

## Foodcare

HI99151

### Portable pH Meter

for Beer Analysis

- Simultaneous pH and temperature measurements on a large dual-line LCD display
- User-friendly two button design
- Application specific probe
- Durable IP67 waterproof casing
- Watertight probe connection
- Probe condition indicator
- Automatic pH calibration at one or two points within two memorized buffer sets (standard or NIST)
- On-screen calibration tags
- mV measurement for electrode check
- Selectable temperature unit (°C or °F)
- Auto-off function
- Battery life indication and low battery detection

HI99151 is a portable, microprocessor-based pH and temperature meter specifically designed for beer brewing.

It is supplied with the FC2143 rugged double junction pH electrode with a flat pH sensor profile, cloth reference junction, and titanium body perfect for brewing operations.

There are no crevices to collect solids and the pH and temperature specifications are pertinent to most brewing operations.

Together, they are versatile tools for measuring the pH in brewing operations such as mashing and wort separations, measuring the pH of the cooled wort boil, checking the fermentation pH, and checking the finished or conditioned beer.



- **Optional shockproof silicon rubber boot**
- Specially designed to protect your instrument from damage or impact

**HI710028** Orange  
**HI710029** Blue  
**HI710030** Green



#### Specifications

#### HI99151

pH	Range*	-2.00 to 16.00 pH / -2.0 to 16.0 pH
	Resolution	0.01 pH / 0.1 pH
	Accuracy (@25°C/77°F)	±0.02 pH / ±0.1 pH
pH-mV	Range*	±825 mV
	Resolution	1 mV
	Accuracy (@25°C/77°F)	±1 mV
Temperature	Range*	-5.0 to 105.0°C; 23.0 to 221.0°F
	Resolution	0.1°C; 0.1°F
	Accuracy (@25°C/77°F)	±0.5°C (up to 60°C), ±1.0°C (outside); ±1.0°F (up to 140°F), ±2.0°F (outside)
Additional Specifications	Temperature Compensation	automatic, from -5.0 to 105.0°C (23.0 to 221.0°F)
	Probe (included)	FC2143 preamplified pH/temperature probe with DIN connector, and 1 m (3.3') cable, titanium body
	Battery Type / Life	1.5V AAA (3) approx. 1400 hours of continuous use
	Auto-off	user selectable: after 8 min, 60 min, or disabled
	Environment	0 to 50°C (32 to 122°F); RH max. 100%
	Meter Dimensions	154 x 63 x 30 mm (6.1 x 2.5 x 1.2")
	Meter Mass (with batteries)	196 g (6.91 oz.)
Case Ingress Protection Rating	IP67	
Ordering Information	<p><b>HI99151</b> is supplied with FC2143 preamplified pH/temperature probe with Quick Connect DIN connector and 1 m (3.3') cable, pH 4.01 and 7.01 buffer sachets, HI700682 electrode cleaning solution for brewing deposits sachets (2), 100 mL beaker, 1.5V AAA batteries (3), calibration certificate of meter, calibration certificate of probe, instruction manual, and HI710142 rugged carrying case.</p>	

\* the FC2143 is limited to be used from 0 to 12 pH and from 0 to 80°C temperature (32 to 176°F)



## FC2143 Amplified pH Electrode

- **Amplified electrode**
  - Provides a fast, stable response that is immune to electrical noise due to static discharge
- **Maintenance free gel filled electrode**
  - No fill solution required
- **Highly durable titanium body**
- **Low temperature glass**

The HI99151 beer pH meter uses the titanium bodied FC2143 amplified pH electrode with built-in temperature sensor. The amplified electrode provides a fast, stable response that is immune to electrical noise due to static discharge. The body of the electrode is made from titanium, which provides an unbreakable structure.

### The Effects of pH in Brewing

In the brewing process, the enzymes required to convert starch into sugar are pH-sensitive, with an optimal pH of 5.2 to 5.6. Different compounds are used to adjust the pH including phosphoric acid, lactic acid, and gypsum.

Wort clarity and break formation are also affected by pH. Protein coagulation occurs during wort boiling, where the optimum pH is around pH 4.9, though a common boil pH is pH 5.2. A pH that is too high will not only inhibit coagulation, but also promote browning due to the interaction of amino acids and reducing sugars.

Hop utilization during the wort boil is also affected by pH; as pH increases, the solubility of hop resins increase. A high pH also increases the release of tannins, resulting in a harsher taste, and tends to favor elevated microbial activity.