

HALO™



HI11312 HALO™
pH Electrode with Bluetooth®
Smart Technology



www.hannanorden.com

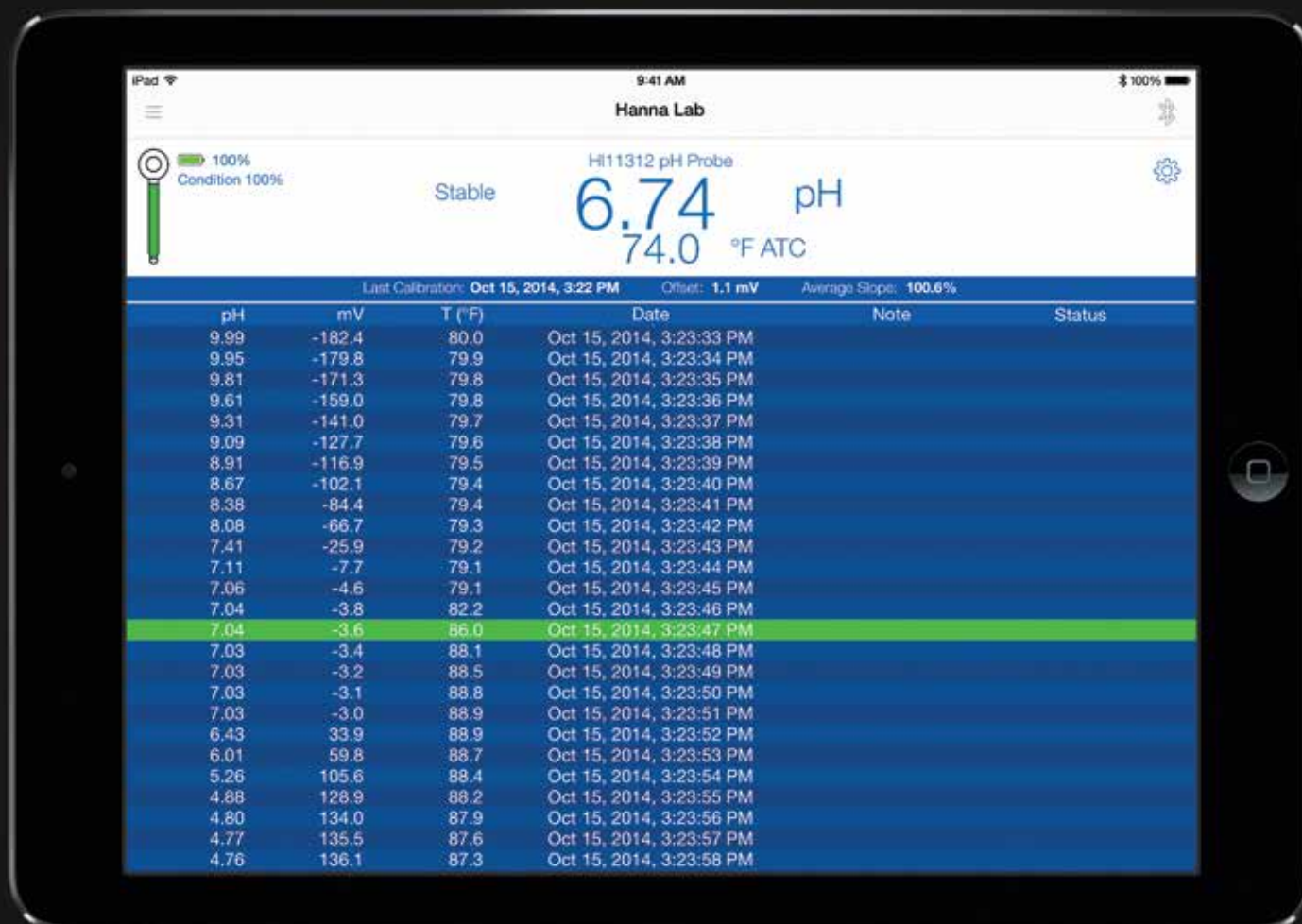


One press connect

Easily connect to the Hanna Lab App at the press of a button via Bluetooth® wireless technology (10 m range (33')).

The world's first pH electrode with Bluetooth® Smart technology

HALO™ is the world's first professional pH probe with Bluetooth® Smart technology (Bluetooth® 4.0). It is a high quality, double junction, refillable glass pH probe with a built-in temperature sensor that can be used virtually anywhere: in the field, laboratory or classroom. Its flexibility and ease of use will revolutionize the way pH is measured.

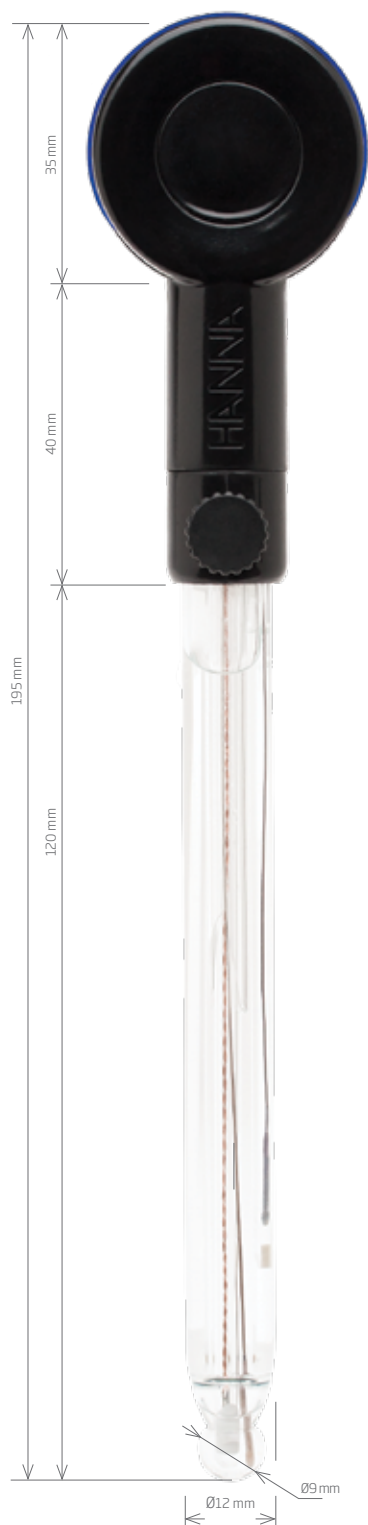


Hanna Lab App – Free from the App StoreSM

Connecting a HALO™ probe to the Hanna Lab App is simple. Measurement and logging of pH and temperature at one second intervals start as soon as the probe is connected.

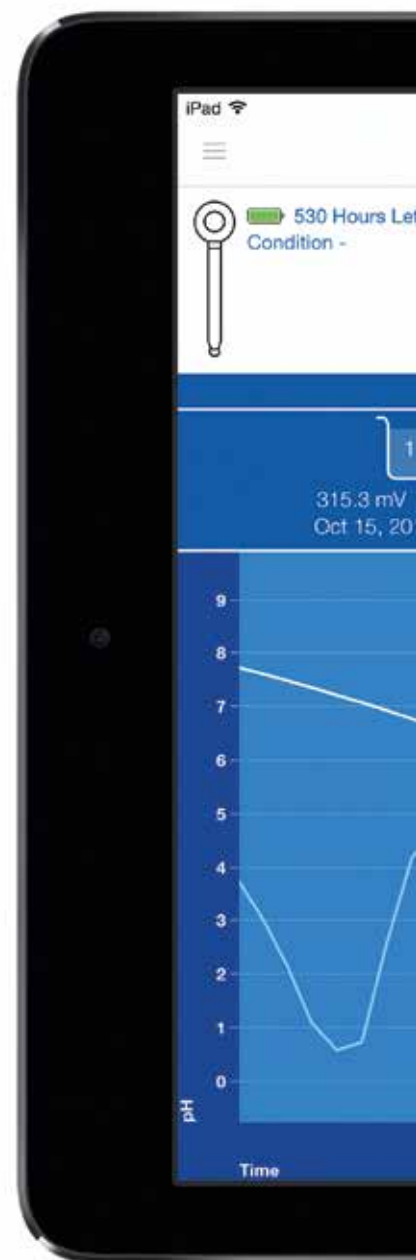
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HALO™



HALO™ features

- Refillable glass pH electrode
- Double junction reference design
- Integrated temperature sensor
 - Ensures the calibration and measurement is automatically temperature compensated, thus eliminating error
- Wide pH (0-13) and temperature (-5 to 80°C) range
- Clear the clutter
 - Data is wirelessly transmitted to an iPad® running the Hanna Lab App via Bluetooth® Smart technology. HALO™ provides up to 500 hours of battery life
- One button sample tagging
 - Pressing either the button on the HALO™ pH probe or the probe icon in the Hanna Lab App will tag sample data for easy reference
- Calibration is stored
 - HALO™ stores calibration information; no additional calibration is needed when switching to another iPad
- Battery condition
 - The measurement screen of the Hanna Lab App displays the name, battery life and condition of the HALO™ probe



Status indicator

Visible from a distance, the LED halo light indicates the probe is active and transmitting.



Easy to replace battery

The HALO's CR2032 lithium ion battery is easily replaceable and lasts for approximately 500 hours.



The first app that turns an iPad® into a full-featured pH meter!



iPad not included.



Settings

Tap the gear icon in the top-right corner of the measurement screen to access the Probe Settings menu for the following options:

- **Measurement**
 - Measurement mode: pH or mV
 - Measurement resolution
 - Temperature compensation: automatic or manual
 - Temperature units
- **Display**
 - Good Laboratory Practice (GLP): on screen calibration data
 - View: basic, table or graph
 - Graph display: pH (mV) and/or temperature
 - Stability criteria
- **Calibration**
 - Perform calibration
 - Calibration buffers: Hanna or NIST
 - Calibration reminder
- **Logging**
 - Save
 - Share
- **Alarms**
 - pH (mV) and temperature

Hanna Lab App

pH Meter Application for use with HALO™

- Connects to HALO™ via Bluetooth® 4.0
- Up to five-point pH calibration with seven standard pH buffers available
- Calibration reminder
 - Alerts you when HALO™ needs calibration
- Real-time data
 - Displays pH and temperature updated every second
- Basic GLP
 - Displays date and time of current calibration along with probe offset and average slope
- Full GLP
 - Displays date and time of current calibration, probe offset and average slope along with calibrated buffers, mV values, temperature and slopes between each buffer
- Fluid, dynamic graphing
 - Measurement can be displayed with tabulated data or as a graph. The graph axes may be expanded using the iPad's pinch and zoom technology for enhanced viewing
- Measurement alarms
 - Alerts you if the measurement threshold is exceeded
- One button sample tagging
 - Pressing either the probe icon in the Hanna Lab App or button on the HALO™ pH probe will tag sample data for easy reference
- Data-logging with custom annotations
 - Saved log files may be annotated with measurement specific information
 - Data is automatically saved every hour
- Four ways to save and share data:
 - All data since last auto save
 - Annotations only
 - All data within a timed interval
 - Annotations only within a timed interval
- Share data via email in CSV (comma-separated values) format
- Help and tutorials:
 - Demo probe mode to help explore features of the Hanna Lab App
 - General app information
 - General HALO™ information
 - pH tutorial
 - Maintenance tutorial
 - Contact information

The Hanna Lab App turns an iPad® into a full-featured pH meter when used with the Hanna HALO™ pH electrode with Bluetooth® Smart technology. Functions include calibration, measurement, data logging, graphing and data sharing. Measurement and logging of pH and temperature at one second intervals start as soon as the probe is connected. Measurements can be displayed alone on the display, with tabulated data or as a graph. The graph can be panned and zoomed with the iPad's pinch-to-zoom technology for enhanced viewing.

Readings that exceed user-defined alarm thresholds are highlighted in yellow on the measurement screen, graph and table. Readings that exceed the probe specifications are highlighted in red.

Readings are automatically saved to a history file every hour, limited only by the available memory on the iPad. Readings in specific time intervals can also be saved. Saved log files may be annotated with measurement specific information and also shared via email in CSV format.

The Hanna Lab App incorporates a probe calibration using up to five pH buffers that are automatically recognized and temperature corrected to 25.0°C during calibration.

Connecting a HALO™ probe to the Hanna Lab App is simple. Tap the Bluetooth® icon in the top-right corner to view all available HALO™ probes then press the button on your HALO™ probe. The blue halo on the probe will start blinking indicating that it is in discovery mode. Select the newly discovered HALO™ probe from the list of available probes. If a previously associated probe is discoverable when the app is opened, it will connect to that probe automatically.

Screen features



Easily accessible help menu



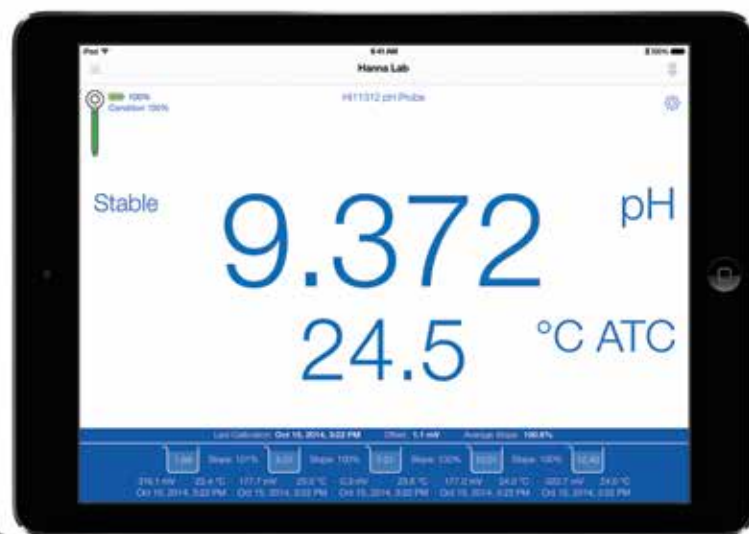
Clear and concise calibration screens



HALO™ continuously logs measurements and lets you retrieve the data you want, when you need it



Share data complete with custom annotations via email



iPad not included.

HI11312 HALO™ Specifications

Reference	double, Ag/AgCl
Junction	ceramic
Electrolyte	3.5M KCl
Range	0.00 to 13.00 pH ±420 mV -5.0 to 80.0°C (23.0 to 176.0°F)
Tip Shape	spheric
Outer Diameter (glass)	12 mm
Overall Length	195 mm
Environment	0.0 to 50.0°C (32.0 to 122.0°F), electronic module is not waterproof
Solution Temperature	-5.0 to 80.0°C (23.0 to 176.0°F)
Temperature Sensor	integrated
Body material	glass
Connection	Bluetooth® Smart (Bluetooth® 4.0), 10 m (33') range
Battery Type / Life	CR2032 3V lithium ion / approximately 500 hours

Hanna Lab App Specifications*

Range**	-2.000 to 16.000 pH ±800 mV -20.0 to 120.0°C (-4.0 to 248.0°F)
Resolution	0.1; 0.01; 0.001 pH 1; 0.1 mV 0.1°C (0.1°F)
Accuracy (@25°C/77°F)	±0.005 pH ±0.3 mV ±0.5°C (±1.0°F)
Calibration Points	up to five-point calibration with seven standard buffers (1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45 pH)
Temperature Compensation**	automatic from -5.0 to 100.0 °C; 23.0 to 212.0 °F
Compatibility/System Requirements	Hanna Lab App works with iPad 3 rd generation or newer (including iPad mini) with Bluetooth® 4.0 technology and iOS 7.1 or newer
Download Information	Hanna Lab App is free from the App Store™

*HALO™ required for measurement use. ** Limits will be reduced to actual probe/sensor limits.

ORDERING INFORMATION

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HALO™



Hanna Lab App 



iPad not included.



HI11312 HALO™ includes:



pH 4.01 buffer sachets



pH 7.01 buffer sachets



electrode cleaning
solution sachets



electrode storage
solution



electrode refilling solution



electrode refilling pipette



electrode storage
cap



battery



quality certificate



instruction sheet

HALO™ accessories



HI180-1 black mini stirrer



HI76405 electrode
holder with steel base

Electrode cleaning, storage,
calibration and filling solutions

HI700601P General purpose cleaning solution,
20 mL sachets (25)

HI70300M electrode storage solution,
230 mL bottle

HI7082 electrolyte refilling solution, 3.5M KCl,
30 mL bottle (4)

HI70004P pH 4.01 calibration solution,
20 mL sachets (25)

HI70007P pH 7.01 calibration solution,
20 mL sachets (25)

HI70010P pH 10.01 calibration solution,
20 mL sachets (25)

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