



WIZ probe

PORTABLE IN-SITU PROBE FOR WATER ANALYSIS

<p>Technical data</p> <p>Measured parameters: 4 Standard: NH₃, NO₃+NO₂, NO₂, PO₄</p> <p>Detectors:</p> <ul style="list-style-type: none"> multi-beam fiber optic colorimeter with silicon detector Fluorimetric: excitation 370 nm, emission 420 ÷ 470 nm, 1 cm <p>Type of analysis: sequential batch</p> <p>Analysis interval: programmable</p> <p>Measuring time: 30 minutes for a full four parameters cycle</p> <p>Number of parameters: up to 4</p> <p>Maximum in-situ depth: -10 m</p> <p>Body material: PVC</p> <p>Operating temperature: 4°-40 °C</p> <p>Hydraulic connections: std. 1.0 mm I.D.</p> <p>Waste: directly discharged in water; toxic waste bag available outside the reagents compartment.</p> <p>Reagent expiring: min. 4-10 weeks depending on the method</p> <p>Reagent cooling: by surrounding water.</p> <p>Autonomy: up to two months, depending on measurement interval time</p> <p>Hardware: industrial PC-104 CPU, externally programmable by serial communication port.</p> <p>Data output : RS232 serial port</p>	<p>Programming functions: provided by the external WIZ control panel software.</p> <p>External connections: 6-pole submergible cable for serial data communication and 12 Vdc power supply.</p> <p>Power supply: 12 Vdc, provided through the main connecting cable.</p> <p>Power absorption: 3W in stand by, 6W during analysis (average), max. 1 A</p> <p>Weight in air: 8 Kg, without reagents</p> <p>Dimensions: 140 mm diameter x 520 mm height (analytical unit); 70 mm diameter x 200 mm height (reagents container)</p> <p>Environmental requirements: The probe should be operated with ambient temperature ranging from 4 °C to 40 °C. A temperature near 0 °C freezes the reagents and the calibrant; a temperature over 35 °C will reduce the reagents stability and life.</p> <p>Standard package includes:</p> <ul style="list-style-type: none"> - analytical and electronic unit - reagents container, including reagents flexible bags - 12 Vdc power supply - 5 m submergible cable - Wiz control panel software license - start-up kit. <p>Optional accessories:</p> <ul style="list-style-type: none"> - Extra reagent container - Additional cable length - External battery pack with carrying case - Flight case - Disposable filtration cartridges.
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WIZ probe is the state of the art portable “in-situ” probe, to measure automatically up to four chemical compounds in surface and sea water.

The innovative design allows an easy handling and field deployment by a single user.

WIZ probe allows, in the standard configuration, the detection at trace levels of the main four nutrients compounds:

- **ammonia** (N-NH₃)
- **orthophosphate** (P-PO₄)
- **nitrate + nitrite** N-(NO₃+NO₂)
- **nitrite** (N-NO₂).

WIZ probe automatically manages the well known spectrophotometric wet chemistries and an advanced fluorimetric method for ammonia measurement.

Many other analytical methods are available on request, including **silicates**, iron and other **metals**.

WIZ Pro is the most advanced analytical probe for field applications:

- the 1.5 ml **micro Loop Flow Reactor** (μLFR*) enables an extremely low consumption of reagents and calibrants
- the exclusive multibeam compact, optic fibers based, colorimetric detector, coupled with a state of the art fluorimeter
- the new compact cylindrical design allows the deployment as any conventional water quality monitoring probes available in the market
- the new innovative “plug-in” and compact reagents container allows an immediate field reagents and calibration solutions changeover.

Results are directly provided in concentration units; all measured values are stored with date, time and sample O.D.; the same data are remotely available through a serial communication port, which allows the complete probe configuration and remote control using the external Windows® based Wiz Control Panel software.

* **Patent pending**



TRUE PORTABILITY:

The exclusive design of WIZ probe allows a real field use of the device; an optional flight is available to dispatch safely the probe by air or other carriers including the reagents solutions in the flexible bags.

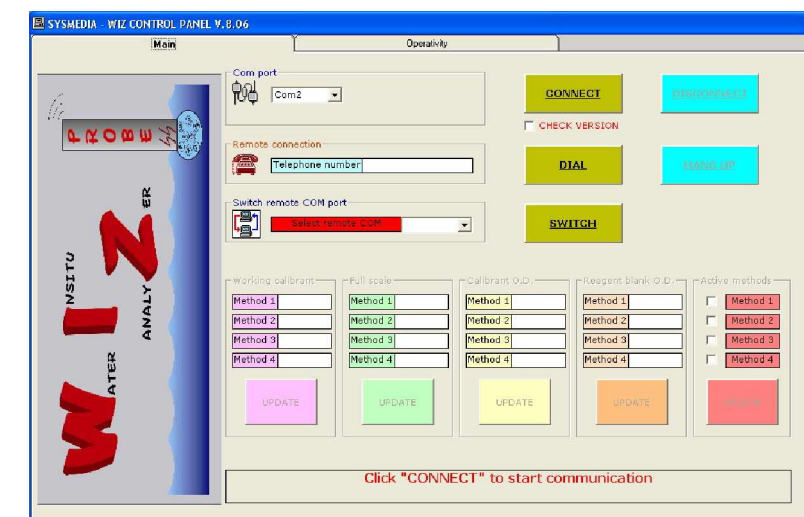
The probe can be powered by an external power supply 12 Vcc or by an optional portable battery pack with a carrying case equipped by a little photovoltaic panel.



WIZ CONTROL PANEL:

The Wiz Control Panel (WCP) software package allows a complete control of the WIZ probe, using the RS-232 serial port available from the external electric connector. It can be used locally or even remotely (GSM device) to:

- see and modify the main operational parameters
- examine directly the real-time OD value inside the μ LFR during the measurement
- program the probe in the monitor mode
- download the memory buffer with measured data
- modify the operation sequences for any method.



WIZ Control Panel software

WET CHEMISTRY METHODS:

The standard wet chemistries for nutrients analysis used in **WIZ probe** are the ones recommended by international standards:

- NH₃: Berthelot reaction
- PO₄: Molibdate, Ascorbic acid
- NO₃+NO₂: Cd reduction + NED-SAA
- NO₂: NED-SAA.

New innovative chemistries are also available to make easier the management of the on site operations:

- NH₃: fluorimetric OPA method
- NO₃+NO₂: UV photoreduction method + NED-SAA, exclusively licensed to Systea by Ifremer (French Research Institute for Exploitation of the Sea).

Other chemical parameters available on request are:

- Total Dissolved Iron
- Silicates
- Sulphide
- Urea
- Others.

FEATURES AND BENEFITS:

- Up to four parameters sequentially measured in the same device
- Quick reagents changeover
- Very low reagents consumption (from 30 to 60 microliters of each reagent per analysis)
- 50 / 150 ml reagents flexible bags.

ADVANCED FUNCTIONALITY:

- Toxic waste can be collected in a special bag placed outside the reagents compartment
- D.I. water is used to wash the hydraulic circuit and to perform sample dilutions. The bag is placed outside the reagents compartment
- 0.45 microns filtration cartridges available as option
- full manageable by an external portable PC using the Wiz Control Panel software.

THE WIZ REAGENTS CONTAINER:

Reagents and calibrants flexible bags are placed inside the “plug-in” compact reagents container. The bags are connected to the internal analytical reactor with an enhanced version of our exclusive fast hydraulic 10 lines multiconnector*, ensuring quick replacement in the field.

Reagents consumption is limited to about 30-60 microliters of each reagent per single analysis; the reagents container is designed to contain up to 500 ml of reagents and calibrant solution, to ensure at least 1000 automatic field analysis.

Auto-calibration is performed using concentrated standard solutions, contained in the same reagents container.

* Patent pending

