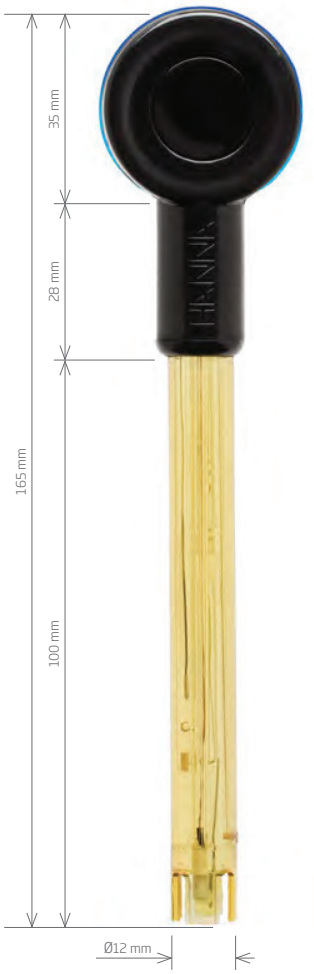

HI12302

HALO™

The HI12302 HALO is a Bluetooth® Smart (Bluetooth 4.0) pH and temperature electrode. This electrode is composed of a durable PEI body and spheric, general purpose glass sensing bulb. The double junction design ensures that the gel electrolyte is free of silver chloride (AgCl) between the sample to be measured and the internal reference cell, resisting clogging and any potential precipitation at the junction. All readings are transmitted directly to an iPhone® or iPad® (not included) running the Hanna Lab App.

General Purpose Glass Formulation

General purpose glass, as the name implies, is a standard glass formulation that is used for general use. A pH electrode with general purpose (GP) glass will have a resistance of 100 megaohms at 25°C and is suited for measuring pH of samples that are at ambient temperatures. The HI12302 is suitable to use with samples that measure from -5 to 70°C (23 to 158°F).

Spheric Glass Tip

The spheric bulb is for general purpose use within a wide range of environments and applications that measure aqueous solutions due to its large surface area.

Built-in Temperature Sensor

HI12302 features a built-in thermistor temperature sensor that is in the tip of the indicating pH electrode. A thermistor temperature sensor provides for a high accuracy temperature reading and should be as close as possible to the indicating pH electrode in order to compensate for the effect that temperature has on the change in resistance of the glass. By having an accurate reading it is possible to provide a temperature compensated reading.

PEI Body

The body of the HI12302 is composed of polyetherimide (PEI) resin. PEI is suitable for a wide range of applications and excels in field measurements due to its durability. The shielding around the spherical glass tip minimizes breakage due to accidental bumping or dropping of the electrode. PEI is a high quality plastic that is chemically resistant to many aggressive chemicals.

Single Ceramic Double Junction Reference

The HI12302 is a double junction design. pH electrodes are available as single junction or double junction. See below for a complete description of the differences. The junction also known as a salt bridge is necessary component of the electrical circuit. The movement of ions must flow through the junction for a steady reading. The outer reference has a single ceramic frit. The ceramic is a porous material that is easily fused with the glass body and has a similar expansion coefficient. A single ceramic junction allows the gel electrolyte to flow at a rate of 15 to 20 µL/hour.

HALO™ Specifications	HI12302
Reference	double, Ag/AgCl
Junction	ceramic
Electrolyte	gel
Range	0.00 to 12.00 pH ±420 mV -5.0 to 70.0°C (23.0 to 158.0°F)
Bulb Shape	dome
Outer Diameter (glass)	12 mm (plastic)
Overall Length	165 mm
Solution Temperature	-5.0 to 70.0°C (23.0 to 158.0°F)
Environment	0.0 to 50.0°C (32.0 to 122.0°F), electronic module is not waterproof
Temperature Sensor	integrated
Body Material	PEI
Connection	Bluetooth® Smart (Bluetooth® 4.0), 10 m (33') range
Battery Type / Life	CR2032 3V lithium ion / approximately 500 hours
Ordering Information	**HI12302 (HALO)** is supplied with storage solution, cleaning solution, pH 7.01 buffer solution, pH 4.01 buffer solution, fill solution, battery, quality certificate and instruction sheet.

pH solutions begin on page 2.110