

HI83303

# Multiparameter Photometer

with Digital pH Electrode Input for Aquaculture

The HI83303 benchtop photometer measures 12 different key water quality parameters using 20 different methods. This photometer uses an LED, a narrow band interference filter, a focusing lens, and both a silicon photodetector for absorbance measurement and a reference detector to maintain a consistent light source to ensure accurate and repeatable photometric readings every time.

Made with the aquaculture industry in mind, the HI83303 is a comprehensive solution to maintaining optimal chemical and environmental conditions, preventing disease, and increasing production. The HI83303 measures vital parameters such as alkalinity, calcium, nitrite, and phosphate. Alkalinity plays a part in a dynamic relationship with pH and CO<sub>2</sub> concentrations, high alkalinity water lowers fluctuations in pH. The buffering capacity acts to store extra CO<sub>2</sub> essential for photosynthesis in ponds to produce oxygen. Maintaining calcium at certain levels is vital to proper fish growth and development. Excessive nitrite can be toxic to fish. When nitrite interacts with hemoglobin the iron becomes oxidized and blood cells can no longer carry oxygen. Phosphate is essential to plant growth; too much phosphate in an aquaculture system can contribute to algal blooms decreasing dissolved oxygen vital for a successful ecosystem.

## • Advanced optical system

- Innovative optical design that utilizes a reference detector and focusing lens to eliminate errors from changes in the light source and from imperfections in the glass cuvette

## • Backlit 128 x 64 Pixel Graphic LCD Display

- Backlit graphic display allows for easy viewing in low light conditions
- The 128 x 64 Pixel LCD allows for a simplified user interface with virtual keys and on-screen help to guide the user through use of the meter

## • Built-in Reaction Timer for Photometric Measurements

- The measurement is taken after the countdown timer expires.
- Countdown timer ensures that all readings are taken at the appropriate reaction intervals regardless of user for better consistency in measurements



Application Designed Photometers



## • Absorbance mode

- Hanna's exclusive CAL Check™ cuvettes for validation of light source and detector
- Allows for the user to plot concentration versus absorbance for a specific wavelength for use with user supplied chemistry or for teaching principles of photometry

## • Units of Measure

- Appropriate unit of measure along with chemical form is displayed along with reading

## • Result Conversion

- Automatically convert readings to other chemical forms with the touch of a button

## • Cuvette Cover

- Aids in preventing stray light from affecting measurements

## • Digital pH Electrode Input

- Measure pH and temperature with a single probe
- Good Laboratory Practice (GLP) to track calibration information including date, time, buffers used, offset and slope for traceability
- pH CAL Check™ alerts user to potential problems during the calibration process
- Space saving having a pH meter and photometer built into one meter

## • Battery Status Indicator

- Indicates the amount of battery life left

## • Data Logging

- Up to 1000 photometric and pH readings can be stored by simply pressing the dedicated LOG button. Logged readings are just as easily recalled by pressing the RCL button
- Sample ID and User ID information can be added to a logged reading using the alphanumeric keypad

## • Connectivity

- Logged readings can be quickly and easily transferred to a flash drive using the USB-A host port or to a computer using the micro USB-B port
- Data is exported as a .CSV file for use with common spreadsheet programs

## • Rechargeable Battery

- Li-polymer rechargeable battery lasts for 500 measurements or 50 hours of pH measurement

## • Error Messages

- Photometric error messages
- pH calibration messages include clean electrode, check buffer and check probe



HI83303-11

| Parameter                         | Range   | Resolution | Accuracy                           | Wavelength | Method  | Reagent Code   |
|-----------------------------------|---|------------|------------------------------------|------------|---|--|
| Alkalinity                        | 0 to 500 mg/L (as CaCO <sub>3</sub> )   | 1 mg/L     | ±5 mg/L ±5% of reading at 25 °C    | 610 nm     | Bromocresol Green   | <b>HI775-26</b> Reagents for 25 tests  |
| Alkalinity, Marine                | 0 to 300 mg/L (as CaCO <sub>3</sub> )   | 1 mg/L     | ±5 mg/L ±5% of reading at 25 °C    | 610 nm     | Bromocresol Green   | <b>HI755-26</b> Reagents for 25 tests  |
| Ammonia Low Range                 | 0.00 to 3.00 mg/L (as NH <sub>3</sub> -N)   | 0.01 mg/L  | ±0.04 mg/L ±4% of reading at 25 °C | 420 nm     | Adaptation of the ASTM Manual of Water and Environmental Technology, D1426, Nessler Method                                  | <b>HI93700-01</b> Reagents for 100 tests<br><b>HI93700-03</b> Reagents for 300 tests   |
| Ammonia Medium Range              | 0.00 to 10.00 mg/L (as NH <sub>3</sub> -N)  | 0.01 mg/L  | ±0.05 mg/L ±5% of reading at 25 °C | 420 nm     | Adaptation of the ASTM Manual of Water and Environmental Technology, D1426, Nessler Method                                  | <b>HI93715-01</b> Reagents for 100 tests<br><b>HI93715-03</b> Reagents for 300 tests   |
| Ammonia High Range                | 0.0 to 100.0 mg/L (as NH <sub>3</sub> -N)   | 0.1 mg/L   | ±0.5 mg/L ±5% of reading at 25 °C  | 420 nm     | Adaptation of the ASTM Manual of Water and Environmental Technology, D1426, Nessler Method                                  | <b>HI93733-01</b> Reagents for 100 tests<br><b>HI93733-03</b> Reagents for 300 tests   |
| Calcium                           | 0 to 400 mg/L (as Ca <sup>2+</sup> )  | 1 mg/L     | ±10 mg/L ±5% of reading at 25 °C   | 466 nm     | Adaptation of the Oxalate Method  | <b>HI937521-01</b> Reagents for 50 tests<br><b>HI937521-03</b> Reagents for 150 tests  |
| Calcium, Marine                   | 200 to 600 mg/L (as Ca <sup>2+</sup> )  | 1 mg/L     | ±6% of reading at 25 °C            | 610 nm     | Adaptation of the Zincon Method   | <b>HI758-26</b> Reagents for 25 tests  |
| Chlorine, Free                    | 0.00 to 5.00 mg/L (as Cl <sub>2</sub> )   | 0.01 mg/L  | ±0.03 mg/L ±3% of reading at 25 °C | 525 nm     | Adaptation of the EPA DPD Method 330.5  | <b>HI93701-F</b> Reagents for 300 tests (liquid)<br><b>HI93701-01</b> Reagents for 100 tests (powder)<br><b>HI93701-03</b> Reagents for 300 tests (powder)             |
| Chlorine, Total                   | 0.00 to 5.00 mg/L (as Cl <sub>2</sub> )   | 0.01 mg/L  | ±0.03 mg/L ±3% of reading at 25 °C | 525 nm     | Adaptation of the EPA DPD Method 330.5  | <b>HI93701-T</b> Reagents for 300 tests (liquid)<br><b>HI93711-01</b> Reagents for 100 total tests (powder)<br><b>HI93711-03</b> Reagents for 300 total tests (powder) |
| Copper Low Range                  | 0.000 to 1.500mg/L (as Cu <sup>2+</sup> )   | 0.001mg/L  | ±0.010mg/L ±5% of reading at 25 °C | 575 nm     | Adaptation of the EPA Method  | <b>HI95747-01</b> Reagents for 100 tests<br><b>HI95747-03</b> Reagents for 300 tests   |
| Copper High Range                 | 0.00 to 5.00 mg/L (as Cu <sup>2+</sup> )  | 0.01 mg/L  | ±0.02 mg/L ±4% of reading at 25 °C | 575 nm     | Adaptation of the EPA Method  | <b>HI93702-01</b> Reagents for 100 tests<br><b>HI93702-03</b> Reagents for 300 tests   |
| Nitrate                           | 0.0 to 30.0 mg/L (as NO <sub>3</sub> <sup>-</sup> -N)   | 0.1 mg/L   | ±0.5 mg/L ±10% of reading at 25 °C | 525 nm     | Adaptation of the Cadmium Reduction Method  | <b>HI93728-01</b> Reagents for 100 tests<br><b>HI93728-03</b> Reagents for 300 tests   |
| Nitrite, Marine Ultra Low Range   | 0 to 200 µg/L (as NO <sub>2</sub> <sup>-</sup> -N)  | 1 µg/L     | ±10 µg/L ±4% of reading at 25 °C   | 466 nm     | Adaptation of the EPA Diazotization Method 354.1  | <b>HI764-25</b> Reagents for 25 tests  |
| Nitrite Low Range                 | 0 to 600 µg/L (as NO <sub>2</sub> <sup>-</sup> -N)  | 1 µg/L     | ±20 µg/L ±4% of reading at 25 °C   | 466 nm     | Adaptation of the EPA Diazotization Method 354.1  | <b>HI93707-01</b> Reagents for 100 tests<br><b>HI93707-03</b> Reagents for 300 tests   |
| Nitrite High Range                | 0 to 150 mg/L (as NO <sub>2</sub> <sup>-</sup> )  | 1 mg/L     | ±4 mg/L ±4% of reading at 25 °C    | 575 nm     | Adaptation of the Ferrous Sulfate Method  | <b>HI93708-01</b> Reagents for 100 tests<br><b>HI93708-03</b> Reagents for 300 tests   |
| Oxygen, Dissolved                 | 0.0 to 10.0 mg/L (as O <sub>2</sub> )   | 0.1 mg/L   | ±0.4 mg/L ±3% of reading at 25 °C  | 420 nm     | Adaptation of the Standard Methods for the Examination of Water and Wastewater, 18th Edition, Azide Modified Winkler Method | <b>HI93732-01</b> Reagents for 100 tests<br><b>HI93732-03</b> Reagents for 300 tests   |
| pH                                | 6.5 to 8.5 pH   | 0.1 pH     | ±0.1 pH at 25 °C                   | 525 nm     | Adaptation of the Phenol Red Method   | <b>HI93710-01</b> Reagents for 100 pH tests<br><b>HI93710-03</b> Reagents for 300 pH tests   |
| Phosphate, Marine Ultra Low Range | 0 to 200 µg/L (as P)  | 1 µg/L     | ±5 µg/L ±5% of reading at 25 °C    | 610 nm     | Adaptation of Standard Methods for the Examination of Water and Wastewater, 20th Edition, Ascorbic Acid Method              | <b>HI736-25</b> Reagents for 25 tests  |
| Phosphate Low Range               | 0.00 to 2.50 mg/L (as PO <sub>4</sub> <sup>3-</sup> )   | 0.01 mg/L  | ±0.04 mg/L ±4% of reading at 25 °C | 610 nm     | Adaptation of the Ascorbic Acid Method  | <b>HI93713-01</b> Reagents for 100 tests<br><b>HI93713-03</b> Reagents for 300 tests   |
| Phosphate High Range              | 0.0 to 30.0 mg/L (as PO <sub>4</sub> <sup>3-</sup> )  | 0.1 mg/L   | ±1.0 mg/L ±4% of reading at 25 °C  | 525 nm     | Adaptation of the Standard Methods for the Examination of Water and Wastewater, 18th Edition, Amino Acid Method             | <b>HI93717-01</b> Reagents for 100 tests<br><b>HI93717-03</b> Reagents for 300 tests   |
| <b>Ordering Information</b>       | <b>HI83303-01</b> (115V) and <b>HI83303-02</b> (230V) is supplied with sample cuvette (4 pcs.), sample cuvette cap (4 pcs.), cloth for wiping cuvettes, scissors, USB cable, 5 Vdc power adapter, 60 mL glass bottle, instrument quality certificate, and Instruction manual. |            |                                    |            |   |  |
| <b>Standards</b>                  | <b>HI83303-11</b> CAL Check Cuvette Kit for HI83303   |            |                                    |            |   |  |