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Dissolved Oxygen Portable Photometer-kit

Description

Dissolved oxygen (DO) analysis measures the amount of gaseous oxygen (O2) dissolved in an aqueous solution. Dissolved oxygen is one of the most important parameters in aquatic systems. DO is required for metabolism by aerobic organisms and also influences inorganic chemical reactions. Understanding of the solubility and dynamics of oxygen distribution is essential to interpreting both biological and chemical processes within water bodies. Oxygen enters water by diffusion from the surrounding air by aeration (rapid movement) and as a product of photosynthesis. The amount of oxygen (or any gas) that can dissolve in pure water (saturation point) is inversely proportional to the temperature of the water; the warmer the water, the less dissolved oxygen is present. In aquaculture, dissolved oxygen is arguably the most important parameter of water quality. Most aquatic species require a minimum of 3 mg/L (ppm) dissolved oxygen, but 8 to 10 mg/L (ppm) is preferable. The HI97732 uses an adaptation of the Standard Methods for Examination of Water and Wastewater, 23rd edition, azide modified Winkler method to measure dissolved oxygen concentrations up to 10.0 mg/L (ppm). When reagent is added to a sample containing DO, the sample turns a yellow hue; the greater the concentration, the deeper the color. The associated color change is colorimetrically analyzed according to the Beer-Lambert Law. This principle states that light is absorbed by a complementary color, and the emitted radiation is dependent upon concentration. For dissolved oxygen determination, a narrow band interference filter at 466 nm allows only blue light to be emitted and passed through the sample cuvette. The sample will produce a yellow color, with an intensity proportional to the concentration of dissolved oxygen. The absorbance of blue light increases as the intensity of yellow light increases resulting in less transmittance of light hitting the silicon photodetector.

photometer optical system

- LED that generates very little heat.
- 8 nm narrowband interference filter that is accurate to +/- 1 nm.
- Reference detector that modulates the voltage to LED for consistent light output.
- A concave focusing lens that reduces errors from imperfections in the cuvette.

On-Screen Features

method option

CAL CheckAdvanced features including CAL-Check to verify performance and if necessary, recalibrate.

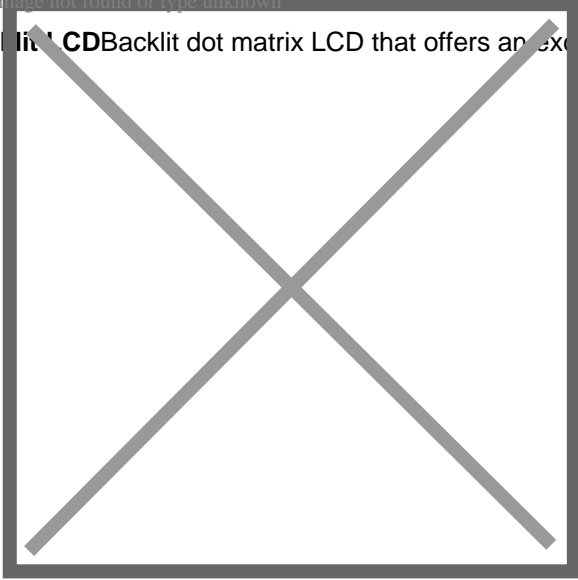
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Setup OptionsBacklit dot matrix LCD that offers an exceptionally intuitive user interface that is easy to read and understand.

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Backlit LCD Backlit dot matrix LCD that offers an exceptionally intuitive user interface that is easy to read and understand.



Tutorial Mode Tutorial mode for step-by-step instructions to guide a first-time user in how to perform a measurement correctly.

HI97732 FEATURES/BENEFITS:

Stable Light Source:

- The internal reference system of the HI97732 photometer compensates for any drifts due to power fluctuations or ambient temperature changes. With a stable source of light the readings are fast and stable between your blank (zero) measurement and sample measurement.

High Efficiency Light Source:

- LED light sources offer superior performance compared to tungsten lamps. LEDs have a much higher luminous efficiency, providing more light while using less power. They also produce little heat, which could otherwise affect electronic stability.

High Quality Filters:

- Improved optical filters ensure greater wavelength accuracy and allow a brighter, stronger signal to be received. The end result is higher measurement stability and less wavelength error.

Greater Light Yield:

- A focusing lens collects all of the light that exits the cuvette, eliminating errors from imperfections and scratches that may be present in the glass. The use of the convex lens reduces the need for indexing cuvettes.

CAL Check Functionality:

- Hanna's exclusive CAL Check feature allows for performance verification and calibration of the meter using NIST traceable standards. Our CAL Check standard vials are developed to simulate a specific absorbance value at each wavelength to verify the accuracy of subsequent readings.

Large Cuvette Size:

- The sample cell of the HI97732 fits a round, glass cuvette with a 25 mm path length. The relatively long path length of the sample cuvette allows the light to pass through more of the sample solution, ensuring accurate measurements even in low absorbance samples.

Intuitive Dot Matrix Display:

- The HI97732 is designed with a backlit, graphic LCD. With virtual keys, a battery status indicator, and error messages. Users will find the meter interface intuitive and easy to read. A dedicated help key provides information relating to the current meter operation, and can be used at any stage in the setup or measurement process to show contextual help.

Auto-off Protection:

- The meter uses three common AA batteries that allow for about 800 measurements to be taken. The auto-off feature automatically shuts off the meter after 15 minutes of inactivity in order conserve battery life.