

Turbidity and Free/ Total Chlorine Meter

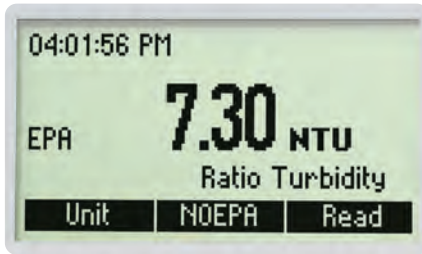
EPA Compliant

Turbidity

EPA meters



The HI83414 is a multiparameter instrument that measures the most important parameters in drinking water: turbidity and chlorine. The instrument is based on a state-of-the-art optical system which provides accurate results by minimizing stray light and color interferences. Periodic calibration with the supplied standards compensates for any variations in intensity of the tungsten lamp. The colorimeter portion of the meter uses a 525 nm narrow band interference filter for maintaining the proper wavelength in the measurement of free and total chlorine. All measurements are performed with 25 mm round cuvettes composed of special optical glass to ensure maximum repeatability of turbidity and chlorine measurements.



EPA Compliant

The HI83414 meets and exceeds the requirements of EPA and Standard Methods both for turbidity and colorimetric chlorine measurements. When in EPA mode all turbidity readings are rounded accordingly to meet reporting requirements.



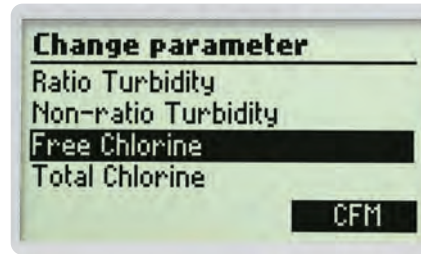
Backlit Graphic LCD Display

A graphic LCD display provides an easy to understand, user-friendly interface. All messages are in plain text making them easy to read.



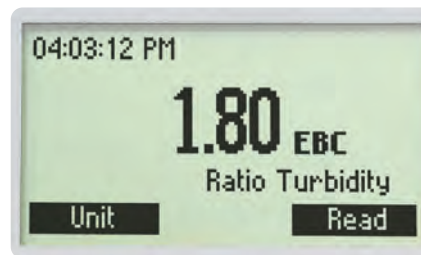
Light blocking cuvette cover

An affixed, light-blocking cuvette cover closes over the sample cell, reducing stray light from affecting any measurement readings.



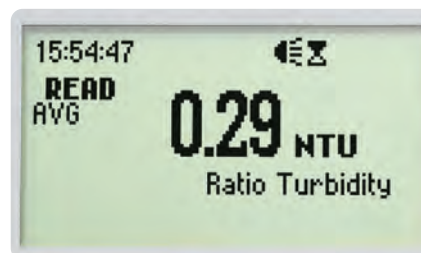
Four Measurement Modes

The HI83414 features four measurement modes including ratio or non-ratio mode for turbidity, free chlorine, and total chlorine. In ratio mode the turbidity is 0.00 to 4000 NTU (Nephelometric Turbidity Units) while in the non-ratio mode the range is 0.00 to 40.0 NTU. The range for free or total chlorine measurements is 0.00 to 5.00 mg/L (ppm) range.



Multiple Turbidity Units of Measure

Turbidity can be displayed as nephelometric turbidity units (NTU), European Brewing Convention units (EBC) or Nephelos units.



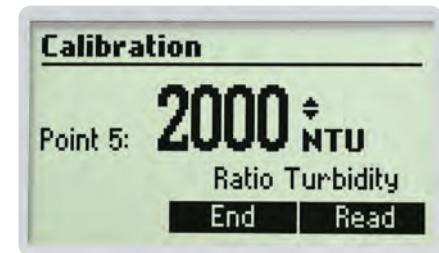
Multiple reading modes

Normal measurement, continuous measurement, or signal averaging measurement are reading modes available



CAL Check™

With the powerful CAL Check function, reliable performance of the chlorine colorimeter can be validated at any moment by using the exclusive HANNA ready-made, NIST traceable standards. All standards are supplied with a Certificate of Analysis (COA) for traceability.



Calibration

A two, three, four, or five-point turbidity calibration can be performed by using the supplied (<0.1, 15, 100, 750, and 2000 NTU) standards. Calibration points can be modified if user-prepared standards are used. For free and total chlorine, the CAL Check standard can be used for calibration to 1.00 mg/L (ppm).



AMCO AEPA-1 Primary Turbidity Standard

The AMCO AEPA-1 supplied standards are recognized as a primary standard by the USEPA. These non-toxic standards are made of styrene divinylbenzene polymer spheres that are uniform in size and density. The standards are stable and reusable with a long shelf life. These standards are used for calibration and performance verification of the HI83414 turbidity meter.



- All measurements are performed with 25 mm round cuvettes composed of special optical glass to ensure maximum repeatability of turbidity and chlorine measurements.

Calibration Error Messages

The calibration is successfully performed if the reading is within certain limits.



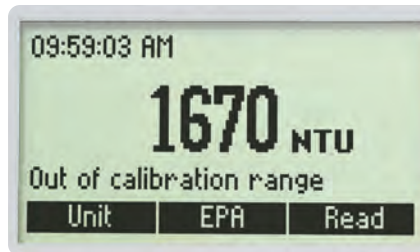
If the CAL Check™ standard value is too high, the display will show a high standard message. If this message appears, check if the correct cuvet was used.



If the CAL Check standard value is too low, the display will show low standard message. If this message appears, check if the correct cuvet was used.

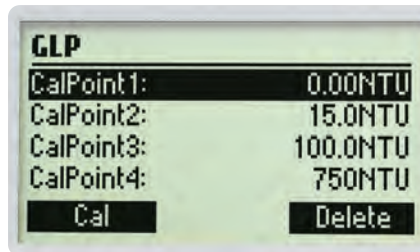


If the calculated calibration coefficients are outside a certain range a calibration error message is displayed.



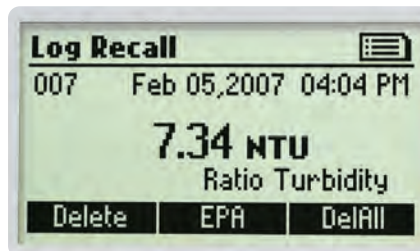
Out of Cal Range Function

The instrument has a mechanism to prevent taking measurements in a range where the calibration does not assure the best results.



GLP Data

The HI83414 features complete GLP (Good Laboratory Practice) functions that allow traceability of the calibration conditions. Data includes calibration points, date, and time.



Data Logging

Up to 200 measurements can be stored in the internal memory and recalled at any time.

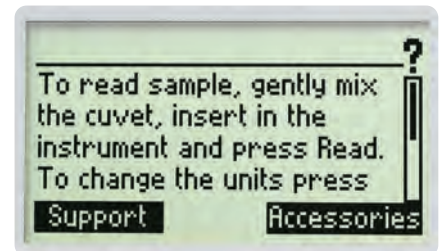


Data Transfer

For further storage or analysis options, logged data can be downloaded to a Windows compatible PC using the USB port and the HI92000 software.

Tutorial Mode

The unique tutorial mode provides additional information to help the user during measurements. When enabled, the instrument displays explanations and a confirmation button when a preparation or other operation has to be performed.



Contextual Help

Contextual help is always available through a dedicated HELP button. Clear tutorial messages and directions are available on-screen to quickly and easily guide users through setup and calibration. The help information displayed is relative to the setting/option being viewed.

CAL Check™ standards with certificate

The HI93414-11 free and total chlorine and HI88703-11 turbidity CAL Check standards are used for calibration and performance verification of the HI83414.

- Supplied with Certificate of Analysis
 - Lot number
 - Expiration date
 - Standard value @ 25°C
 - Reference meter NIST traceable
- Provided storage containers
 - Light tight
 - Protects from accidental breakage



HI83414 Turbidity Specifications

Non-Ratio Mode	Range	0.00 to 9.99; 10.0 to 40.0 NTU 0.0 to 99.9; 100 to 268 Nephelos 0.00 to 9.80 EBC
	Resolution	0.01; 0.1 NTU 0.1; 1 Nephelos 0.01 EBC
Ratio Mode	Range	0.00 to 9.99; 10.0 to 99.9; 100 to 4000 NTU 0.0 to 99.9; 100 to 26800 Nephelos 0.00 to 9.99; 10.0 to 99.9; 100 to 980 EBC
	Resolution	0.01; 0.1; 1 NTU 0.1; 1 Nephelos 0.01; 0.1, 1 EBC
Range Selection	automatic	
Accuracy	±2% of reading plus 0.02 NTU (0.15 Nephelos; 0.01 EBC); ±5% of reading above 1000 NTU (6700 Nephelos; 245 EBC)	
Repeatability	±1% of reading or 0.02 NTU (0.15 Nephelos; 0.01 EBC) whichever is greater	
Stray Light	< 0.02 NTU (0.15 Nephelos; 0.01 EBC)	
Light Detector	silicon photocell	
Method	nephelometric method (90°) or ratio nephelometric method (90° & 180°), adaptation of the USEPA method 180.1 and standard method 2130 B	
Measuring Mode	normal, average, continuous	
Turbidity Standards	<0.1, 15, 100, 750 and 2000 NTU	
Calibration	two, three, four or five-point calibration	

HI83414 Free and Total Chlorine Specifications

Range	0.00 to 5.00 mg/L (ppm)
Resolution	0.01 mg/L (ppm) from 0.00 to 3.50 mg/L (ppm); 0.10 above 3.50 mg/L (ppm)
Accuracy @25°C/77°F	±0.02 mg/L @ 1.00 mg/L
Detector	silicon photocell with 525 nm narrow band interference filters
Method	adaptation of the USEPA Method 330.5 and Standard Method 4500-Cl G.
Standards	1.00 mg/L (ppm) free chlorine; 1.00 mg/L (ppm) total chlorine
Calibration	one-point calibration

HI83414 General Specifications

Light Source/ Life	tungsten filament lamp / greater than 100,000 readings
Display	40 x 70 mm graphic LCD (64 x 128 pixels) with backlight
Log Memory	200 records
Connectivity	USB
Environment	0 to 50°C (32 to 122°F); max 95% RH non-condensing
Power Supply	230/115 Vac; 50/60 Hz;
Dimensions	230 x 200 x 145 mm (9.0 x 7.9 x 5.7")
Weight	2.5 kg (88 oz.)
Ordering Information	HI83414-01 (115V) and HI83414-02 (230V) are supplied with sample cuvettes and caps (5), calibration cuvettes for turbidity (HI88703-11) and colorimeter (HI93414-11), silicone oil (HI98703-58), cuvette wiping cloth, scissors, power cord, instrument quality certificate, and instruction manual.