

HI 93414

Turbidity and Free/Total Chlorine Meter

EPA Compliant Meter that Features HANNA's Exclusive Fast Tracker™ (T.I.S.) and CAL CHECK™



FastTracker™
A new revolution in organized data management

Features

- Tungsten light source—EPA compliant turbidity measurement
- High accuracy at low ranges
- Exclusive chlorine Cal Check™ calibration validation
- Exclusive Fast Tracker™ system
- User replaceable light source
- 2, 3 or 4 point turbidity calibration
- USB and RS232 PC connectivity
- Backlit LCD
- GLP capability
- User friendly display with guidance codes
- Auto shut-off
- Battery percentage on display
- Continuous current time on display

A Truly Advanced Meter

The HI 93414 combines turbidity and colorimetric measurements to measure the most important parameters of drinking water: turbidity and free/total chlorine. Designed for water quality measurements, HI 93414 provides reliable and accurate readings on low turbidity and chlorine values. The HI 93414 meets and exceeds the requirements of USEPA and Standard Methods both for turbidity and colorimetric measurements.

This instrument incorporates a state-of-the-art optical system which guarantees accurate results. The optical system, consisting of a tungsten filament lamp, three detectors (scattered, transmitted for turbidimeter range and one for colorimeter range), and a narrow band interference filter @ 525 nm assures long term stability and minimizes stray light and color interferences. It also compensates for variations in intensity of the lamp, making no need for frequent calibration. The 25 mm round cuvettes made from special optical glass guarantee the repeatability and consistency of the measurements.

Turbidity measurements can be made in the 0.00 to 1000 NTU (Nephelometric Turbidity Units) range. The instrument has an EPA compliance reading mode which rounds the reading to meet EPA reporting requirements.

Depending on the measured sample and needed accuracy, normal measurement, continuous measurement or signal averaging measurement can be selected. Free or Total Chlorine measurements can be made in the 0.00 to 5.00 mg/L (ppm) range.

With the powerful CAL CHECK™ function, performance of the instrument can be validated at any time by using the exclusive HANNA ready-made NIST traceable standards. Calibration can be performed at any time for turbidity and colorimetric range. For turbidity, a two, three or four-point calibration is available using supplied (<0.1, 15, 100 and 750 NTU adjustable calibration points) or user prepared standards. For colorimeter measurements, a one-point calibration can be performed.

HI 93414 has complete G.L.P. (Good Laboratory Practice) functions that allow traceability of the calibration conditions. The last calibration points, time and date can be checked by a single key touch. HI 93414 has a user-friendly interface with an easy to read, large Liquid Cristal Display. Displayed codes guide the user step by step with routine operation and through calibration. Confirmation and error acoustic signals aid the user during instrument operation.

With it's logging function, up to 200 measurements can be stored in internal memory and consulted at any time. Data can be further stored and analyzed by transferring it to a PC via RS232 or USB interface and HANNA software (optional).

For advanced field applications, the HI 93414 is equipped with Fast Tracker™—Tag Identification System (T.I.S.) that makes data collecting and management simpler than ever.

**iButton® Tags are Easy to Install**

Install TAGs near your sampling points for quick and easy iButton® readings. Each TAG contains a computer chip with a unique identification code encased in stainless steel. You can install a practically unlimited amount of TAGs. Additional TAGs can be ordered for all of your traceability requirements.

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CAL CHECK™ Calibration Validation

With HANNA's exclusive CAL CHECK™ validation function users are able to verify the performance of the instrument at any time. Taking just a few short steps, the validation procedure is user friendly and ensures that the meter is properly

calibrated. Just use the exclusive HANNA ready-made, NiST traceable standards to verify the performance of the instrument and recalibrate if necessary. All instruments are factory calibrated and the electronic and optical design minimizes the need for frequent calibration.

TURBIDITY

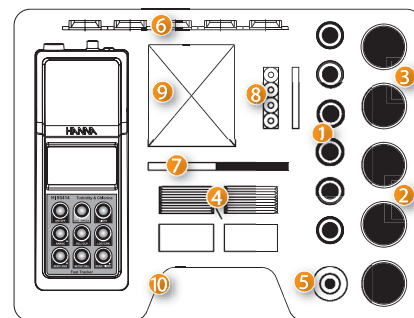
Range	0.00 to 9.99; 10.0 to 99.9 and 100 to 1000 NTU
Range Selection	Automatic
Resolution	0.01 NTU from 0.00 to 9.99 NTU; 0.1 NTU from 10.0 to 99.9 NTU; 1 NTU from 100 to 1000 NTU
Accuracy	±2% of reading plus 0.02 NTU
Repeatability	±1% of reading or 0.02 NTU, whichever is greater
Stray Light	< 0.02 NTU
Typical EMC Deviation	±0.05 NTU
Light Detector	Silicon Photocell
Method	Ratio Nephelometric Method (90°), ratio of scattered and transmitted light; Adaptation of the USEPA Method 180.1 and Standard Method 2130 B.
Measuring mode	Normal, Average, Continuous
Turbidity Standards	<0.1, 15, 100 and 750 NTU
Calibration	Two, three or four-point calibration

FREE AND TOTAL CHLORINE

Range	Free Cl ₂ 0.00 to 5.00 mg/L; Total Cl ₂ 0.00 to 5.00 mg/L
Resolution	0.01 mg/L from 0.00 to 3.50 mg/L; 0.10 above 3.50 mg/L
Accuracy	±0.02 mg/L @ 1.00 mg/L
Typical EMC Deviation	±0.02 mg/L
Detector	Silicon photocell with 525 nm narrow band interference filter
Method	Adaptation of the USEPA Method 330.5 and Standard Method 4500-Cl G. The reaction between chlorine and DPD reagent causes a pink tint in the sample.
Standards	1 mg/L free chlorine, 1 mg/L total chlorine
Calibration	One-point calibration

GENERAL SPECIFICATIONS

Light Source	Tungsten filament lamp
Lamp life	Greater than 100,000 readings
LOG Memory	200 records
Serial Interface	USB or RS 232
Environment	Up to 50°C (122°F); max 95% RH non-condensing
Power Supply	(4) 1.5V AA alkaline batteries or AC adapter; Auto-off after 15 minutes of non-use
Dimensions / Weight	224 x 87 x 77 mm (8.8 x 3.4 x 3.0") / 512 g (18 oz)



- 1 Five sample cuvettes and caps
- 2 Three calibration cuvetts for turbidimeter
- 3 Two calibration cuvetts for colorimeter*
- 4 Reagent powder packets for F & T chlorine
- 5 Silicone oil
- 6 Five tag holders with tags (HI 920005)
- 7 Scissors
- 8 Batteries (4)
- 9 AC adapter
- 10 Rugged carrying case

Instruction manual

Quick reference guide

Instrument quality certificate

ORDERING INFORMATION

HI 93414-01 (115V) and HI 93414-02 (230V) are supplied with sample cuvettes and caps (5), calibration cuvetts for turbidimeter, calibration cuvetts for colorimeter, silicone oil, cuvet wiping tissue, scissors, batteries (4), AC adapter, instruction manual and rugged carrying case.

SOLUTIONS

HI 93414-11 CAL CHECK™ Calibration set for Free & Total Chlorine

HI 93701-01 Reagents for 100 Free Chlorine tests

HI 93701-03 Reagents for 300 Free Chlorine tests

HI 93711-01 Reagents for 100 Total Chlorine tests

HI 93711-03 Reagents for 300 Total Chlorine tests

HI 98703-11 Turbidity standards kit

HI 93703-50 Cuvet cleaning solution, 250 mL

ACCESSORIES

HI 920005 Tag holders with tags (5)

HI 98703-58 Silicone oil (15 mL)

HI 93703-60 Caps for cuvettes (4)

HI 731318 Tissue for wiping cuvettes (4)

HI 731331 Glass cuvettes (4)

HI 92000 Windows® compatible software

HI 920011 5 to 9 pin RS232 connection cable

HI 920013 USB cable for PC connection