

HI97705 · HI97770

Silica, Low and High Range 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

The dissolved mineral forms of silica are found in all natural waters. Although silica is only slightly soluble in water and it can be found as ionic silica, silicates, and colloidal or suspended particles. The solubility of silica is highly dependent on pH, temperature, and pressure. Silica's presence in industrial applications, particularly in high pressure turbines, is undesirable because of scaling caused as silica precipitates out of solution at the elevated temperatures and pressures. Heating systems and reverse osmosis plants also require monitoring of silica to ensure process efficiency.



Specifications	HI97705 Silica LR	HI97770 Silica HR	
Measurement	Range	0.00 to 2.00 mg/L (ppm) (as SiO ₂)	0 to 200 mg/L (ppm) (as SiO ₂)
	Resolution	0.01 mg/L	1 mg/L
	Accuracy @25°C (77°F)	±0.03 mg/L ±3% of reading	±1 mg/L ±5% of reading
	Method	adaptation of the ASTM D859, heteropoly blue method	adaptation of the USEPA method 370.1 for drinking, surface and saline waters, domestic and industrial wastes and Standard Method 4500-SiO ₂ C
Measurement System	Light Source	light emitting diode	
	Bandpass filter	610 nm	466 nm
	Bandpass filter bandwidth	8 nm	
	Bandpass filter wavelength accuracy	±1.0 nm	
	Light Detector	silicon photocell	
Additional Specifications	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	HI97705 and HI97770 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		
	HI97705C and HI97770C includes photometer, CAL Check standards, sample cuvettes (2), sample caps (2), plastic stoppers (2), 1.5V AA batteries (3), scissors, cuvette wiping cloth, CAL Check standard certificate, instrument quality certificate, instruction manual, and rigid carrying case. Reagents sold separately		
		HI97705-11 CAL Check standard cuvettes for silica LR	HI93705-01 silica LR reagents for 100 tests
Reagents and Standards	HI97705	HI93705-03 silica LR reagents for 300 tests	HI97770-11 CAL Check standard cuvettes for silica HR
	HI97770	HI96770-01 silica HR reagents for 100 tests	HI96770-03 silica HR reagents for 300 tests