ISO 9001 CERTIFIED

Bench-top Meters for Laboratories

HANNA instruments
Laboratory & Industrial Division

pH 200 SERIES

The pH 200 series of bench meters are ideal for water analysis in all laboratory settings. Each and every Hanna bench meter is easy to use, economical, reliable, and most important, precise.

pH 212

If only pH is needed, the **pH 212** performs brilliantly. It includes all the enhancements of the **pH 213**. You can select the displayed resolution of 0.01 pH or 0.001 pH for greater accuracy and clarity.

pH 213

Multiple parameters and very versatile, the **pH 213** measures pH directly as well as milliVolts for pH, Ion Specific Electrodes (ISE), and Oxidation Reduction Potential (ORP) electrodes. All measurements can be made using automatic or manual temperature compensation. The instructions for calibration are presented on the display with safeguards to prevent premature calibration errors. You can choose either 1 or 2 point calibration using the 5 most common memorized buffers. Secure connectivity to your PC or network through a serial RS232 connection and Windows® compatible software.

Ordering Information

pH 210, **pH 211**, **pH 211R**, **pH 212** & **pH 213** are supplied complete with HI 1131B pH electrode with BNC connector and 1 m cable, HI 7669/2W temperature probe, electrode holder, pH 4 and 7 calibration solution (20 mL each), electrolyte solution, & 12VDC adapter

Accessories

HI 76404 . . . . . .Electrode holder
HI 7004L . . . . . .pH 4.01 buffer solution, 500 mL
HI 7007L . . . . . .pH 7.01 buffer solution, 500 mL
HI 7010L . . . . . .pH 10.01 buffer solution, 500 mL
HI 77400P . . . . . .Cal. kit (pH 4 & 7, 20 mL, 5 pcs ea.)
HI 70300L . . . . . .Storage solution, 460 mL
HI 92000 . . . . . .Windows® compatible software
HI 920010 . . . . . .9-pin cable for PC
HI 8427 . . . . . .pH and ORP electrode simulator
HI 931001 . . . . . .pH and ORP electrode simulator

Specifications **pH 213**

pH Range	-2.00 to 16.00
	-2.000 to 16.000
pH Accuracy	±0.01; ±0.002
pH Resolution	0.01; 0.001
mV Range	±999.9 (ISE & ORP)
mV Accuracy	±0.05% F.S. (ISE & ORP)
mV Resolution	0.1 (ISE & ORP)
°C Range	0.0 to 100.0
°C Accuracy	±0.5
°C Resolution	0.1
Auto cal Buffers	4.01/6.86/7.01/9.18/10.01
pH calibration	Automatic 1 or 2 points
Auto T.C.	with HI 7669/2W probe
Manual T.C.	from 0 to 100°C
pH electrode	HI 1131B (included)
°C probe	HI 7669/2W (included)
Input impedance	10^{12} ohm
RS232 output	•
Power	12VDC adapter (included)
Environment	0 to 50 (32 to 122°F)
	max. 95% RH
Dimensions	240 x 182 x 74 mm (9.4 x 7.2 x 2.9")
Weight	1.1 Kg (2.4 lb)

pH 211

Combining the most frequently asked for parameters, the **pH 211** is the popular choice for bench-top instruments of laboratories around the world. You can measure pH directly, milliVolts for pH, Ion Specific Electrodes (ISE), and Oxidation Reduction Potential (ORP) electrodes. Automatic or manual temperature compensation is user selectable. The instructions for calibration are presented in a step-by-step display with safeguards to prevent premature calibration errors.

pH 210

To solely measure pH, the easy choice is the **pH 210**. Calibration is just a few simple steps and is guided by graphics on the LCD and sophisticated custom microprocessor. You can calibrate at 1 or 2 points by choosing any combination of the 5 buffer values in the meter's powerful memory.

pH 209

The practical design of this meter makes it a smart choice for any laboratory. Its manual calibration feature provides you with an endless choice of offset and slope values. It is ideal for those applications where standardized buffers are not suitable. As an educational tool, the principles of pH measurement can be demonstrated with greater understanding.

	pH 212	**pH 211/pH 211R***	**pH 210**	**pH 209**
pH Range	-2.00 to 16.00 -2.000 to 16.000	0.00 to 14.00	0.00 to 14.00	0.00 to 14.00
pH Accuracy	±0.01/±0.002	±0.01	±0.01	±0.01
pH Resolution	0.01/0.001	0.01	0.01	0.01
mV Range	-	±399.9 (ISE); ±1999 (ORP)	-	-1999 to 1999
mV Accuracy	-	±0.2 (ISE); ±1 (ORP)	-	±1
mV Resolution	-	0.1 (ISE); 1 (ORP)	-	1
°C Range	0.0 to 100.0	0.0 to 100.0	0.0 to 100.0	-
°C Accuracy	±0.5	±0.5	±0.5	-
°C Resolution	0.1	0.1	0.1	-
Auto cal Buffers	4.01/6.86/7.01/9.18/10.01	4.01/6.86/7.01/9.18/10.01	4.01/6.86/7.01/9.18/10.01	-
pH calibration	Automatic 1 or 2 points	Automatic 1 or 2 points	Automatic 1 or 2 points	Manual 2 points
Auto T.C.	with HI 7669/2W probe	with HI 7669/2W probe	with HI 7669/2W probe	-
Manual T.C.	from 0 to 100°C	from 0 to 100°C	from 0 to 100°C	from 0 to 100°C
pH electrode	HI 1131B (included)	HI 1131B (included)	HI 1131B (included)	HI 1332B (included)
°C probe	HI 7669/2W (included)	HI 7669/2W (included)	HI 7669/2W (included)	-
Input impedance	10^{12} ohm	10^{12} ohm	10^{12} ohm	10^{12} ohm
RS232 output	•	-	-	-
Power	12VDC adapter (included)	12VDC adapter (included)	12VDC adapter (included)	12VDC adapter (included)
Environment	0 to 50 (32 to 122°F) max. 95% RH	0 to 50 (32 to 122°F) max. 95% RH	0 to 50 (32 to 122°F) max. 95%	0 to 50 (32 to 122°F)
Dimensions	240x182x74 mm (9.4x7.1x2.9")	240x182x74 mm (9.4x7.1x2.9")	240x182x74 mm (9.4x7.1x2.9")	240x182x74 mm (9.4x7.1x2.9")
Weight	1.1 Kg (2.4 lb)	1.1 Kg (2.4 lb)	1.1 Kg (2.4 lb)	1.0 Kg (2.2 lb)

*pH 211R offers analog output of 0 to 5 V that represents the full pH and mV range.

pH 300 SERIES

Todays regulatory environment is the compelling reason to demand more from laboratory instrumentation. To remain in compliance, instrumentation must follow protocols for traceability and documentation. The pH 300 series of multi-functional instruments meet requirements of Good Laboratory Practices for calibration protocols and data record keeping.

pH 302

The **pH 302** fulfills the needs of general purpose and analytical laboratories for a single instrument to measure pH milliVolts (mV), Oxidation Reduction Potential (ORP), and specific ions. The oversized display is easy to read and presents step-by-step guidance for calibration. Instructions are also provided on the display to correct calibration errors and guarantees optimal performance. Advanced memory feature also recalls calibration data to comply with Good Laboratory Practices (GLP) protocols.

To support your requirements to customize activities and record samplings, the meter features an on-board dot matrix plain paper printer and unique programmable functions:

- Sampling cycle - set the sample number, time, and date
- Custom calibration - calibrate the meter using nonstandard buffer values
- GLP compliance - prints calibration data with date, time, pH offset, and slope
- Time study 1 - log and print pH, mV, and temperature values at selected intervals
- Time study 2 - log and print pH, mV, and temperature to a pre-set parameter
- Alarms - set upper and lower pH or mV limits
- International - choose different languages for printed data
- ISE - print the ion concentration for pH values
- Connectivity - sets up communication with your computer system

Ordering Information

pH 300, **pH 301** and **pH 302** are supplied complete with HI 1131B pH electrode with BNC connector and 1 m cable, HI 7669/2W temperature probe, pH 4, 7 and 10 cal. solutions (20 mL each) & 12VDC adapter

In addition, **pH 302** comes with 5 spare paper rolls

Accessories

HI 76405 . . . . . .Electrode holder
HI 7004L . . . . . .pH 4.01 buffer solution, 500 mL
HI 7007L . . . . . .pH 7.01 buffer solution, 500 mL
HI 7010L . . . . . .pH 10.01 buffer solution, 500 mL
HI 77400P . . . . . .Cal. kit (pH 4 & 7, 20 mL, 5 pcs ea.)
HI 70300L . . . . . .Storage solution, 460 mL
HI 92000 . . . . . .Windows® compatible software
HI 920010 . . . . . .9-pin cable for PC
HI 8427 . . . . . .pH and ORP electrode simulator
HI 931001 . . . . . .pH and ORP electrode simulator

pH 301

When requirements include specific ion concentration measurements, the **pH 301** is an exceptional value. It optimizes precision and accuracy by employing 1, 2, or 3-point calibration. In the Ion Specific Electrode (ISE) mode, you can switch between the readings in milliVolts or direct concentration. Collected data is logged at selected intervals and can be easily transferred to your computer.

pH 300

If requirements are for pH, mV and temperature, the **pH 300** will provide superior performance and value. The oversized LCD provides easy-to-read sample information and instructions for calibration with safeguards to prevent premature calibration.

Specifications	**pH 302**	**pH 301**	**pH 300**
pH Range	0.00 to 14.00	-1.999 to 19.999	0.00 to 14.00
pH Accuracy	±0.01	±0.002	±0.01
pH Resolution	0.01	0.01; 0.001	0.01
mV Range	±399.9 (ISE); ±1999 (ORP)	±1999.9	±399.9 (ISE); ±1999 (ORP)
mV Accuracy	±0.2 (ISE); ±1 (ORP)	±0.1 (±799.9); ±0.2 (outside)	±0.2 (ISE); ±1 (ORP)
mV Resolution	0.1 (ISE); 1 (ORP)	0.1	0.1 (ISE); 1 (ORP)
°C Range	-9.9 to +120.0	-9.9 to +120.0	-9.9 to +120.0
°C Accuracy	±0.5	±0.5	±0.5
°C Resolution	0.1	0.1	0.1
ppm Range	-	0.001 to 19999	-
ppm Accuracy	-	±0.5% F.S.	-
ppm Resolution	-	0.001; 0.01; 0.1; 1	-
Auto cal Buffers	4.01/7.01/10.01	1.68/4.01/6.86/7.01/9.18/10.01	4.01/7.01/10.01
pH calibration	Automatic 1 or 2 points	Automatic 1, 2 or 3 points	Automatic 1 or 2 points
Last cal recall	•	•	•
Auto T.C.	with HI 7669/2W probe	with HI 7669/2W probe	with HI 7669/2W probe
Manual T.C.	from -9.9 to +120.0°C	from -9.9 to +120.0°C	from -9.9 to +120.0°C
pH electrode	HI 1131B (included)	HI 1131B (included)	HI 1131B (included)
°C probe	HI 7669/2W (included)	HI 7669/2W (included)	HI 7669/2W (included)
Printer	•	-	-
Input impedance	10^{12} ohm	10^{12} ohm	10^{12} ohm
RS232 output	•	•	•
Power	12VDC adapter (included)	12VDC adapter (included)	12VDC adapter (included)
Environment	0 to 50 (32 to 122°F) max. 95% RH	0 to 50 (32 to 122°F) max. 95% RH	0 to 50 (32 to 122°F) max. 95% RH
Dimensions	280 x 200 x 75 mm (11 x 7.9 x 3")	280 x 200 x 75 mm (11 x 7.9 x 3")	280 x 200 x 75 mm (11 x 7.9 x 3")
Weight	1.3 Kg (2.9 lb)	1.3 Kg (2.9 lb)	1.3 Kg (2.9 lb)

EC 215 & EC 214

EC 215 & EC 214

Hanna Instruments offers you a choice of two bench meters for the laboratory. The EC 215 presents 4 selectable ranges and provides the highest resolution and precision for your measuring requirements. Each measurement is automatically compensated for the effects of temperature. In addition, when working with highly acidic, alkaline, or saline samples, the temperature coefficient can be adjusted from 0 to 2.5% per degree Celsius. Included with the EC 215 is a rugged, platinum, 4-ring sensor that responds faster than conventional stainless steel models.

For greater versatility of use, the EC 214 offers manual temperature compensation. Both models feature large, easy-to-read liquid crystal displays that show conductivity and temperature values simultaneously. Trust Hanna Instruments to deliver quality and value.

Specifications	**EC 215/EC 215R***	**EC 214**
µS/cm Range	0.0 to 199.9; 0 to 1999	0.0 to 199.9; 0 to 1999
µS/cm Accuracy	±1% F.S. (excluding probe error)	±1% F.S. (excluding probe error)
µS/cm Resolution	0.1; 1	0.1; 1
mS Range	0.00 to 19.99; 0.0 to 199.9	0.00 to 19.99; 0.0 to 199.9
mS Accuracy	±1% F.S. (excluding probe error)	±1% F.S. (excluding probe error)
mV Resolution	0.01; 0.1	0.01; 0.1
EC Calibration	Manual 1 point with knob	Manual 1 point with knob
Temp. Comp.	Automatic from 0 to 50°C with an adjustable β from 0 to 2.5% per °C	Manual from 0 to 50°C with an adjustable β from 0 to 2% per °C
Probe	HI 76303 platinum, 4-ring, conductivity probe with temperature sensor and 1 m cable (included)	HI 76300 platinum, 4-ring, conductivity probe and 1 m cable (included)
Power	12 VDC power adapter (included)	12 VDC power adapter (included)
Environment	0 to 50°C (32 to 122°F); max. 95% RH	0 to 50°C (32 to 122°F); max. 95% RH
Dimensions	240 x 182 x 74 mm (9.4 x 7.2 x 2.9")	240 x 182 x 74 mm (9.4 x 7.2 x 2.9")
Weight	1 Kg (36 oz)	1 Kg (36 oz)

* EC 215R offers analog output of 0 to 5 V that represents the full conductivity scale across all 4 ranges.

Ordering Information

EC 215 & **EC 215R** is supplied complete with HI 76303 conductivity probe with temperature sensor and 1 m (3.3') cable, 12 VDC power adapter, and instruction manual.
EC 214 is supplied complete with 1 m (3.3') cable, 12 VDC power adapter, and instruction manual

Accessories

HI 76303 . . . . . .Conductivity probe for EC 214
HI 76300 . . . . . .Conductivity probe for EC 215
HI 76404 . . . . . .Probe holder
HI 7030L . . . . . .12880 µS/cm calibration solution (460 mL)
HI 7031L . . . . . .1413 µS/cm calibration solution (460 mL)
HI 7033L . . . . . .84 µS/cm calibration solution (460 mL)
HI 7034L . . . . . .80000 µS/cm calibration solution (460 mL)
HI 7035L . . . . .111800 µS/cm calibration solution (460 mL)

HI 964400 & LP 2000

HI 964400

The perfect solution for accurate dissolved oxygen measurements in the laboratory is available from Hanna Instruments. Calibration is easily performed with or without calibration solutions. Coupled to a sophisticated bench-top analyzer, you are able to measure and log important data automatically. The **HI 964400** is the best choice for professional results.

Ordering Information

HI 964400 is supplied complete with HI 76402/2 D.O. probe with 2 m (6.6') cable, 2 spare membranes, HI 7041S oxygen solution (30 mL), 12 VDC adapter, and dust cover.

Accessories

HI 76407/10 . . . . . .D.O. probe with 10 m (33') cable
HI 76407/20 . . . . . .D.O. probe with 20 m (67') cable
HI 7040L . . . . . .Zero oxygen solution, 460 mL
HI 7640A/P . . . . . .Pack of 5 replacement membranes
HI 92000 . . . . . .Windows® compatible software
HI 920010 . . . . . .PC connection cable

Specifications	HI 964400
mg/L O_2 Range	0.00 to 45.00
mg/L O_2 Accuracy	±1.5 of full scale
mg/L O_2 Resolution	0.01
% Saturation O_2 Range	0.0 to 300.0
% Saturation O_2 Resolution	0.1
°C Range	0.0 to 50.0
°C Accuracy	±0.5
°C Resolution	0.1
mg/L O_2 Calibration	Automatic 1 or 2 points at 0% and 100% (in air)
°C calibration	Automatic 1 or 2 points at 0.0°C and 50.0°C
Altitude Compensation	0 to 1900 m (6230') with 100 m resolution
Salinity Compensation	0 to 40 g/L with 1 g/L resolution
Temp Compensation	Automatic from 0 to 50°C (32 to 122°F)
Probe	HI 76407/2 with 2 m (6.6') cable
Logging Interval	1, 15, 30 seconds or 1, 2, 5, 15, 30, 60, 120, 180 minutes
Computer Interface	RS232C (opto-isolated)
Power Supply	12VDC (CSA, UL & CE approved)
Environment	0 to 50°C (32 to 122°F); 95% RH
Dimensions/Weight	230 x 170 x 70 mm (9.1 x 6.7 x 2.7")/1 kg (2.2 lb.)

LP 2000

The LP 2000 bench-top turbidity meter is an essential tool for laboratory water analysis requirements. With its extended range, you can measure from 0 to 50 FTUs and from 50 to 1,000 FTUs. For a time study, the LP 2000-11 has a real-time clock and can record 500 separate measurements. Information can be transferred to your computer for study and storage. Hanna's LP 2000 turbidity meter is the clear choice for the laboratory professional.

Ordering Information

LP 2000 is supplied complete with measurement cuvet and cap, 12 VDC adapter, HI 93703-0 and HI 93703-10 calibration solutions, and instruction manual.
LP 2000-11 is supplied complete with RS232, measurement cuvet and cap, 12 VDC adapter, HI 93703-0, HI 93703-10, and HI 93703-5 calibration solutions, and instruction manual.

Accessories

HI 93703-0 . . . . .AMCO-EPA-1 cal. sol. @ 0 FTU (30 mL)
HI 93703-10 . . .AMCO-EPA-1 cal. sol. @ 10 FTU (30 mL)
HI 93703-5 . . .AMCO-EPA-1 cal. sol. @ 500 FTU (30 mL) for LP 2000-11 only
HI 731321 . . . . . .Measurement cuvets
HI 731318 . . . . . .Tissue for wiping cuvets
HI 92000 . . . . . .Windows® compatible software
HI 920010 . . . . . .PC connection cable

Specifications	LP 2000	LP 2000-11
Range	0.00 to 50.00 FTU/50 to 1000 FTU*	
Accuracy	±0.5FTU or ±5% of reading (whichever is greater	
Resolution	0.01/1 FTU*	
Typical EMC Dev.	±0.2 F.S.	
Calibration	2 points (0 FTU & 10 FTU)	3 (0 FTU, 10 FTU & 500 FTU)
Light Source	High emmision infrared LED	
Light Life	Life of the instrument	
Light Detector	Silicon Photocell	
Logging Capabilities	-	500 measurements
Computer Interface	-	RS232, w/optional HI 92000 software
Real Time Clock	-	Yes
Power Supply	12VDC adapter (included)	
Environment	0 to 50°C (32 to 122°F); 95% RH	
Dimensions/Weight	230 x 170 x 70 mm (9.1 x 6.7 x 2.7")/600 g (1.3 lb)	

* FTU (Formazine Turbidity Unit) = 1 NTU (Nephelometric Turbidity Unit)

C 200

C 200

The C 200 measures 36 different parameters and is perhaps the most versatile water quality photometer available. The C 200 can be powered in the laboratory by its 12 VDC adapter or in the field by inexpensive 9V batteries. Simple to use: select the test from the menu on the front panel, enter the test code, zero, and read the results. Best of all, the reagents cost is less per test than you would expect. The C 200 is a complete, reliable analytical system for the most important water quality parameters. Other photometers in single and application specific combinations are also available.

Ordering Information

C 200 is supplied with 3 cuvets, caps, 2 x 9V battery, 12 VDC power adapter, and instruction manual.

Accessories

HI 731321 . . . . . .Measurement cuvets (4 pcs)
HI 731318 . . . . . .Tissue for wiping cuvets (4 pcs)
HI 7040L . . . . . .Zero oxygen solution, 460 mL
HI 93703-50 . . . . . .Cuvet cleaning solution

Specifications

Test	Range	Method	Reagent Code
Aluminum	0.00 to 1.00 mg/L	Aluminon	HI 93712-01
Ammonia MR	0.00 to 9.99 mg/L	Nessler	HI 93715-01
Ammonia LR	0.00 to 3.00 mg/L	Nessler	HI 93700-01
Bromine	0.00 to 8.00 mg/L	DPD	HI 93716-01
Free Chlorine *	0.00 to 2.50 mg/L	DPD	HI 93701-01
Total Chlorine *	0.00 to 3.50 mg/L	DPD	HI 93711-01
Chlorine Dioxide	0.00 to 2.00 mg/L	Chlorophenol Red	HI 93738-01
Chromium VI HR	0 to 1000 µg/L	Diphenylcarbohydrazide	HI 93723-01
Chromium VI LR	0 to 300 µg/L	Diphenylcarbohydrazide	HI 93749-01
Color	0 to 500 PCU	Chloroplatinate	—
Copper HR	0.00 to 5.00 mg/L	Bicinchoninate	HI 93702-01
Copper LR	0 to 990 µg/L	Bicinchoninate	HI 93747-01
Cyanide	0.000 to 0.200 mg/L	Pyridine-Pyrazalone	HI 93714-01
Cyanuric Acid	0 to 80 mg/L	Turbidimetric	HI 93722-01
Fluoride	0.00 to 2.00 mg/L	SPADNS	HI 93729-01
Ca Hardness	0.00 to 2.70 mg/L	Calmagite	HI 93720-01
Mg Hardness	0.00 to 2.00 mg/L	EDTA	HI 93719-01
Hydrazine	0 to 400 µg/L	p-Dimethylaminobenzaldehyde	HI 93704-01
Iodine	0.0 to 12.5 mg/L	DPD	HI 93718-01
Iron HR	0.00 to 5.00 mg/L	Phenantroline	HI 93721-01
Iron LR	0 to 400 µg/L	TPTZ	HI 93746-01
Manganese HR	0.0 to 20.0 mg/L	Periodate Oxidation	HI 93709-01
Manganese LR	0 to 300 µg/L	PAN	HI 93748-01
Molybdenum	0.0 to 40.0 mg/L	Mercaptoacetic Acid	HI 93730-01
Nickel HR	0.00 to 7.00 g/L	Photometric	HI 93726-01
Nitrate	0.0 to 30.0 mg/L	Cadmium Reduction	HI 93728-01
Nitrite HR	0 to 150 mg/L	Ferrous Sulfate	HI 93708-01
Nitrite LR	0.00 to 0.35 mg/L	Diazotization	HI 93707-01
Dissolved Oxygen	0.0 to 10.0 mg/L	Winkler	HI 93732-01
pH	6.5 to 8.5 pH	Phenol Red	HI 93710-01
Phosphate HR	0.0 to 30.0 mg/L	Amino Acid	HI 93717-01
Phosphate LR	0.00 to 2.50 mg/L	Ascorbic Acid	HI 93713-01
Phosphorus	0.0 to 15.0 mg/L	Amino Acid	HI 93706-01
Silica	0.00 to 2.00 mg/L	Heteropoly blue	HI 93705-01
Silver	0.000 to 1.000 mg/L	PAN	HI 93737-01
Zinc	0.00 to 3.00 mg/L	Zincon	HI 93731-01

Reagents are available in quantities of 100 and 300 tests

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HANNA instruments
Laboratory & Industrial Division

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