



## Advanced Dissolved Oxygen Measurement

HANNA's research grade bench meter line expands to include HI 4421. HI 4421 features DO, BOD, OUR and SOUR measurement modes in a compact versatile instrument. The color 240 x 320 dot matrix LCD is capable of displaying graphs, soft key menus, help screens and calibration reminders. HI 4421 also incorporates an intuitive menu system to help streamline your workflow process and provide accurate measurements quickly and efficiently. Measurements can be uploaded to a PC via USB or RS 232 with HANNA's optional software.

- Extended range up to 90 ppm and 600% saturation
- True barometric atmospheric pressure compensation
- Automatic or user calibration
- Auto-hold to freeze LCD readings
- AutoEnd mode for DO
- Flexible logging with 3 modes
- BOD (biochemical oxygen demand), OUR (oxygen uptake rate) and SOUR (specific oxygen uptake rate)
- GLP
- Two selectable alarm limits
- Up to 100 logging lots, 200 OUR and SOUR reports and up to 200 BOD method entries



### SPECIFICATIONS

### HI 4421

Range	Dissolved Oxygen	0.00 to 90.00 ppm; 0.0 to 600.0 % saturation
	Barometric Pressure	450 to 850 mmHg; 560 to 1133 mBar
	Salinity Compensation	0 to 45 ppt (g/L)
	Temperature	-20.0 to 120.0°C; -4.0 to 248°F; 253.1 to 393.1 K
Resolution	Dissolved Oxygen	0.01 ppm; 0.1% saturation
	Barometric Pressure	1 mm Hg
	Temperature	0.1°C/°F/K
Accuracy	Dissolved Oxygen	±1.5% of reading ±1 digit
	Barometric Pressure	±3 mm Hg + 1 least significant digit
	Temperature	±0.2°C/K/°F
Measurement Modes	Direct DO; BOD (biochemical oxygen demand); OUR (oxygen uptake rate); SOUR (specific oxygen uptake rate)	
Calibration	DO	Automatic/user standard, 1 or 2 points
	Barometric Pressure	Single point
Temperature Compensation	0.0 to 50.0°C; 32.0 to 122.0°F; 237.1 to 323.1 K	
Probe (included)	Polarographic with built-in temperature sensor	
Logging	Record Samples	Up to 100 lots; 10000 samples/lot for automatic logging; 5000 samples/lot for manual logging
	Logging Interval	from 1 second and up
GLP	Last calibration data, calibration info	
Alarm (DO, BOD, OUR, SOUR)	Inside and outside limits	
PC Connection	Opto-isolated USB and RS232	
Display	240 x 320 dot-matrix color LCD with on-screen help, graphing, language selection and custom configuration	
Power Supply	12 Vdc adapter (included)	
Dimensions / Weight	159 x 230 x 93 mm (6.3 x 9.1 x 3.7")/800 g (1.8 lbs.)	

### ORDERING INFORMATION

**HI 4421-01** (115V) and **HI 4421-02** (230V) are supplied with HI 76408 DO probe, HI 70415 electrolyte solution (30 mL), HI 76407A membrane caps (2), HI 76404N electrode holder, power adapter and instruction manual.

### PROBES

**HI 76408** DO probe for laboratory use, with 1 m (3.3') cable

### SOLUTIONS

**HI 7040M** Zero oxygen solution, 230 mL  
**HI 7040L** Zero oxygen solution, 500 mL  
**HI 7041S** Electrolyte solution, 30 mL

### ACCESSORIES

**HI 76407A/P** Replacement membrane (5 pcs)  
**HI 76404N** Electrode holder  
**HI 92000** Windows® compatible software  
**HI 920010** Serial cable for PC connection  
**HI 920013** USB cable for PC connection

**BOD** gives an indication of the biodegradable organic material present in a sample of water. The dissolved oxygen concentration is measured before and after an incubation period of 5 days and the BOD is calculated in mg per liter from the difference.

**OUR** and **SOUR** are used to determine the oxygen consumption or respiration rate. OUR is measured in mg of oxygen consumed per liter per hour, and SOUR is measured in mg of oxygen consumed per gram of volatile suspended solids per hour.