

Analizor discret pentru determinarea parametrilor apei

Robotic automated discrete wet chemistry analyzer specialized for aqueous samples: natural waters

General:

- Minimum capacity: 250 tests per hour;
- The analyzer must be capable of continuous, unattended operation for at least 8 hours without requiring any operator intervention;
- The analyzer must be able to manage all generated chemical waste, separating hazardous chemical waste from non-hazardous waste;
- It must not generate potentially polluting single-use plastic consumables, such as contaminated disposable measuring cuvettes;
- Equipped with a PC with Windows license and software;
- Set of prepared reagents sufficient for more than 6 months of operation.

Samples and reagent compartments:

- Reagent storage capacity of not less than 32×50 mL positions (each capable of holding reagents for at least 500 tests);
- Sample storage capacity of not less than 60 sample positions of 10 mL, arranged in independent racks, allowing—via continuous loading—the processing of up to 180 samples per analytical batch.

Dispensing arm:

- Programmable dispensing volume from 2–200 μ L (1 μ L resolution);
- High-precision dosing pipette (max. error 2%);
- Automatic dispensing needle with internal and external washing;
- Integrated liquid level sensor for both samples and reagents;
- Visual and audible warnings for low reagent or sample levels;
- Programmable sample dilution up to 100 times the measuring range;
- Possibility to implement sample testing via automated additions.

Reaction and incubation area:

- The incubator must have not less than 60 positions for simultaneous reaction development and measurement;
- Reusable measurement cells (cuvettes) with an integrated washing module; the analyzer shall not use cuvettes as consumables. After the measurement step, cuvettes are washed by the integrated washing module and reassigned to a new test according to the defined work plan and program;
- Dispensing, mixing, and measurement must take place in the same cuvette;
- Capability to run individual samples and method blanks, plus reagent blanks for each defined analytical method;
- Cuvette optical path length: 10 mm;
- Thermostated incubation tray. Temperature range: programmable between 30 and 45 °C (± 1 °C).

Optics:

- Dual-beam spectrophotometer, enabling high sensitivity and minimal noise;
- Optical filter wheel with 9 positions and automatic position selection;
- Measurement range: 340–880 nm or wider;
- Linear measurement range: 0.0001–2.5 AUFS or wider;
- Minimum resolution: 0.0001 AUFS.

Continuous-operation washing station:

- Continuous and automatic washing of reaction and measurement cells;
- The instrument must be capable of defining an optical check for each cuvette at all loaded wavelengths, upon operator request, either before starting the testing routine or at instrument start-up;
- The instrument must have a reduced footprint due to the absence of potentially contaminated single-use plastic materials in the form of disposable cuvettes.

Analytical Module

• The instrument shall include an automated Cd based reduction module for TON (Total Organic Nitrogen) and NO₃ (Nitrate) determination. This module will be fully built into the analyser and shall not require any manual operation for testing routine in terms of sample reduction steps.

Software and operating manuals:

- Windows-based software (compatible with any version of the Windows operating system);
- Capable of bidirectional operation with LIMS;
- Integrated maintenance, start-up, and shutdown routines with programmable scheduling;
- Built-in QC (Quality Control).

The Robotic automated discrete wet chemistry analyzer specialized for aqueous samples (natural waters) shall be supplied with a complete set of ready-to-use reagents sufficient for at least six (6) months of routine operation. Additionally, the supplier shall provide not less than 2 liters of all auxiliary solutions required for proper instrument functioning, including washing solutions for the system, cuvettes, and fluidic circuits.

Standards and services:

- ISO 9001 certificate for the manufacturer;
- ISO 9001 certificate for the participant;
- CE certificate for the device;
- Manufacturer authorization;
- Warranty: minimum 24 months.
- Availability of manufacturer-authorized technical support personnel with the possibility of post-warranty service: maintenance services, consumables, and spare parts.
- On-site staff training.
- Operating manual in Romanian.

