HI83300

Multiparameter Photometer

with Digital pH Electrode Input for Laboratories

Application Designed Photometers

HI83300 is a compact, multiparameter photometer for use in the lab or in the field. The meter is one of the most advanced photometers available with an 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. This meter has 60 different programmed methods measuring 37 key water quality parameters and also offers an absorbance measurement mode for performance verification and for users that would like to develop their own concentration versus absorbance curves.

To save valuable laboratory benchtop space, the HI83300 doubles as a professional pH meter with its digital pH/temperature electrode input. Now one meter can be used for both photometric and pH measurements.

- 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
- 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
- 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 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


HI83300-11

Parameter	Range	Resolution	Accuracy	LED (λ nm) with Narrow Band Interference Filter	Method
Alkalinity	0 to 500 mg/L (as $CaCO_3$)	1 mg/L	±5 mg/L ±5% of reading at 25 °C	@ 610 nm	Bromocresol green
Alkalinity, Marine	0 to 300 mg/L (as $CaCO_3$)	1 mg/L	±5 mg/L ±5% of reading at 25 °C	@ 610 nm	Bromocresol green
Aluminum	0.00 to 1.00 mg/L (as Al^{3+})	0.01 mg/L	±0.04 mg/L ±4% of reading at 25 °C	@ 525 nm	aluminon
Ammonia Low Range	0.00 to 3.00 mg/L (as NH_3-N)	0.01 mg/L	±0.04 mg/L ±4% of reading at 25 °C	@ 420 nm	Nessler
Ammonia Medium Range	0.00 to 10.00 mg/L (as NH_3-N)	0.01 mg/L	±0.05 mg/L ±5% of reading at 25 °C	@ 420 nm	Nessler
Ammonia High Range	0.0 to 100.0 mg/L (as NH_3-N)	0.1 mg/L	±0.5 mg/L ±5% of reading at 25 °C	@ 420 nm	Nessler
Bromine	0.00 to 8.00 mg/L (as Br_2)	0.01 mg/L	±0.08 mg/L ±3% of reading at 25 °C	@ 525 nm	DPD
Calcium	0 to 400 mg/L (as Ca^{2+})	1 mg/L	±10 mg/L ±5% of reading at 25 °C	@ 466 nm	oxalate
Calcium, Marine	200 to 600 mg/L (as Ca^{2+})	1 mg/L	±6% of reading at 25 °C	@ 610 nm	zincon
Chloride	0.0 to 20.0 mg/L (as Cl^-)	0.1 mg/L	±0.5 mg/L ±6% of reading at 25 °C	@ 466 nm	mercury (II) thiocyanate
Chlorine Dioxide	0.00 to 2.00 mg/L (as ClO_2)	0.01 mg/L	±0.10 mg/L ±5% of reading at 25 °C	@ 575 nm	chlorophenol red
Chlorine Dioxide, Rapid Method	0.00 to 2.00 mg/L (as ClO_2)	0.01 mg/L	±0.10 mg/L ±5% of reading at 25 °C	@ 525 nm	DPD
Chlorine, Free	0.00 to 5.00 mg/L (as Cl_2)	0.01 mg/L	±0.03 mg/L ±3% of reading at 25 °C	@ 525 nm	DPD
Chlorine, Free Ultra Low Range	0.000 to 0.500 mg/L (as Cl_2)	0.001 mg/L	±0.020 mg/L ±3% of reading at 25 °C	@ 525 nm	DPD
Chlorine, Total	0.00 to 5.00 mg/L (as Cl^-)	0.01 mg/L	±0.03 mg/L ±3% of reading at 25 °C	@ 525 nm	DPD
Chlorine, Total Ultra Low Range	0.000 to 0.500 mg/L (as Cl_2)	0.001 mg/L	±0.020 mg/L ±3% of reading at 25 °C	@ 525 nm	DPD
Chlorine, Total Ultra High Range	0 to 500 mg/L (as Cl_2)	1 mg/L	±3 mg/L ±3% of reading at 25 °C	@ 525 nm	iodometric
Chromium(VI) Low Range	0 to 300 µg/L (as Cr^{6+})	1 µg/L	±10 µg/L ±4% of reading at 25 °C	@ 525 nm	diphenylcarbohydrazide
Chromium(VI) High Range	0 to 1000 µg/L (as Cr^{6+})	1 µg/L	±5 µg/L ±4% of reading at 25 °C	@ 525 nm	diphenylcarbohydrazide
Color of Water	0 to 500 PCU (Platinum Cobalt Units)	1 PCU	±10 PCU ±5% of reading at 25 °C	@ 420 nm	colorimetric platinum cobalt
Copper Low Range	0.000 to 1.500 mg/L (as Cu^{2+})	0.001 mg/L	±0.01 mg/L ±5% of reading at 25 °C	@ 575 nm	bicinchoninate
Copper High Range	0.00 to 5.00 mg/L (as Cu^{2+})	0.01 mg/L	±0.02 mg/L ±4% of reading at 25 °C	@ 575 nm	bicinchoninate
Cyanuric Acid	0 to 80 mg/L (as CYA)	1 mg/L	±1 mg/L ±15% of reading at 25 °C	@ 525 nm	turbidimetric
Fluoride Low Range	0.00 to 2.00 mg/L (as F^-)	0.01 mg/L	±0.03 mg/L ±3% of reading at 25 °C	@ 575 nm	SPADNS
Fluoride High Range	0.0 to 20.0 mg/L (as F^-)	0.1 mg/L	±0.5 mg/L ±3% of reading at 25 °C	@ 575 nm	SPADNS
Hardness, Calcium	0.00 to 2.70 mg/L (as $CaCO_3$)	0.01 mg/L	±0.11 mg/L ±5% of reading at 25 °C	@ 525 nm	calmagite
Hardness, Magnesium	0.00 to 2.00 mg/L (ppm) (as $CaCO_3$)	0.01 mg/L	±0.11 mg/L ±5% of reading at 25 °C	@ 525 nm	calmagite
Hardness, Total Low Range	0 to 250 mg/L (as $CaCO_3$)	1 mg/L	±5 mg/L ±4% of reading at 25 °C	@ 466 nm	calmagite
Hardness, Total Medium Range	200 to 500 mg/L (as $CaCO_3$)	1 mg/L	±7 mg/L ±3% of reading at 25 °C	@ 466 nm	calmagite
Hardness, Total High Range	400 to 750 mg/L (as $CaCO_3$)	1 mg/L	±10 mg/L ±2% of reading at 25 °C	@ 466 nm	calmagite
Hydrazine	0 to 400 µg/L (as N_2H_4)	1 µg/L	±4% of full scale reading at 25 °C	@ 466 nm	p-Dimethylaminobenzaldehyde
Iodine	0.0 to 12.5 mg/L (as I_2)	0.1 mg/L	±0.1 mg/L ±5% of reading at 25 °C	@ 525 nm	DPD
Iron (II) (ferrous)	0.00 to 6.00 mg/L Fe^{2+}	0.01 mg/L	±0.10 mg/L ±2% of reading at 25°C	@ 525 nm	phenanthroline
Iron (II)/(III) (ferrous and ferric)	0.00 to 6.00 mg/L Fe	0.01 mg/L	±0.10 mg/L ±2% of reading at 25°C	@ 525 nm	phenanthroline
Iron Low Range	0.000 to 1.600 mg/L (as Fe)	0.001 mg/L	±0.01 mg/L ±8% of reading at 25 °C	@ 575 nm	TPTZ
Iron High Range	0.00 to 5.00 mg/L (as Fe)	0.01 mg/L	±0.04 mg/L ±2% of reading at 25 °C	@ 525 nm	phenanthroline
Magnesium	0 to 150 mg/L (as Mg^{2+})	1 mg/L	±5 mg/L ±3% of reading at 25 °C	@ 466 nm	calmagite
Manganese Low Range	0 to 300 µg/L (as Mn)	1 µg/L	±10 µg/L ±3% of reading at 25 °C	@ 575 nm	PAN
Manganese High Range	0.0 to 20.0 mg/L (as Mn)	0.1 mg/L	±0.2 mg/L ±3% of reading at 25 °C	@ 525 nm	periodate
Molybdenum	0.0 to 40.0 mg/L (as Mo^{6+})	0.1 mg/L	±0.3 mg/L ±5% of reading at 25 °C	@ 420 nm	mercaptoacetic acid
Nickel Low Range	0.000 to 1.000 mg/L (as Ni)	0.001 mg/L	±0.010 mg/L ±7% of reading at 25 °C	@ 575 nm	PAN
Nickel High Range	0.00 to 7.00 g/L (as Ni)	0.01 g/L	±0.07g/L ±4% of reading at 25 °C	@ 575 nm	photometric
Nitrate	0.0 to 30.0 mg/L (as NO_3^-- N)	0.1 mg/L	±0.5 mg/L ±10% of reading at 25 °C	@ 525 nm	cadmium reduction
Nitrite Ultra Low Range, Marine	0 to 200 µg/L (as NO_2^-- N)	1 µg/L	±10 µg/L ±4% of reading at 25 °C	@ 466 nm	diazotization
Nitrite Low Range	0 to 600 µg/L (as NO_2^-- N)	1 µg/L	±20 µg/L ±4% of reading at 25 °C	@ 466 nm	diazotization
Nitrite High Range	0 to 150 mg/L (as NO_2^-- N)	1 mg/L	±4 mg/L ±4% of reading at 25 °C	@ 575 nm	ferrous sulfate
Oxygen, Dissolved	0.0 to 10.0 mg/L (as O_2)	0.1 mg/L	±0.4 mg/L ±3% of reading at 25 °C	@ 420 nm	Winkler
Oxygen Scavengers	0.00 to 1.50 mg/L (as Carbohydrazide)	0.01 mg/L	±0.02 µg/L ±3% of reading at 25 °C	@ 575 nm	iron reduction
Oxygen Scavengers	0 to 1000 µg/L (as DEHA)	1 µg/L	±5 µg/L ±5% of reading at 25 °C	@ 575 nm	iron reduction
Oxygen Scavengers	0.00 to 2.50 mg/L (as Hydroquinone)	0.01 mg/L	±0.04 µg/L ±3% of reading at 25 °C	@ 575 nm	iron reduction
Oxygen Scavengers	0.00 to 4.50 mg/L (as Iso-ascorbic acid)	0.01 mg/L	±0.03 µg/L ±3% of reading at 25 °C	@ 575 nm	iron reduction
Ozone	0.00 to 2.00 mg/L (as O_3)	0.01 mg/L	±0.02 mg/L ±3% of reading at 25 °C	@ 525 nm	DPD
pH	6.5 to 8.5 pH	0.1 pH	±0.1 pH at 25 °C	@ 525 nm	phenol red
Phosphate Ultra Low Range, Marine	0 to 200 µg/L (as P)	1 µg/L	±5 µg/L ±5% of reading at 25 °C	@ 610 nm	ascorbic acid
Phosphate Low Range	0.00 to 2.50 mg/L (ppm)	0.01 mg/L	±0.04 mg/L ±4% of reading at 25 °C	@ 610 nm	ascorbic acid
Phosphate High Range	0.0 to 30.0 mg/L (as PO_4^{3-})	0.1 mg/L	±1 mg/L ±4% of reading at 25 °C	@ 525 nm	amino acid
Potassium	0.0 to 20.0 mg/L (as K)	0.1 mg/L	±3.0 mg/L ±7% of reading at 25 °C	@ 466 nm	turbidimetric tetraphenylborate
Silica Low Range	0.00 to 2.00 mg/L (as SiO_2)	0.01 mg/L	±0.03 mg/L ±3% of reading at 25 °C	@ 610 nm	heteropoly blue
Silica High range	0 to 200 mg/L (as SiO_2)	1 mg/L	±1 mg/L ±5% of reading at 25 °C	@ 466 nm	molybdosilicate
Silver	0.000 to 1.000 mg/L (as Ag)	0.001 mg/L	±0.020 mg/L ±5% of reading at 25 °C	@ 575 nm	PAN
Sulfate	0 to 150 mg/L (as SO_4^{2-})	1 mg/L	±5 mg/L ±3% of reading at 25 °C	@ 466 nm	turbidimetric
Surfactants, Anionic	0.00 to 3.50 mg/L (as SDBS)	0.01 mg/L	±0.04 mg/L ±3% of reading at 25 °C	@ 610 nm	methylene blue
Zinc	0.00 to 3.00 mg/L (as Zn)	0.01 mg/L	±0.03 mg/L ±3% of reading at 25 °C	@ 575 nm	zincon

Ordering Information	**HI83300-01** (115V) and **HI83300-02** (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	**HI83300-11** CAL Check Cuvette Kit for HI83300

See page 10.110 for standard reagents; see page 10.23 for general accessories