

HI83305

Multiparameter Photometer

with Digital pH Electrode Input for Boilers and Cooling Towers

The HI83305 benchtop photometer measures 18 different key water quality parameters using 32 different methods. This photometer features an innovative optical system that use 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.

Specially designed for use with boilers and cooling towers, the HI83305 is a comprehensive way to maintain precise water conditions within these systems. Problems such as corrosion, deposition, and microbial growth can occur if these key parameters, such as oxygen scavengers and silica, aren't maintained. Oxygen scavengers are added to remove residual dissolved oxygen in boiler feed water that can cause corrosion in a steam generating plant. It is important that levels of oxygen scavengers be routinely checked to prevent corrosion and ensure that equipment is working efficiently. Boiler water maintenance is necessary to prevent or control deposit formation as seen with silica. Silica contamination can reduce system efficiency and increase maintenance of equipment due to scaling.

• 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



• 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

• 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

• Battery Status Indicator

- Indicates the amount of battery life left

• Error Messages

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



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- 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



Parameter	Range	Resolution	Accuracy (@ 25°C)	LED (λ nm) with Narrow Band Interference Filter	Method	Reagent Code
Aluminum	0.00 to 1.00 mg/L (as Al ³⁺)	0.01 mg/L	±0.04 mg/L ±4% of reading	@ 525 nm	aluminon	HI93712-01 100 tests
Ammonia LR	0.00 to 3.00 mg/L (as NH ₃ -N)	0.01 mg/L	±0.04 mg/L ±4% of reading	@ 420 nm	Nessler	HI93700-01 100 tests
Ammonia MR	0.00 to 10.00 mg/L (as NH ₃ -N)	0.01 mg/L	±0.05 mg/L ±5% of reading	@ 420 nm	Nessler	HI93715-01 100 tests
Ammonia HR	0.0 to 100.0 mg/L (as NH ₃ -N)	0.1 mg/L	±0.5 mg/L ±5% of reading	@ 420 nm	Nessler	HI93733-01 100 tests
Bromine	0.00 to 8.00 mg/L (as Br ₂)	0.01 mg/L	±0.08 mg/L ±3% of reading	@ 525 nm	DPD	HI93716-01 100 tests
Chlorine Dioxide	0.00 to 2.00 mg/L (as ClO ₂)	0.01 mg/L	±0.10 mg/L ±5% of reading	@ 575 nm	chlorophenol red	HI93738-01 100 tests
Chlorine Dioxide, Rapid	0.00 to 2.00 mg/L (as ClO ₂)	0.01 mg/L	±0.10 mg/L ±5% of reading	@ 525 nm	DPD-Glycine	HI96779-01 100 tests
Chlorine, Free	0.00 to 5.00 mg/L (as Cl ₂)	0.01 mg/L	±0.03 mg/L ±3% of reading	@ 525 nm	DPD	HI93701-01 100 tests
Chlorine, Total	0.00 to 5.00 mg/L (as Cl ⁻)	0.01 mg/L	±0.03 mg/L ±3% of reading	@ 525 nm	DPD	HI93711-01 100 tests
Chromium(VI) LR	0 to 300 µg/L (as Cr ⁶⁺)	1 µg/L	±10 µg/L ±4% of reading	@ 525 nm	diphenylcarbohydrazide	HI93749-01 100 tests
Chromium(VI) HR	0 to 1000 µg/L (as Cr ⁶⁺)	1 µg/L	±5 µg/L ±4% of reading	@ 525 nm	diphenylcarbohydrazide	HI93723-01 100 tests
Copper LR	0.000 to 1.500 mg/L (as Cu ²⁺)	0.001 mg/L	±0.010 mg/L ±5% of reading	@ 575 nm	bicinchoninate	HI95747-01 100 tests
Copper HR	0.00 to 5.00 mg/L (as Cu ²⁺)	0.01 mg/L	±0.02 mg/L ±4% of reading	@ 575 nm	bicinchoninate	HI93702-01 100 tests
Hydrazine	0 to 400 µg/L (as N ₂ H ₄)	1 µg/L	±4% of full scale reading	@ 466 nm	p-Dimethylaminobenzaldehyde	HI93704-01 100 tests
Iron (II) (ferrous)	0.00 to 6.00 mg/L Fe ²⁺	0.01 mg/L	±0.10 mg/L ±2% of reading	@ 525 nm	phenanthroline	HI96776-01 100 tests
Iron LR	0.000 to 1.600 mg/L (as Fe)	0.001 mg/L	±0.01 mg/L ±8% of reading	@ 575 nm	TPTZ	HI93746-01 50 tests
Iron HR	0.00 to 5.00 mg/L (as Fe)	0.01 mg/L	±0.04 mg/L ±2% of reading	@ 525 nm	phenanthroline	HI93721-01 100 tests
Molybdenum	0.0 to 40.0 mg/L (as Mo ⁶⁺)	0.1 mg/L	±0.3 mg/L ±5% of reading	@ 420 nm	mercaptoacetic acid	HI93730-01 100 tests
Nitrate	0.0 to 30.0 mg/L (as NO ₃ ⁻ -N)	0.1 mg/L	±0.5 mg/L ±10% of reading	@ 525 nm	cadmium reduction	HI93728-01 100 tests
Nitrite LR	0 to 600 µg/L (as NO ₂ ⁻ -N)	1 µg/L	±20 µg/L ±4% of reading	@ 466 nm	diazotization	HI93707-01 100 tests
Nitrite HR	0 to 150 mg/L (as NO ₂ ⁻ -N)	1 mg/L	±4 mg/L ±4% of reading	@ 575 nm	ferrous sulfate	HI93708-01 100 tests
Oxygen, Dissolved	0.0 to 10.0 mg/L (as O ₂)	0.1 mg/L	±0.4 mg/L ±3% of reading	@ 420 nm	Winkler	HI93732-01 100 tests
Oxygen Scavengers	0.00 to 1.50 mg/L (as Carbohydrazide)	0.01 mg/L	±0.02 µg/L ±3% of reading	@ 575 nm	iron reduction	HI96773-01 100 tests
Oxygen Scavengers	0 to 1000 µg/L (as DEHA)	1 µg/L	±5 µg/L ±5% of reading	@ 575 nm	iron reduction	HI96773-01 100 tests
Oxygen Scavengers	0.00 to 2.50 mg/L (as Hydroquinone)	0.01 mg/L	±0.04 µg/L ±3% of reading	@ 575 nm	iron reduction	HI96773-01 100 tests
Oxygen Scavengers	0.00 to 4.50 mg/L (as Iso-ascorbic acid)	0.01 mg/L	±0.03 µg/L ±3% of reading	@ 575 nm	iron reduction	HI96773-01 100 tests
pH	6.5 to 8.5 pH	0.1 pH	±0.1 pH	@ 525 nm	phenol red	HI93710-01 100 tests
Phosphate LR	0.00 to 2.50 mg/L (ppm)	0.01 mg/L	±0.04 mg/L ±4% of reading	@ 610 nm	ascorbic acid	HI93713-01 100 tests
Phosphate HR	0.0 to 30.0 mg/L (as PO ₄ ³⁻)	0.1 mg/L	±1 mg/L ±4% of reading	@ 525 nm	amino acid	HI93717-01 100 tests
Silica LR	0.00 to 2.00 mg/L (as SiO ₂)	0.01 mg/L	±0.03 mg/L ±3% of reading	@ 610 nm	heteropoly blue	HI93705-01 100 tests
Silica HR	0 to 200 mg/L (as SiO ₂)	1 mg/L	±1 mg/L ±5% of reading	@ 466 nm	molybdosilicate	HI96770-01 100 tests
Zinc	0.00 to 3.00 mg/L (as Zn)	0.01 mg/L	±0.03 mg/L ±3% of reading	@ 575 nm	zincon	HI93731-01 100 tests
Ordering Information	HI83305-01 (115V) and HI83305-02 (230V) is supplied with sample cuvettes and caps (4 ea.), cloth for wiping cuvettes, USB to micro USB cable connector, power adapter, instrument quality certificate, and instruction manual.					
Standards	HI83305-11 CAL Check Cuvette Kit for HI83305					