

HI90060X Series

## Photometric Electrodes

These photometric probes are used with a potentiometric titration for equivalence end point detection of colorimetric reactions. These probes are available in 4 different wavelengths from 470 nm to 625 nm and have a universal BNC connector that is used as a potentiometric input on Hanna titrators and autosamplers.

- **Reflective Measurement**
  - Allows for a high color sensitivity in a compact design
- **Temperature Compensation**
  - Drift from variances in temperature are automatically compensated
- **Glass Body**
  - All of the photometric probes have a glass body that offers excellent chemical resistance. The body of the electrode is 12 mm in diameter and fits easily into sampling beakers
- **LED Brightness Trimmer**
  - If needed, a trimmer is provided in the head of the electrode to adjust the led output value.

pH, ORP and ISE electrodes are commonly used in potentiometric titrations. These probes produce a voltage that changes as a titrant is dosed into the sample being analyzed. The HI90060X family of photometric probes use the principle of absorbance at a specific wavelength to identify the equivalence point of a titration with the use of a color indicator. The color change of a solution causes a sharp change in the absorbance which also causes a sharp change in the mV response. It is common for a complexometric titration to end in a flat mV response. Using the Hanna potentiometric titrator it is possible to program the meter to use the first derivative as the end point. This program is ideal since when a color indicator is used the color change occurs very distinctly.

The use of a photometric probe for potentiometric titration can be used for a variety of complexometric titrations including calcium and magnesium water hardness and iron, aluminum and calcium in cement materials testing. The photometric probe is also ideal for non-aqueous titrations such as Total Acid Number (TAN) and Total Base Number (TBN) of petroleum products due to its advantages over a standard pH electrode.

With the photometric probe there is no fill solution to change in order to be compatible with a non-aqueous sample and there is no pH sensor to foul.



Each probe has an LED at a specific wavelength that shines light through the sample and reflected back by a platinum mirror sealed in glass. The reflective measurement has a fixed path length and allows for a high color sensitivity in a compact design.

All of the HI90060X have the same design but vary in the wavelength of light used for the photometric analysis.

The probes' open cell design that allows for the solution to pass through with the use of a stirrer.



### Specifications

mV Range	10 to 1100 mV
Wavelength / LED color	<b>HI900601</b> @ 525 nm / green LED <b>HI900602</b> @ 625 nm / red LED <b>HI900603</b> @ 590 nm / orange LED <b>HI900604</b> @ 470 nm / blue LED
Light Source	LED
Measuring Cycle	LED pulsed at 1 kHz
Light Detector	silicon photocell
Sample Temperature	0 to 75°C (32 to 167°F)
Body Material	glass
Body Length / Overall Length	120 mm / 200mm
Outer Diameter	12 mm
Connection	BNC with 1.5 meter cable for connecting to titrator or autosampler
Power supply	ps/2 connector for connecting to titration system
Environment	0 to 50°C (32 to 122°F)
Ordering Information	<b>HI900601</b> (@ 525 nm) is supplied, instruction manual, and electrode quality testing certificate. <b>HI900602</b> (@ 625 nm) is supplied, instruction manual, and electrode quality testing certificate. <b>HI900603</b> (@ 590 nm) is supplied, instruction manual, and electrode quality testing certificate. <b>HI900604</b> (@ 470 nm) is supplied, instruction manual, and electrode quality testing certificate.