

HI 4321

**Conductivity/TDS Meter***Research Grade Meter with Color Display and USP*

**HI 4521 pH/EC and HI 4522  
pH/ISE/EC research grade meters are  
available in our pH section**

**Advanced Bench Meter with an Extended Range**

HI 4321 is a research-grade laboratory EC/Resistivity/TDS/Salinity bench meter with a backlit 240 x 320 dot-matrix color screen and millesimal measuring resolution.

The HI 4321 features auto-recognition of probe type (2 or 4 ring and nominal cell constant) and has an extended range from 0.001  $\mu\text{S}/\text{cm}$  to 1 S/cm. Users can choose from three different salinity scales (practical salinity, natural sea water and percent) and from two temperature compensation modes (linear and natural water). Temperature compensation can also be disabled for absolute conductivity measurements

The enhanced warning system, including acoustic signals, is in place to alert users when measuring outside the calibration range. This system will remind the user when a new calibration is due.

HI 4321 can be used to perform all 3 stages of USP <645> conductivity tests for water quality. The instrument provides clear directions on how to perform each testing stage, automatically

monitors the temperature, conductivity and stability during testing and determines whether a sample is within USP limits.

This unit is equipped with auto standard recognition and can support custom calibration solutions. Obtain up to a 4-point calibration for enhanced accuracy over an extended measuring range.

Features also include real-time graphic displays, on-screen GLP data and a fully customizable SETUP menu. The HI 4321 may also be given a unique ID number. The user can consult the on-board contextual help key from any mode simply by pressing the HELP menu. All the features are available in English, Italian, Portuguese and Spanish. Connect to a PC via the USB or RS232 ports for PC connectivity with the use of HI 92000 Windows® compatible software. Data can then be exported in popular spreadsheet formats. Equipped with a 12 Vdc power supply.

**Features**

- 240 x 320 dot matrix color display
- Logging and graphing capabilities
- USB and RS 232 for computer compatibility
- EC, resistivity, TDS and salinity ranges
- Auto recognition of probe type (2 or 4 ring, and nominal cell constant)
- Extended range from 0.001  $\mu\text{S}/\text{cm}$  to 1 S/cm
- Stages 1, 2 and 3 USP mode
- 3 salinity scales: Practical salinity, Natural sea water, Percent
- Linear and natural water temperature compensation

# Conductivity/TDS Meter

Research Grade Meter with Color Display and USP



## EC USP Mode

HANNA's HI 4521 and HI 4321 can be used to perform all 3 stages of United States Pharmacopeia testing requirements for water quality (USP <645>).

The instruments give clear instructions on how to perform each stage and automatically check that the temperature, conductivity and stability are within USP limits.

Comprehensive results are shown for all stages on a single screen at the end of the test. Up to 200 reports can be saved for future recall.



## SPECIFICATIONS

### HI 4321

Conductivity	Range	0.000 to 9.999 $\mu\text{S}/\text{cm}$ ; 10.00 to 99.99 $\mu\text{S}/\text{cm}$ ; 100.0 to 999.9 $\mu\text{S}/\text{cm}$ ; 1.000 to 9.999 $\text{mS}/\text{cm}$ ; 10.00 to 99.99 $\text{mS}/\text{cm}$ ; 100.0 to 999.9 $\text{mS}/\text{cm}$ ; 1000 $\text{mS}/\text{cm}$
	Resolution	0.001 $\mu\text{S}/\text{cm}$ ; 0.01 $\mu\text{S}/\text{cm}$ ; 0.1 $\mu\text{S}/\text{cm}$ ; 0.001 $\text{mS}/\text{cm}$ ; 0.01 $\text{mS}/\text{cm}$ ; 0.1 $\text{mS}/\text{cm}$ ; 1 $\text{mS}/\text{cm}$
	Accuracy	$\pm 1\%$ of reading ( $\pm 0.01 \mu\text{S}/\text{cm}$ )
Resistivity	Range	1.00 to 99.99 $\text{Ohm}\cdot\text{cm}$ ; 100.0 to 999.9 $\text{Ohm}\cdot\text{cm}$ ; 1.000 to 9.999 $\text{kOhm}\cdot\text{cm}$ ; 10.00 to 99.99 $\text{kOhm}\cdot\text{cm}$ ; 100.0 to 999.9 $\text{kOhm}\cdot\text{cm}$ ; 1.00 to 9.99 $\text{MOhm}\cdot\text{cm}$ ; 10.0 to 100.0 $\text{MOhm}\cdot\text{cm}$
	Resolution	0.01 $\text{Ohm}\cdot\text{cm}$ ; 0.1 $\text{Ohm}\cdot\text{cm}$ ; 0.001 $\text{kOhm}\cdot\text{cm}$ ; 0.01 $\text{kOhm}\cdot\text{cm}$ ; 0.1 $\text{kOhm}\cdot\text{cm}$ ; 0.01 $\text{MOhm}\cdot\text{cm}$ ; 0.1 $\text{MOhm}\cdot\text{cm}$
	Accuracy	$\pm 2\%$ of reading ( $\pm 1 \text{ Ohm}\cdot\text{cm}$ )
TDS	Range	0.000 to 9.999 ppm; 10.00 to 99.99 ppm; 100.0 to 999.9 ppm; 1.000 to 9.999 ppt; 10.00 to 99.99 ppt; 100.0 to 400.0 ppt
	Resolution	0.001 ppm; 0.01 ppm; 0.1 ppm; 0.001 ppt; 0.01 ppt; 0.1 ppt
	Accuracy	$\pm 1\%$ of reading ( $\pm 0.01 \text{ ppm}$ )
Salinity	Range	Practical salinity: 0.00 to 42.00; Natural seawater: 0.00 to 80.00 ppt; Percent: 0.0 to 400.0%
	Resolution	0.01 for practical salinity/natural sea water; 0.1% for percent scale
	Accuracy	$\pm 1\%$ of reading
Temperature	Range	-20.0 to 120°C; -4.0 to 248.0°F; 253.15 to 393.15K
	Resolution	0.1°C; 0.1°F; 0.1K
	Accuracy	$\pm 0.2^\circ\text{C}$ ; $\pm 0.4^\circ\text{F}$ ; $\pm 0.2\text{K}$ (excluding probe error)
Calibration	Conductivity	Auto standard recognition, custom calibration solution/4 point calibration
	Salinity	Percent scale—1 point (with HI 7037 standard)
	Temperature	3 points
Temperature Compensation		Linear and non-linear (natural water)
Log-on-demand/Auto Data Logging		10 Lots, 5000 samples per lot/10 Lots, 5000 samples per lot
Auto Endpoint		Yes
PC Connection		Opto-isolated USB and RS232
Display		240 x 320 dot-matrix color LCD with on-screen help, graphing, language selection and custom configuration
Power		12 Vdc adapter (included)
Dimensions/Weight		159 x 230 x 93 mm (6.3 x 9.1 x 3.7")/800 g (1.8 lbs.)

## ORDERING INFORMATION

**HI 4321-01** (115V) and **HI 4321-02** (230V) are supplied with 4-ring EC probe, HI 76404N electrode holder, power adapter and instruction manual.

## ELECTRODES

- HI 76312** Platinum 4-ring Conductivity/TDS probe with temperature sensor and 1 m (3.3') cable
- HI 7662-T** Temperature probe with 1 m (3.3') cable

## SOLUTIONS

- HI 7030L** 12880  $\mu\text{S}/\text{cm}$  calibration solution, 500 mL
- HI 7031L** 1413  $\mu\text{S}/\text{cm}$  calibration solution, 500 mL

- HI 70033P** 84  $\mu\text{S}/\text{cm}$  calibration solution, 20 mL sachets (25)
- HI 7034L** 80000  $\mu\text{S}/\text{cm}$  calibration solution, 500 mL
- HI 7035L** 111800  $\mu\text{S}/\text{cm}$  calibration solution, 500 mL
- HI 7039L** 5000  $\mu\text{S}/\text{cm}$  calibration solution, 500 mL
- HI 7037L** Salinity solution, 500 mL
- HI 70300L** Electrode storage solution, 500 mL
- HI 7061L** Electrode cleaning solution, 500 mL

## ACCESSORIES

- HI 76404N** Electrode holder
- HI 92000** Windows® compatible software
- HI 920010** RS232 cable for PC connection
- HI 920013** USB cable for PC connection