Dear Customer,

Thank you for choosing a Hanna Instruments product. Please read this instruction manual carefully before using the probe. For more information about Hanna Instruments and our products, visit www.hannainst.com or e-mail us at sales@hannainst.com.
For technical support, contact your local Hanna Instruments Office or e-mail us at tech@hannainst.com.

Preliminary Examination

Remove the photometric probe from the packing and examine it carefully. For further assistance, please contact your local Hanna Instruments Office or email us at tech@hannainst.com.
Each HI900600 series photometric probe is delivered in a plastic case and is supplied with:

- Trimmer tool
- Quality certificate
- Instruction manual

Note: *Save all packing material until you are sure that the probe works correctly. Return items must be returned in the original packing material with the supplied accessories. Items that need to be returned must be returned in their original packing material with the supplied accessories.*

General Description & Intended Use

The HI900600 series are photometric probes 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.
The optimal wavelength depends on the indicator for the method - a wavelength should be selected at which the indicator causes a large mV change between its reacted and unreacted forms.

Features

- Reflective measurement allows for high color sensitivity in a compact design.
- Drift from changes in temperature is automatically compensated.
- Glass body offers excellent chemical resistance.
- LED brightness trimmer is provided in the head of the probe to adjust the LED intensity.

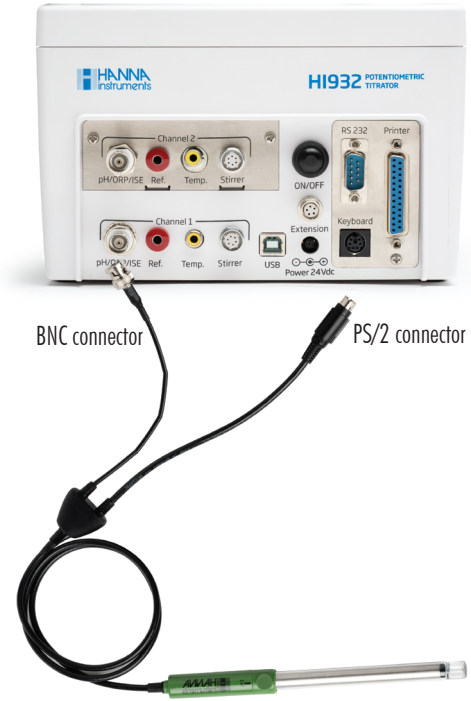
Specifications

mV range	10 to 1100 mV
Light source	LED
Measuring cycle	LED pulsed at 1 kHz
Light detector	Silicon photocell
Sample temperature	0 to 75 °C (32 to 167 °F)
Temperature drift	Less than 0.5 mV/°C
Body material	Glass
Body length / Overall length	120 mm / 200 mm
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 titrator
Environment	0 to 50 °C (32 to 122 °F)

Code	Wavelength	LED Color
HI900601	525 nm	Green LED
HI900602	625 nm	Red LED
HI900603	590 nm	Yellow LED
HI900604	470 nm	Blue LED

Installation

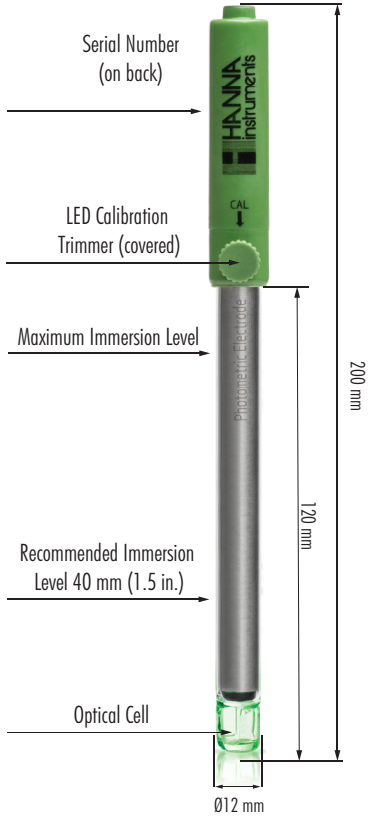
- The HI900600 family of photometric probes can be connected to the HI932, HI931, HI902C, HI901C and HI901W titrators by plugging the BNC connector to the pH/ORP/ISE port and PS/2 connector to the keyboard port.



- The photometric probe can be installed in two locations on the electrode holder. Both of these place the probe as far downstream from the clockwise-spinning titrant as possible. See the images below for the electrode and titrant tube position.

- For use with the HI921 and HI922 Autosamplers, install the electrode and dispensing tubes identical as the HI93x electrode holder. The cable of the electrode is long enough to reach the BNC and PS/2 connectors of the HI90x or HI93x Titrator.
- The dispensing tip must be slightly submerged into the sample during use, this prevents the titrant pump from injecting bubbles into the sample. If necessary trim the blue protective tubing to allow the dispensing tip to be submerged into the sample.

Probe Details



General Operations

- To avoid the generation of air bubbles, the stir speed should not exceed 800 RPM.
- Reagent addition feature on the autosampler can generate air bubbles, it is recommended to add the reagents with the probe above the sample beaker. To do this set the head height to 80 to 100 mm for reagent addition operations.
- For best reproducibility, use linear dosing setting. If dynamic dosing is used a narrow range, such as 0.040 to 0.100 mL is recommended.

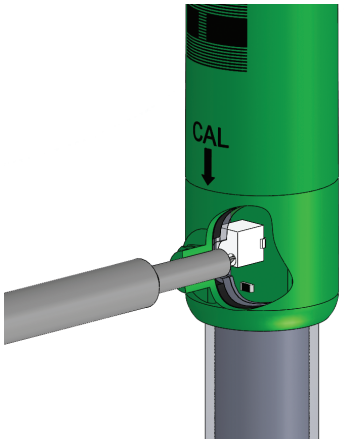
LED Calibration

The LED will slowly dim over time, this is normal. LED adjustment is not critical for the measurement but it is recommended to follow this procedure before the first use and once per week.

- Connect the probe to the titrator or autosampler.
- Place the probe in deionized or distilled water. Swirl gently to remove any air bubbles from the optical cell.
- On the home screen or in mV mode, note the mV reading.
- Remove the cap covering the hole marked "CAL".
- Using the supplied trimmer tool slowly turn the screw clockwise until the screen shows 1000 mV.

  Caution: *If the trimmer screw is turned too far in the positive (clockwise) direction, it is possible that the probe electronics can no longer amplify the mV signal. This will occur at some point above 1200 mV. If this occurs, it will take several turns of the screw in the negative (counter-clockwise) direction before a change in the mV signal will occur.*

- Replace the cap when procedure is complete.



Care & Maintenance

The HI900600 photometric probes are fragile and can crack easily if mishandled. Handle the probe by the green top only and do not allow the stirrer assembly to hit it.
The probe can be cleaned after each use with a gentle stream of deionized or distilled water. If necessary, soak the probe in HI7061 Electrode cleaning solution for general use for 20 minutes, rinse throughly with distilled or deionized water before use.

Accessories

Code	Description
HI900948	Trimmer tool
HI900932	PS/2 Y-splitter
HI7061L	Electrode cleaning solution for general use

Recommendations for Users

Before using this product, make sure it is entirely suitable for your specific application and for the environment in which it is used. Any variation introduced by the user to the supplied equipment may degrade the probe's performance. For yours and the probe's safety do not use (or store) it in hazardous environments.

Certification

All Hanna Instruments conform to the **CE European Directives.**

CE

RoHS
compliant

Disposal of Electrical & Electronic Equipment. The product should not be treated as household waste. Instead hand it over to the appropriate collection point for the recycling of electrical and electronic equipment which will conserve natural resources.
For more information, contact your city, your local household waste disposal service, the place of purchase or go to www.hannainst.com.

Warranty

HI900600 family is warranted for a period of six months against defects in workmanship and materials when used for its intended purpose and maintained according to instructions. This warranty is limited to repair or replacement free of charge. Damage due to accidents, misuse, tampering or lack of prescribed maintenance is not covered. If service is required, contact your local Hanna Instruments Office. If under warranty, report the model number, date of purchase, serial number and the nature of the problem. If the repair is not covered by the warranty, you will be notified of the charges incurred. If the probe is to be returned to Hanna Instruments, first obtain a Returned Goods Authorization (RGA) number from the Technical Service department and then send it with shipping costs prepaid. When shipping any product, make sure it is properly packaged for complete protection.

Hanna Instruments reserves the right to modify the design, construction or appearance of its products without advance notice.

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INSTRUCTION MANUAL

HI900601
HI900602
HI900603
HI900604
Photometric Electrodes

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