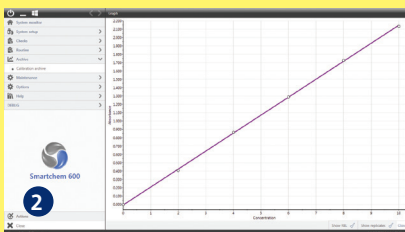
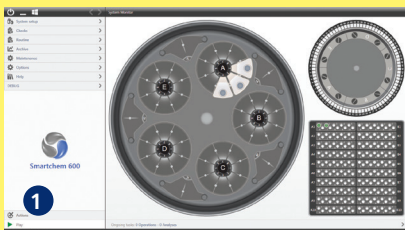
- Acetic acid
- Ammonia
- Ascorbic Acid
- Cupper
- Ethanol (TVA)
- Free SO<sub>2</sub>
- Fructose
- Gluconic acid
- Glucose
- Iron
- Malic acid
- OD 420, OD 520, OD 620
- PANOPA
- pH
- Sorbic Acid
- Sucrose
- Tarttric acid
- Total acidity
- Total SO<sub>2</sub>

## Soils & Plants

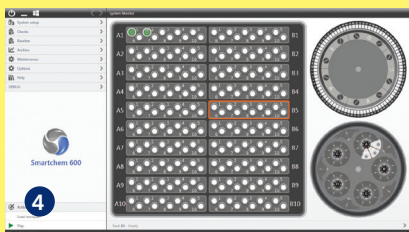
- Ammonia
- Boron
- Calcium
- Chloride
- Lysine
- Magnesium
- Nitrate
- Nitrite
- Phosphate
- Total Nitrogen
- Total Phosphorous
- Urea

## Feeds & Fertilizers

- Ammonia
- Calcium
- Chloride
- Phosphate
- Protein
- Total Nitrogen
- Total Phosphorous
- Urea



- 1 Up to 100 reagents
- 2 Multipoint calibration, Last calibration, Compare & overwrite
- 3 Rerun & Reflex tests, Automatic spiking recovery calculation
- 4 200 samples at a glance
- 5 touch screen computer



# READY TO USE REAGENTS

- Developed specifically for the SMARTCHEM analyzers
- A full range of reagents for Environmental and Wine analysis
- Complete range adapted to all parameters

- Save time
- Save money
- Simple
- Ready to use



**We have created Selection**, a full range of enzymatic and colorimetric reagents dedicated to discrete analyzers Smartchem. 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 directly positionable on Smartchem, and automatically detected by the bar code reader (in option). Thus, this ready solution

greatly simplifies the preparation of your analysis, facilitates the use and storage of reagents. It also secures yours analyzes with reagents adapted to your application and your instrument.

REAGENTS FOR ENVIRONMENTAL ANALYSIS	REAGENTS FOR WINE ANALYSIS
<b>Selection</b> AQUA	<b>Selection</b> OENO
Alkalinity Ammonia Chromium VI Chlorides Cyanides Nitrate Nitrite Phosphates Silicate Sulfates Phenol index Total Kjeldahl Nitrogen Total Phosphorous	Acetic, Citric, Gluconic, Lactic, Malic and Tartric Acid Alpha Amino Nitrogen Ammonia Anthocyanin Arginine Copper Fructose Free SO2 Glucose Glycerol Iron Polyphenols Total Acidity Total SO2 Urea

*Other parameters on demand.  
 Kits supplied in liquid format in vials adapted to your Smartchem.  
 1 to 3 reagents necessary according the parameter.*

## THE AMS ALLIANCE DISCRETE ANALYZERS RANGE



**Smartchem 140**  
Up to 140 tests/hour



**Smartchem 300**  
Up to 300 tests/hour



**Smartchem 170**  
Up to 170 tests/hour



**Smartchem 600**  
Up to 600 tests/hour



**Smartchem 200**  
Up to 200 tests/hour



# TECHNICAL SPECIFICATIONS

DESCRIPTION	Fully automated, direct read, floor stand, random access, Discrete analyzer	
ASSAY TYPE	End Point, Kinetic, Differential, Bi chromatic assays up to 999 tests, fully programmable	
ON-BOARD REAGENTS	Up to 100 reagents can be loaded into the refrigerated compartment and distributed on: - 5 removable racks (8 main positions) + 5 satellites - 100/50/25/5 ml containers - Reagents barcode reading (option)	
SAMPLES LOADING	- Up to 200 samples on board - 2 independent carousels hosting 20 racks of 10 positions each, for continuous sample loading - Cups and/or tubes of 10-13 mm (max height 100 mm) - Sample tube caps for sensitive application - Samples barcode reading (option)	
URGENT SAMPLE ANALYSIS	allowed at any time	
THROUGHPUT	Up to 600 tests/hour including ISE (pH, conductivity, redox)	
READING SYSTEM	Direct photometry	
MINIMUM REACTION VOLUME	180 µl	
OPTICS SYSTEM	<b>Photometer</b>	direct reading with Reference channel
	<b>Wavelength</b>	12 available wavelengths from 340 nm to 880 nm
	<b>Optical Path</b>	6 or 10 mm
	<b>Linear range</b>	0.001 - 4.200 Abs
SAMPLING SYSTEM	<ul style="list-style-type: none"> <li>- 3 sampling arms</li> <li>- 3 Shock sensors</li> <li>- 1 blockage sensor</li> <li>- 3 Capacitive liquid level sensors</li> <li>- 2 positions for stirrer/mixer</li> <li>- Automatic probe washing</li> <li>- Sample rerun with or without dilution</li> <li>- Limited water consumption (less than 7 liters/hour)</li> </ul>	
DILUTOR	Automatic dilution in pre and post-dilution	
REACTION PLATE	<ul style="list-style-type: none"> <li>- 85 cuvettes divided into 5 racks</li> <li>- Automatic cuvette washing</li> <li>- Continuous monitoring of cuvette quality</li> <li>- Incubation temperature control at 37°C +/- 0,3</li> <li>- Separate waste lines to minimize hazard disposable management</li> <li>- Use of washable cuvettes (Green technology)</li> </ul>	
DIMENSIONS	96 x 70 x 120 cm (W x D x H)	
WEIGHT	115 Kg	
OPTIONAL ACCESSORIES	<ul style="list-style-type: none"> <li>- ISE module for pH, conductivity &amp; Redox</li> <li>- Nitrate module with new reductor</li> </ul>	<ul style="list-style-type: none"> <li>- Barcode reader for reagents</li> <li>- Barcode reader for samples</li> </ul>
COMPLEMENTARY PRODUCTS	Digestion system: Easy digest      Distillation system: Easy Dist      Ready to use reagents	
		



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