

HI 4321

Research Grade Conductivity/ TDS Meter with USP <645> EC/TDS/Resistivity/Salinity and Temperature

- EC, resistivity, TDS and salinity ranges
- Extended range from 0.001 $\mu\text{S}/\text{cm}$ to 1000 mS/cm
- Ready to perform all three stages of USP <645> method required for conductivity measurement of pure and ultra pure water
- Three salinity scales: practical salinity, natural sea water, percent
- Linear and natural water temperature compensation, no compensation for actual conductivity
- Fully customizable
- Large log memory with different logging methods



HI 4321 is a research-grade EC/Resistivity/TDS/Salinity benchtop meter with a large, color, graphic LCD with backlight, capable of millesimal measuring resolution of conductivity with an extended range from 0.001 $\mu\text{S}/\text{cm}$ to 1 S/cm .

Conductivity is fully customizable and include: temperature compensation coefficient, temperature reference, selectable compensation method (linear, natural water and no compensation), adjustable cell constant and TDS factor.

All ranges of conductivity, resistivity and TDS feature autorange or users can select the unit to measure manually. Three salinity scales are available: natural seawater, practical salinity and %.

HI 4321 can be used to perform all 3 stages of USP <645> method required for conductivity measurement of pure and ultra pure water. The instrument provides clear directions on how to perform each testing stage and automatically monitors the temperature, conductivity and stability during testing and determines whether a sample is within USP limits.

This instrument is equipped with auto standard recognition and can support custom calibration solutions. Up to a four point

calibration can be obtained for enhanced accuracy over an extended measuring range.

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

Features also include real-time graphic displays and on-screen GLP data. Fully customizable instrument and parameters via setup screens. On-board contextual help can be accessed from any mode simply by pressing the HELP button.

Up to 10 profiles can be saved and recalled eliminating the need to reconfigure each time when a different electrode is used.

Three selectable logging modes are available: Automatic, Manual and AutoHold. Up to 100 logging lots with 10,000 records per lot can be stored for automatic or manual modes along with up to 200 USP reports.

All features are available in English, Italian, Portuguese and Spanish. Connect to a PC via the USB or RS232 ports, with the use of HI 92000 Windows® compatible software.



EC USP Mode

HI 4321 is capable of performing all 3 stages of United States Pharmacopeia testing requirements for water quality (USP <645>).

This instrument provides clear instructions on performing each stage and automatically checks the respects of 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 µS/cm; 10.00 to 99.99 µS/cm; 100.0 to 999.9 µS/cm; 1.000 to 9.999 mS/cm; 10.00 to 99.99 mS/cm; 100.0 to 1000 mS/cm (actual EC)
	Resolution	0.001 µS/cm; 0.01 µS/cm; 0.1 µS/cm; 0.001 mS/cm; 0.01 mS/cm; 0.1 mS/cm
	Accuracy	±1% of reading (±0.01 µS/cm)
Resistivity	Range	1.0 to 99.9 Ohms x cm; 100 to 999 Ohms x cm; 1.00 to 9.99 kOhms x cm; 10.0 to 99.9 kOhms x cm; 100 to 999 kOhms x cm; 1.00 to 9.99 MOhms x cm; 10.0 to 100.0 MOhms x cm
	Resolution	0.1 Ohms x cm; 1 Ohms x cm; 0.01 kOhms x cm; 0.1 kOhms x cm; 1 kOhms x cm; 0.01 MOhms x cm; 0.1 MOhms x cm
	Accuracy	±2% of reading (±1 Ohm x 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 actual TDS (with 1.00 factor)
	Resolution	0.001 ppm; 0.01 ppm; 0.1 ppm; 0.001 ppt; 0.01 ppt; 0.1 ppt
	Accuracy	±1% of reading (±0.01 ppm)
Salinity	Factor	0.40 to 1.00
	Range	practical scale: 0.00 to 42.00 psu; natural sea water scale: 0.00 to 80.00 ppt; percent scale: 0.0 to 400.0‰
	Resolution	0.01 for practical scale/natural sea water scale; 0.1‰ for percent scale
Temperature	Accuracy	±1% of reading
	Range	-20.0 to 120.0°C; -4.0 to 248.0°F; 253.15 to 393.15K
	Resolution	0.1°C; 0.1°F; 0.1K
Calibration	Accuracy	±0.2°C; ±0.4°F; ±0.2K (excluding probe error)
	Conductivity	auto standard recognition, custom calibration solution/four point calibration
	Salinity	percent scale—one point (with HI 7037 standard)
Temperature Compensation	Temperature	three points
	EC Probe	linear and non-linear (natural water)
	EC Probe	HI 76312 platinum, four ring conductivity/TDS probe with internal temperature sensor and 1 m (3.3') cable (included)
Temperature Probe		HI 7662-T stainless steel temperature probe with 1 m (3.3') cable (included)
Logging	Record	100 lots with 10,000 record/lot
	Interval	settable between one and max log time
	Type	automatic, log on demand, Autohold
Replatinization		yes
Display		240 x 320 dot-matrix color LCD with on-screen help, graphing, language selection and custom configuration
PC Connection		RS232, USB
Power Supply		12 VDC adapter (included)
Environment		0-50°C (32 to 122°F) (273 to 323K) RH max 95% non-condensing
Dimensions		160 x 231 x 94 mm (6.3 x 9.1 x 3.7")
Weight		1.2 Kg (2.6 lbs.)

ORDERING INFORMATION

HI 4321-01 (115V) and HI 4321-02 (230V) are supplied with HI 76312 conductivity probe, HI 76404N electrode holder, 12 VDC power adapter and instructions.

PROBES

HI 76312	Platinum, four ring conductivity/TDS probe with internal temperature sensor and 1 m (3.3') cable
HI 7662-T	Stainless steel temperature probe with 1 m (3.3') cable

SOLUTIONS

HI 7030L	12890 µS/cm calibration solution, 500 mL
HI 7031L	1413 µS/cm calibration solution, 500 mL
HI 7033L	84 µS/cm calibration solution, 500 mL
HI 7034L	80000 µS/cm calibration solution, 500 mL
HI 7035L	111800 µS/cm calibration solution, 500 mL
HI 7039L	5000 µS/cm calibration solution, 500 mL
HI 7037L	Salinity solution, 500 mL
HI 7061L	Electrode cleaning solution, 500 mL

ACCESSORIES

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

For a complete list of Solutions and Electrodes, see the end of this section.