

YSI MultiLab Line

Benchtop Instruments for the Lab

The YSI MultiLab line of instruments provide easy to use and easy-to-calibrate menu-driven operation ideal for any laboratory. These one, two, or three channel benchtop meters for the measurement of pH, ORP, conductivity and/or optical-based dissolved oxygen (BOD) are ideal for highly accurate lab testing.

The instruments feature a large, easy to read display, Intelligent Digital Sensors (IDS) for plug-and-play connectivity, and a 3-year instrument warranty.

Model 4010-1 - One Channel

- Single channel input for pH, ORP, Optical-Based DO/BOD, or conductivity
- Data storage - 500 data sets in *manual* mode; 5,000 data sets in *automatic* logging mode
- Large, easy to read backlit graphic display
- GLP Compliant (sensors store serial # and calibration data)
- USB connectivity to manage data
- 3-year warranty



Models 4010-2 and 4010-3

- Two and Three Channel

- Two or Three channel input for pH, ORP, Optical-Based DO/BOD, or conductivity
- Data storage - 500 data sets in *manual* mode; 10,000 data sets in *automatic* logging mode
- Large, easy to read color display
- GLP Compliant (sensors store serial # and calibration data)
- Antibacterial keypad
- USB connectivity to manage data
- 3-year warranty



Parameters:

Temperature

Conductivity

Resistivity

Salinity

TDS (Total Dissolved Solids)

pH/mV

Oxidation Reduction Potential (ORP)

Partial Pressure

Dissolved Oxygen (% and mg/L* (BOD))

*Optical Based



Intelligent Digital Sensors (IDS)

The IDS sensors automatically store their unique serial number and calibration data. The sensors maintain their calibration data when moved from instrument to instrument and transmit this information to the new instrument so you don't have to recalibrate. In addition, they also digitally process the measurement signal.

- Plug-and-play connectivity in any combination with all MultiLab instruments
- Sensors store their own unique ID with serial number and calibration status
- Automatic sensor recognition with digital signal processing and data transfer
- Includes self-stirring Optical-Based DO/BOD, pH, ORP, and conductivity sensors

CMC

The CMC function displays continual monitoring of the sensor's measuring range. The range is represented with a bar and calibration points are shown as vertical lines at the cal point. A moving cursor shows the current measured value and indicates if the measurement is within the calibrated range.

Quality Sensor Control (QSC)

The QSC is a system to monitor the condition of the pH electrodes. An initial calibration is performed and, afterwards, the sensor status is monitored and graphically displayed.



The YSI IDS ProOBOD self-stirring optical BOD probe, powered by the instrument, has a built-in sensor guard to protect the sensing tip from damage while placing it into the BOD bottles.

Superior Benchtop Measurement

The MultiLab line provides high accuracy measurements for the lab.

Measure conductivity, pH, ORP, or DO for BOD calculations confidently and quickly with the full range of IDS sensors. *Also capable of using non-IDS pH or ORP sensors with a simple adapter for sensors with DIN or BNC connectors.*



MultiLab Line Benchtop Sensor Specifications

	pH 103740Y and 103741Y	pH 103750Y	pH 103780Y (refillable)	ORP 103790Y (refillable)
pH Range	0.000 to 14.000 ($\pm 0.004^*$)			-1200 to +1200 mV (± 2 mV)
Temperature Range	0 to 80°C (32 to 176°F)	0 to 80°C (32 to 176°F)	0 to 100°C (32 to 212°F)	0 to 100°C (32 to 212°F)
Temperature Accuracy	$\pm 0.2^\circ\text{C}$	$\pm 0.2^\circ\text{C}$	$\pm 0.2^\circ\text{C}$	$\pm 0.2^\circ\text{C}$
Reference Electrode	Gel	3 mol/l KCl	3 mol/l KCl	3 mol/l KCl
Membrane Shape	Cylinder	Cylinder	Cone	---
Diaphragm	Fiber	Ceramic	Platinum Wire	Ceramic
Material	Plastic	Plastic	Glass	Glass
Dimensions	Length 120 mm (4.7 in); diameter 12 mm (0.47 in) for all sensors			
Warranty	1 year	1 year	1 year	1 year
Cable Length	1.5 m	3 m	1.5 m	1.5 m

	Cond 301710Y and 301711Y	Cond 301720Y
Type	4-electrode, graphite	2-electrode, stainless steel
Conductivity Range	10 $\mu\text{S}/\text{cm}$ to 2,000 mS/cm ($\pm 0.5\%$ of value)	0.01 $\mu\text{S}/\text{cm}$ to 200 $\mu\text{S}/\text{cm}$ ($\pm 0.5\%$ of value)
Resistivity	0.5 Ohm cm to 100 kOhm cm ($\pm 0.5\%$ of value)	5 kOhm cm to 100 MOhm cm ($\pm 0.5\%$ of value)
Salinity	0.0 to 70.0 ppt ($\pm 0.5\%$ of value)	---
Total Dissolved Solids	0 to 1,999 mg/L; 0.0 to 199.9 g/L ($\pm 0.5\%$ of value)	---
Temperature Range	0 to 100°C (32 to 212°F)	0 to 100°C (32 to 212°F)
Temperature Accuracy	$\pm 0.2^\circ\text{C}$	$\pm 0.2^\circ\text{C}$
Cell Constant	0.475 cm $\pm 1.5\%$	0.1 cm $\pm 2\%$
Material	Epoxy	Stainless Steel
Dimensions	Length 120 mm (4.7 in); diameter 15.3 mm (0.6 in)	Length 120 mm (4.7 in); diameter 12 mm (0.47 in)
Warranty	2 years	2 years
Cable Length	301710Y-1.5 m, 301711Y-3 m	1.5 m

	Optical BOD 626500
Type	Optical; lifetime luminescence detection with self-stirring mechanism
Dissolved Oxygen Range	0 to 50 mg/L; 0 to 500% air saturation
Dissolved Oxygen Accuracy**	0 to 20 mg/L, ± 0.1 mg/L or $\pm 1\%$ of reading, whichever greater; 20 to 50 mg/L, $\pm 10\%$ reading (system)
Dissolved Oxygen Resolution	0.01 mg/L; 0.1%
Temperature Range	Ambient 10 to 40°C (50 to 104°F); Compensation mg/L-5 to 50°C (23 to 104°F) (extrapolates beyond 45°C)
Temperature Accuracy	$\pm 0.2^\circ\text{C}$
Temperature Resolution	0.1°C
Typical Response Time	95% in 22 seconds with stirring; 95% in 40 seconds without stirring
Warranty	2 years; 1 year DO sensor cap

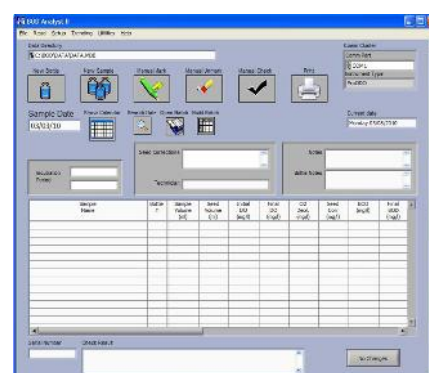
*accuracy of sensor electronics

**accuracy of system including probe, cable & instrument

Data Management

Beyond simply viewing data on the highly visible, graphic displays, data can also be managed with the following features:

- send real time data AND stored data to the PC via USB in .csv and ASCII formats. Capable of interfacing with LIMS.
- ability to transfer stored data in ASCII and .csv formats via USB memory stick (4010-2 and 4010-3 only)
- ability to send data to external printers (4010-2 and 4010-3 only)
- works with BOD Analyst Pro desktop software to automatically calculate BOD values



BOD Analyst Pro desktop software for the calculation of BOD's.

MultiLab Line Benchtop General Specifications

	Model 4010-1	Model 4010-2 and Model 4010-3
Measurement Channels	1	2 (4010-2) or 3 (4010-3)
Data Storage	500 data sets manual; 5,000 automatic	500 data sets manual; 10,000 automatic
Interface	Mini USB	Mini USB; USB-A
Display	Graphic, Backlit	Color, Graphic, Backlit
Power Supply	Universal power supply; 4 AA 1.5 V batteries	Universal power supply
All Models (4010-1, 4010-2, 4010-3)		
Parameters	pH, ORP (mV), Optical -Based DO %, DO mg/L (BOD probe), Partial Pressure, Conductivity, Resistivity, Salinity, TDS, temp.	
Temperature Compensation	Yes; except ORP	
Calibration Points	DO and Conductivity = 2; pH = 1 to 5	
Calibration Storage	Max. 10	
Calibration Timer	1 to 999 days	
GLP/AQA Compliant	Yes	
Certifications	CE, cETLus	
Warranty	3 years	

MultiLab Line Ordering Information

1FD350Y	4010-1 One channel IDS benchtop instrument; universal power supply; electrode stand; manual; software and USB cable
1FD460Y	4010-2 Two channel IDS benchtop instrument; universal power supply; electrode stand; manual; software and USB cable
1FD470Y	4010-3 Three channel IDS benchtop instrument; universal power supply; electrode stand; manual; software and USB cable
626570	BOD Lab Kit - Includes 4010-1 One Channel benchtop instrument (1FD350Y) and Optical BOD probe (626500)
626571	Advanced BOD Lab Kit - Includes 4010-1 One Channel benchtop instrument (1FD350Y), Optical BOD probe (626500) and BOD Analyst Pro desktop software for the calculation of BODs (625120)
626572	pH Lab Kit - Includes 4010-1 One Channel benchtop instrument (1FD350Y) and Double Junction pH electrode (103740Y)
626573	BOD/pH Lab Kit - Includes 4010-2 Two Channel benchtop instrument (1FD460Y), Optical BOD probe (626500) and Double Junction pH electrode (103740Y)
626574	Advanced BOD/pH Lab Kit - Includes 4010-2 Two Channel benchtop instrument (1FD460Y), Optical BOD probe (626500), Double Junction pH electrode (103740Y) and BOD Analyst Pro desktop software for the calculation of BODs (625120)
103740Y(4110)	pH, Plastic, Gel, Digital, Double Junction, 1.5 m (~ 5 ft) cable
103741Y(4110-3)	pH, Plastic, Gel, Digital, Double Junction, 3 m (~ 10 ft) cable
103750Y(4120)	pH, Plastic, 3 mol KCl, Digital, Double Junction, 1.5 m (~ 5 ft) cable
103780Y(4130)	pH, Glass, 3 mol KCl, Digital, Double Junction, 1.5 m (~ 5 ft) cable
103790Y(4210)	ORP, Glass, Digital, Double Junction, 1.5 m (~ 5 ft) cable
301710Y(4310)	Conductivity, Epoxy, 4-Graphite Electrodes, Digital, 1.5 m (~ 5 ft) cable
301711Y(4310-3)	Conductivity, Epoxy, 4-Graphite Electrodes, Digital, 3 m (~ 10 ft) cable
301720Y(4320)	Conductivity, Stainless Steel, 2-Electrodes, Digital, 1.5 m (~ 5 ft) cable
626500	Optical Dissolved Oxygen; Self-Stirring, BOD Probe, 2 m (~ 6.5 ft) cable
109830Y	Calibration Kit for IDS pH Electrodes; 3 ampules; pH 4.01, 6.86, 9.18
108131Y	pH Adapter DIN for 4010-2 and 4010-3
101132Y	pH Adapter BNC for 4010-2 and 4010-3
902867	Universal Power Supply
109813Y	Stand plus holder for electrodes
902883	USB cable for connecting instrument with USB-Mini B to a PC

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