



## HQ411d Benchtop pH/mV Meter

Product #: HQ411D



Designed for your water applications, the Hach HQ411d laboratory meter is an advanced meter that takes the guesswork out of measurements. HQd™ meters connect with IntelliCAL probes that automatically recognize the testing parameter, calibration history, and method settings to minimize errors and setup time.

### Have confidence in your readings!

High quality lab instruments digitally deliver reliable measuring results with the aid of intelligent electrodes: Digital IntelliCAL electrodes always measure correctly due to their integrated calibration. IntelliCAL electrodes are recognized automatically and are interchangeable. This principle of mix + match makes sure you measure as reliable, flexible and simple as already known from the portable HQd range.

### Optimal handling for every user

HQD lab instruments are easy to use thanks to the intuitively understandable user interface enabling one-touch measurements. Measuring intervals can be defined by the user. Progress of stabilization is automatically indicated on the display; readings are automatically logged.

### Immediately understandable and easy to read

Large, illuminated graphic displays are easy to read, even in difficult light conditions. The instruments' key pads are icon-based and immediately understandable. User interface and operating instructions are available in more than 10 European languages.

### Complete GLP compliant communication and documentation

All the necessary information about each reading is automatically saved. A USB port is integrated into the instruments. PC, printer and keyboard can be connected with all read and write functions.

### Reliable O<sub>2</sub> results with minimum effort

Luminescence-based LDO technology is an established Hach Lange innovation launched in 2003. The IntelliCAL LDO is a drift-free sensor delivering error-free and accurate results at high and low O<sub>2</sub> concentrations with minimum effort; no calibration and no replacement of electrolyte. Since it was launched, LDO has proven itself everywhere O<sub>2</sub> is measured!

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## Specifications

AC and USB Operation:	#
Automatic Buffer Recognition:	Color-coded: 4.01, 7.00, 10.01 pH; IUPAC: 1.679, 4.005, 7.000, 10.012, 12.45 DIN: 1.09, 4.65, 9323 User-defined custom buffer sets
Battery Requirements:	4, AA
Benchtop:	#
Cable resistance correction:	Digital - not needed
Calibration Curves Display:	Calibration summary data logged and displayed
Calibration Intervals/Alerts/Reminder:	2 hours to 7 days

Compliance Certifications:	CE.WEEE
Custom Calibration Standards:	User-defined standard sets
Data Export:	Download via USB connection to PC or flash stick. Automatically transfer entire data log or as readings are taken.
Data Memory:	500 results
Data Storage:	GLP/ISO compliant reading data stored with calibration details. Calibration details and check standard readings documented as events in data log. Automatically store in "press to read" mode and interval measurement mode. Manually store in "continuous read" mode.
Digital (intelligent) electrode inputs:	1 channel
Dimensions (H x W x D):	89 mm x 173 mm x 234 mm
Display:	Display readings from one pH or ORP/Redox electrode: pH: pH, mV, temperature ORP/Redox: mV, temperature
Display Lock Function:	Continuous measurement or "press to read" mode available with averaging function for LDO measurement.
Display Type:	240 x 160 pixel Display readings from one or two probes Simultaneous readings from two probes pH: pH, mV, temperature Conductivity: Conductivity, TDS, salinity, resistivity, temperature LDO: dissolved oxygen, pressure, temperature ORP/Redox: mV, temperature Sodium: Sodium, mV, temperature
Fixed Buffer Selection:	IUPAC standards (DIN 19266) or Technical buffer (DIN 19267) or 4-7-10 series or user defined
GLP Features:	#
Inputs:	1
Interface Languages:	13**
Internal Data Storage:	500
IP Rating:	IP54 (Resistant to spray of water; Dust-proof)
ISE Direct Measurement Range:	No
ISE Electrode Calibration:	No
Languages:	English, French, German, Italian, Spanish, Danish, Dutch, Polish, Portuguese, Turkish, Swedish, Czech, Russian
Length:	234 mm
Measuring Range ORP:	-1500 to 1500 mV
mV Accuracy:	± 0.1 mV
mV Measurement at Stable Reading:	5 stabilization settings
mV Measurement Range:	-1500 to 1500 mV
mV Resolution:	0.1 mV
Operating Error Messages:	Full text messages
Operating Humidity:	90 % relative humidity (non-condensing)
Operating Interface:	Keypad
Operating Temperature:	5 to 45 °C
ORP Electrode Calibration:	Predefined ORP standards (including Zobell's solution)
Output:	USB to PC / flash stick
Parameter:	pH, mV, ORP, Temp
pH Accuracy:	± 0.002 pH
pH Measurement:	0 to 14 pH
pH Measurement at stable reading:	5 stabilization settings

pH Resolution:	Selectable between 0.001 0.1 pH
Power Requirements (Voltage):	7 V
Printer:	Optional accessory
Resolution:	0.1/ 0.01/ 0.001
Sample Temperature:	1
Temperature Compensation:	Off, automatic, and manual (auto correction is parameter dependent)
Warranty:	3 years
Water Resistance:	Meter Housing: Resistance to spray of water; dust-proof (IP54)
Weight:	1.87 lbs. (0.850 kg)

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## What's in the box?

Includes HQ411d Meter, Basic User Manual, Documentation CD, Quick Reference Guide, 4 AA Batteries

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## Required Accessories

- IntelliCAL™ PHC101 Standard Gel Filled pH Electrode, 1 m cable (Item PHC10101)
- IntelliCAL™ PHC101 Standard Gel Filled pH Electrode, 3 m cable (Item PHC10103)
- IntelliCAL™ PHC301 Standard Refillable pH Electrode, 1 meter cable (Item PHC30101)
- IntelliCAL™ PHC301 Standard Refillable pH Electrode, 3 meter cable (Item PHC30103)
- IntelliCAL™ PHC281 pH Ultra Refillable pH Electrode, 1 m cable (Item PHC28101)
- IntelliCAL™ PHC281 pH Ultra Refillable pH Electrode, 3 m cable (Item PHC28103)
- IntelliCAL™ MTC101 Standard Gel Filled ORP Electrode, 1 meter cable (Item MTC10101)
- IntelliCAL™ MTC101 Standard Gel Filled ORP Electrode, 3 meter cable (Item MTC10103)
- IntelliCAL™ MTC301 Standard Refillable ORP Electrode, 1 meter cable (Item MTC30101)
- IntelliCAL™ MTC301 Standard Refillable ORP Electrode, 3 meter cable (Item MTC30103)
- IntelliCAL™ PHC201 Standard Gel Filled pH Electrode, 1 meter cable (Item PHC20101)
- IntelliCAL™ PHC201 Standard Gel Filled pH Electrode, 3 meter cable (Item PHC20103)