

HI97720 · HI97719

Hardness Standard Method Portable Photometers

- Advanced LED optical system
 - Innovative optical design that utilizes a reference detector and focusing lens to eliminate errors from changes in the light source and from imperfections in the glass cuvette.
 - 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.
- CAL Check™
 - Validate instrument performance at any time using CAL Check cuvettes made with NIST traceable standards. The CAL Check screen guides the user step-by-step through the validation process and user calibration.
- On-screen tutorial mode with animations
 - Guides users step-by-step through the measurement process
- Waterproof and floating IP67 case
- Unit of measure is displayed along with reading
- Built-in timer
 - Built-in reaction timer that ensures consistency between tests.
- Error messages on display
 - Alerts to problems including no cap, high zero, and standard too low
- GLP data
 - Displays the last calibration date.
- Auto logging
- Battery status indicator
- Auto-shut off

Significance of Use

Water, with exception to distilled water, contains dissolved salts (magnesium and calcium carbonates). The concentration of these salts determines the water hardness, which can be expressed in calcium carbonate or magnesium carbonate. The sum of these two represents the total hardness level. In addition, water hardness is also related to the phenomenon of pipe rusting in water heating and cooling systems, reverse osmosis, and demineralization plants.



Specifications	HI97720 Ca Hardness	HI97719 Mg Hardness
Range	0.00 to 2.70 mg/L (ppm) (as CaCO ₃)	0.00 to 2.00 mg/L (ppm) (as CaCO ₃)
Resolution	0.01 mg/L	
Accuracy @25°C (77°F)	±0.11 mg/L ±5% of reading	
Method	adaptation of the Standard Methods for the Examination of Water and Wastewater, 18th ed. Calmagite method	adaptation of the Standard Methods for the Examination of Water and Wastewater, 18th ed. EDTA colorimetric method.
Light Source	light emitting diode	
Bandpass filter	525nm	
Bandpass filter bandwidth	8 nm	
Bandpass filter wavelength accuracy	±1.0 nm	
Light Detector	silicon photocell	
Cuvette type	round 24.6 mm diameter (22 mm inside)	
Auto logging	50 readings	
Display	128 x 64 pixel B/W LCD with backlight	
Auto-off	after 15 minutes of inactivity (30 minutes before a READ measurement)	
Battery type / Life	alkaline 1.5 V AA (3) / > 800 measurements (without backlight)	
Environment	0 to 50°C (32 to 122°F); 0 to 100% RH, non-serviceable	
Dimensions	142.5 x 102.5 x 50.5 mm (5.6 x 4.0 x 2.0")	
Weight	380 g (13.4 oz.)	

Ordering Information

HI97720 and **HI97719** are supplied with sample cuvettes (2), sample caps (2), plastic stoppers (2), 1.5V AA batteries (3), instrument quality certificate, and instruction manual. CAL Check standards and testing reagents sold separately

HI97720C and **HI97719C** includes photometer, CAL Check standards, sample cuvettes (2), sample caps (2), plastic stoppers (2), 1.5V AA batteries (3), 1 mL syringe with tip, cuvette wiping cloth, CAL Check standard certificate, instrument quality certificate, instruction manual, and rigid carrying case.

Reagents sold separately

Reagents and Standards

HI97720	HI97720-11 CAL Check standard cuvettes for calcium hardness
	HI93720-01 calcium hardness reagents for 100 tests
	HI93720-03 calcium hardness reagents for 300 tests
HI97719	HI97719-11 CAL Check standard cuvettes for magnesium hardness
	HI93719-01 magnesium hardness reagents for 100 tests
	HI93719-03 magnesium hardness reagents for 300 tests

HI97735

Total Hardness Portable Photometer



- **Advanced LED optical system**
 - Innovative optical design that utilizes a reference detector and focusing lens to eliminate errors from changes in the light source and from imperfections in the glass cuvette.
 - 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.
- **CAL Check™**
 - Validate instrument performance at any time using CAL Check cuvettes made with NIST traceable standards. The CAL Check screen guides the user step-by-step through the validation process and user calibration.
- **On-screen tutorial mode with animations**
 - Guides users step-by-step through the measurement process
- **Waterproof and floating IP67 case**
- **Unit of measure is displayed along with reading**
- **Built-in timer**
 - Built-in reaction timer that ensures consistency between tests.
- **Error messages on display**
 - Alerts to problems including no cap, high zero, and standard too low
- **GLP data**
 - Displays the last calibration date.
- **Auto logging**
- **Battery status indicator**
- **Auto-shut off**

HI97735 Total Hardness

Specifications

Total Hardness LR	Range	0 to 250 mg/L (as CaCO ₃)
	Resolution	1 mg/L
	Accuracy @25°C (77°F)	±5 mg/L ±4% of reading at 25°C
	Method	Adaptation of the EPA recommended method 130.1
Total Hardness MR	Range	200 to 500 mg/L (as CaCO ₃)
	Resolution	1 mg/L
	Accuracy @25°C (77°F)	±7 mg/L ±3% of reading at 25°C
	Method	Adaptation of the EPA recommended method 130.1
Total Hardness HR	Range	400 to 750 mg/L (as CaCO ₃)
	Resolution	1 mg/L
	Accuracy @25°C (77°F)	±10 mg/L ±2% of reading at 25°C
	Method	Adaptation of the EPA recommended method 130.1
Measurement System	Light Source	light emitting diode
	Bandpass filter	466 nm
	Bandpass filter bandwidth	8 nm
	Bandpass filter wavelength accuracy	±1.0 nm
	Light Detector	silicon photocell
	Cuvette type	round 24.6 mm diameter (22 mm inside)
Additional Specifications	Auto logging	50 readings
	Display	128 x 64 pixel B/W LCD with backlight
	Auto-off	after 15 minutes of inactivity (30 minutes before a READ measurement)
	Battery type / Life	alkaline 1.5 V AA (3) / > 800 measurements (without backlight)
	Environment	0 to 50°C (32 to 122°F); 0 to 100% RH, non-serviceable
	Dimensions	142.5 x 102.5 x 50.5 mm (5.6 x 4.0 x 2.0")
Weight	380 g (13.4 oz.)	

HI97735 is supplied with sample cuvettes (2), sample caps (2), plastic stoppers (2), 1.5V AA batteries (3), instrument quality certificate, and instruction manual.

CAL Check standards and testing reagents sold separately

HI97735C includes photometer, CAL Check standards, sample cuvettes (2), sample caps (2), plastic stoppers (2), 1.5V AA batteries (3), cuvette wiping cloth, scissors, CAL Check standard certificate, instrument quality certificate, instruction manual, and HI7101414 rigid carrying case. Reagents sold separately

Ordering Information

Reagents and Standards

HI97735	HI97735-11 CAL Check standard cuvettes for total hardness LR, MR, HR
	HI93735-00 total hardness LR reagent for 100 tests
	HI93735-01 total hardness MR reagent for 100 tests
	HI93735-02 total hardness HR reagent for 100 tests
	HI93735-0 reagents for 300 tests (LR - 100 tests, MR - 100 tests, HR - 100 tests)

See page 10.114 for standard reagents; see page 10.115 for CAL Check kits; see page 10.52 for general accessories