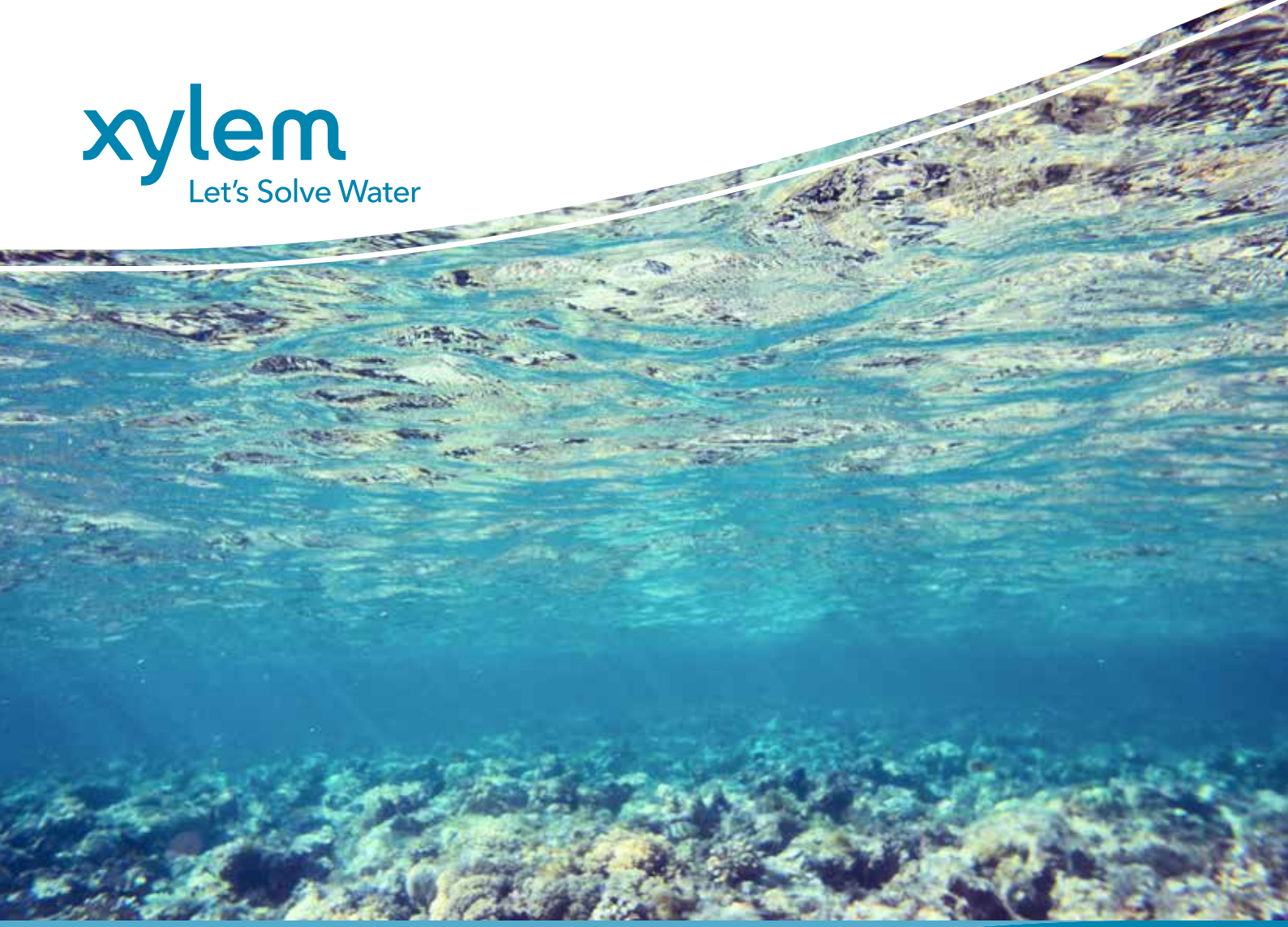
xylem
Let's Solve Water



Surface, Ocean & Coastal

XYLEM SOLUTIONS CATALOG

AANDERAA® Global Water mjk® SonTek® TIDELAND WTW® YSI®

2019-2020

Innovative Solutions for Challenging Problems

Xylem, is committed to providing our customers with solutions to their most challenging problems through the use of our expertise and innovative technology.

As part of that commitment, Xylem continues to develop and launch new innovative product lines, building upon our proven sensor and analytics technology. We take pride in improving and setting new standards in the markets that we serve.

Content

Welcome to Xylem Inc.

Company Overview

Xylem Analytics is a leading manufacturer of field, portable, online and laboratory analytical instrumentation. Xylem's analytical involvement spans right across the laboratory platform, from potable water analysis, through food, beverage, chemical, petrochemical, industrial, pharmaceutical and life science to effluent monitoring and control. Quality control, food safety and efficient processing are paramount at every stage of the industrial manufacturing cycle.

Measured Support for Proven Brands

Xylem Analytics' products are sold under a range of globally recognized brands. By bringing them into Xylem, the company provides increased focus on the brands and long-term support that customers can rely on. A complete portfolio enables Xylem Analytics to address its customers' operating and monitoring needs.

Global Support for Proven Brands

Our expertise stretches throughout the cycle of these specific industries, right across the globe. Our products are supplied through a carefully selected and fully trained network of distributors managed by regional offices to ensure customer satisfaction at every point before, during and after a product or service has been supplied. Quality of service and sustainability is paramount, no matter how large or small the requirement. From a simple hand held meter to a fully integrated process system, our aim is to serve the customer as best we can, this time, the next time and every time. To learn more about all of Xylem's brands, visit any of the websites below:

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xylem

rental solutions

Xylem Rental Solutions can help you solve even the most complex water challenges. From handheld water quality instruments right through to the AUV (autonomous underwater vehicle) which are designed to create high-resolution maps of water quality and bathymetrty.

We design, build, and manage scalable turnkey systems that provide greater efficiency, long-term operation, reliability, and peace of mind.

Why Rent?

- Eliminate costs associated with maintaining and storing equipment you own
- Scale up your existing fleet without capex investment.
- Pay only for the equipment and services you need, when you need it.

SOLUTIONS.
EXPERTISE.
FOR RENT.

...for your unique projects

Localised Integrated Systems and Solutions

What do you need?

We have years of systems integration experience, and provide local support for the installation, testing, commissioning and maintenance of Xylem and other related products.

Custom Monitoring Systems

Design and implement custom monitoring systems to meet goals and regulatory requirements.

Spatial Water Mapping

Surveys of reservoirs, lakes, streams, or open water study areas.

Field Deployment Solutions

Installation and maintenance in harsh and remote environments.

Open Channel Flow

Installation, deployment, and indexing using Xylem brand acoustic doppler instrumentation.

Data Delivery

Custom data acquisition and data visualization systems using cutting edge technology

Data as a Service

On-site professionals conduct water quality, bathymetry, side scan sonar, water velocity and discharge measurements / surveys.

Support/Maintenance

On-site contracted and preventive maintenance solutions to fit your needs and budget.

Contact Xylem Systems & Services about your next project!
AP-Systems@xyleminc.com

Featured Products

EXO3, Water Quality Sonde EXO Series Pg. 8

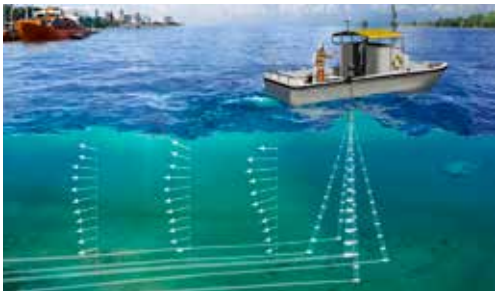
Offering the greatest value of any sonde available on the market, EXO3 combines the maneuverability of the EXO1 with the powerful antifouling wiper of the EXO2.

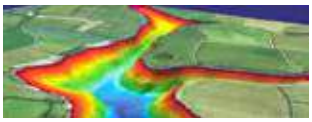
EXO3 is a purpose-built sonde for monitoring major water quality parameters, including: pH, conductivity, temperature, turbidity, and dissolved oxygen.

Extremely versatile instrument, allowing the user to automatically configure a sonde with different sensor for different applications in minutes.

SonTek HydroSurveyor Pg. 13

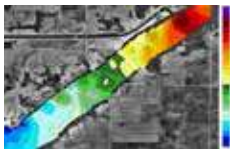
The HydroSurveyor is a system designed to collect bathymetric, water column velocity profile, and acoustic bottom tracking data as part of a hydrographic survey. The two key components of the system are the HydroSurveyor Acoustic Doppler Profiler (ADP®) platform, and the powerful, yet user-friendly, data collection software. With the HydroSurveyor platform, SonTek is able to offer an exclusive 5-beam depth sounding device, with built-in navigation, full water column velocity (currents) profiling, full compensation for speed of sound (with the CastAway-CTD), and integrated positioning solution.





YSI i3XO EcoMapper AUV Pg. 22

A unique AUV designed specifically for mapping water quality, water currents, and bathymetry. Navigate challenging natural environments with a monitoring platform that will generate the highest-resolution data at a low cost and low risk to your personnel.



DB600 Real Time Data Buoy Pg. 24

All-In-One, Rugged, Remote, Monitoring System

The DB600 is a completely integrated all-in-one IoT system for remote monitoring, supporting a range of sensor configurations.

The all-in-one system includes everything required to transmit sensor data direct to your fingertips, with industrial reliability suitable for critical applications. Fully programmable, high efficiency solar power system, online communications, and industry leading web interface, providing power and flexibility.

YSI 5500D Optical DO for Monitoring & Control Pg. 26

Designed specifically for aquaculture systems, the YSI 5500D continuous monitor for dissolved oxygen and AquaManager® Software can be used to integrate process control, feeding, alarming and data management into one product or can be used to simply monitor one tank.

With YSI's ODO® optical dissolved oxygen technology you'll benefit from reduced costs, less maintenance and better data. The ODO sensors require no membrane changes, no electrode cleaning, no stirring requirement and less frequent calibrations.

ProDSS Multiparameter Water Quality Meter Pg. 38

The YSI ProDSS (digital sampling system) handheld multiparameter meter provides extreme flexibility with two main cable options.

Choose between the fully loaded 4-port cable assembly outfitted with any four DSS sensors (with depth or no depth) or the ODO/CT probe and cable - where you get accurate DO measurements every time with an optical dissolved oxygen sensor with an inline conductivity sensor, allowing for real-time salinity compensation.

YSI EXO Handheld

Introducing the updated EXO Handheld from YSI, designed and engineered as a dedicated interface to EXO sondes. Log realtime data, calibrate sensors, set-up sondes for deployment, and transfer water quality data to a PC with this featurepacked device.

Designed for reliable field use in challenging environmental conditions, this display features a waterproof IP-67, impact-resistant case and wet-mate connector.

Features

- Lighten the load for long trips into the field with an ergonomic device that feels at ease in your hand while sampling and profiling
- Lower the learning curve of collecting high quality data with a simplified user interface and integrated help screens.
- Keep your sensors performing at their best with automatic calibration reminders based on your standard operating procedures.
- Build a georeferenced data set using GPS and site tagging functionality for up to 100 locations.

Size	8.3 cm x 21.6 cm x 5.6 cm
Weight	Weight with Battery, 567g
Power	Rechargeable lithium-ion battery pack provides ~48 hours if powering the handheld only and ~20 hours if powering the handheld, sonde and four sensors; battery recharge time is ~9 hours with the AC power adapter. The instrument can also be powered via AC or external power pack though the USB port.
Operating Temperature	0 to 50 °C
Storage Temperature	0 to 45 °C (32 to 113 °F) with battery installed; 0 to 60 °C (32 to 140 °F) without battery installed. Note: Storing Li-Ion batteries in cool environments will help extend their lifespan.
Graphic Display	Graphic display with detailed help menus and auto-sized dashboard text based on number of sensors
Warranty	3-year handheld; 1-year Li-ion battery pack
Memory	100,000 data, 512MB-Micro SD
User Calibratable	Yes, 400 detailed calibration records can be stored and are available to view, download and print for traceability.
GPS	Yes

EXO1 Multiparameter Sonde

4-port Multiparameter Water Quality Sonde

The EXO advanced water quality monitoring platform includes the versatile multiparameter EXO1 sonde for estuarine, surface water, or ground water applications.

Features

- High-accuracy sensors with on-board memory
- Wireless communications
- Fast response times for profiling and sampling
- Seamless integration into marine, estuarine, freshwater and ground water monitoring systems

Size	Diameter : 4.70 cm , Length : 64.77 cm
Weight	1.42 kg
Sensor Ports Peripheral Ports	4 Sensor Ports 1 power communication port
Operating Temperature	-5 to +50°C
Storage Temperature	-20 to +80°C (Exception: 0 to 60 °C for pH and pH/ORP sensors)
Depth / Pressure Rating / Limit	0 to 250 m

EXO2 Multiparameter Sonde

7-Port Multiparameter Water Quality Sonde

The EXO advanced water quality monitoring platform includes the versatile multiparameter EXO2 sonde for oceanographic, estuarine, or surface water applications.

Features

- High-accuracy sensors with on-board memory
- Wireless communications
- Seamless integration into marine, estuarine, freshwater and ground water monitoring systems

Size	Diameter : 7.62 cm , Length : 71.10 cm
Weight	3.60 kg
Sensor Ports Peripheral Ports	7 Sensor Ports (6 ports available when central wiper used) 1 power communication port; 1 auxiliary port for third-party sensors (future functionality; not active yet)
Operating Temperature	-5 to +50°C
Storage Temperature	-20 to +80°C (Exception: 0 to 60 °C for pH and pH/ORP sensors)
Depth / Pressure Rating / Limit	0 to 250 m

EXO2s Customized Multiparameter Sonde

7-Port Multiparameter Water Quality Sonde

We have heard from customers who need the payload and capabilities of YSI's best-in-class EXO2 sonde, but in spaces and places that can't accommodate the EXO2. EXO2s is a customized, batteryless sonde that comes with the same warranty and capabilities as the EXO2, and is ideal for specialized applications such as:

Features

- Attachment to an AUV or aerial drone
- Integration with a buoy
- Horizontal profiling where light weight is optimal
- High-accuracy sensors with on-board memory
- Wireless communications
- Seamless integration into marine, estuarine, freshwater and ground water monitoring systems

Size	Diameter : 7.62 cm , Length : 47.00 cm
Weight	1.60 kg with a full payload of 5 probes, 1 wiper, and probe guard installed
Sensor Ports **Peripheral Ports**	7 sensor ports (6 ports available when central wiper in use) 1 power communication port; 1 auxiliary expansion port
Operating Temperature	-5 to 50 °C
Storage Temperature	-20 to 80 °C (Exception: 0 to 60 °C for pH and pH/ORP sensors)
Depth / Pressure Rating / Limit	0 to 250 m
Power	No batteries. Must be powered by external source

EXO3 Multiparameter Sonde

5-port Multiparameter Water Quality Sonde

Offering the greatest value of any sonde available on the market, EXO3 combines the maneuverability of the EXO1 with the powerful antifouling wiper of the EXO2.

EXO3 is a purpose-built sonde for monitoring major water quality parameters, including: pH, conductivity, temperature, turbidity, and dissolved oxygen.

Features

- High-accuracy sensors with on-board memory
- Wireless communications
- Seamless integration into marine, estuarine, freshwater and ground water monitoring systems

Size	Diameter : 7.62 cm , Length : 58.67 cm
Weight	2.00 kg with a full payload of 4 probes, 1 wiper, and probe guard installed
Sensor Ports **Peripheral Ports**	5 sensor ports (4 ports available when central wiper in use) 1 power communication port
Operating Temperature	-5 to 50 °C
Storage Temperature	-20 to 80 °C (Exception: 0 to 60 °C for pH and pH/ORP sensors)
Depth / Pressure Rating / Limit	0 to 250 m
Power	2 Alkaline Batteries
Memory	512 MB total memory, >1,000,000 logged readings

EXO GO

The portability of EXO GO frees up your hands in the field. On-the-spot GPS coordinates and barometric pressure are viewed through the newest KorEXO Software running on both laptops and tablets. The device is IP-67 rated and highly ruggedized to withstand drops, drips, and dunks!

Features

- Keep your sonde in the water while you view your data in real-time, download files, or adjust deployment settings on the GO!
- Bring the full power of KorEXO to your site with any Windows OS portable device!
- Do more sampling with our long-lasting, rechargeable battery - lasts for up to 15 hours!

Size	17.4 x 5.2 x 3.5 cm
Weight	240 g
Power	Rechargeable Li-Ion battery (typically 9 hours of charging time for a full charge). 15+ hours of operating time (powering an EXO3 with full payload). 12 VDC voltage output.
Operating Temperature	-5°C to 50°C
Storage Temperature	0°C to 45°C
Connector	Female wet-mate connector, USB Micro-AB receptacle
Connectivity / Communications	USB 2.0, Bluetooth output: Class 2, 10 m typical range. 2.402 - 2.480 GHz.
GPS	GPS + GLONASS Receiver Type, Lat/Long = decimal degrees; Altitude= m or ft; 2.5 m CEP Horizontal Accuracy (actual results dependent on site conditions)

EXO Sensor


Total Algae Sensor


Turbidity Sensor


Standard C/T Sensor


ISE Sensor


Central Wiper


fDOM Sensor


pH/ORP Sensor


DO Sensor


Wiped C/T Sensor

Sensor**	Range	Accuracy*	Resolution
Barometric Pressure	375 to 825 mmHg	±1.5 mmHg from 0 to 50°C	0.1 mmHg
Blue-green Algae, Phycocyanin	0 to 100 µg/L 0 to 100 RFU	Linearity: R2 >0.999 for serial dilution of Rhodamine WT solution from 0 to 100 µg/mL BGA-PC equivalents	0.01 µg/L 0.01 RFU
Chlorophyll	0 to 400 µg/L Chl 0 to 100 RFU	Linearity: R2 >0.999 for serial dilution of Rhodamine WT solution from 0 to 400 µg/L Chl a equivalents	0.01 µg/L Chl 0.01 RFU
Conductivity[1]	0 to 200 mS/cm	0 to 100: ±0.5% of reading or 0.001 mS/cm, w.i.g. 100 to 200: ±1% of reading	0.0001 to 0.01 mS/cm (range dependent)
Depth [3]	0 to 10 m	±0.04% FS (±0.004 m)	0.001 m (auto-ranging)
	0 to 100 m	±0.04% FS (±0.04 m)	
	0 to 250 m	±0.04% FS (±0.10 m)	
Dissolved Oxygen	0 to 500% air saturation	0 to 200%: ±1% of reading or 1% saturation, w.i.g. 200 to 500%: ±5% of reading [4]	0.1% air saturation
	0 to 50 mg/L	0 to 20 mg/L: ±0.1 mg/L or 1% of reading, w.i.g. 20 to 50 mg/L: ±5% of reading [4]	0.01 mg/L
fDOM (fluorescent dissolved organic matter)	0 to 300 ppb Quinine Sulfate equivalent (QSE) measurement range	Linearity: R2 >0.999 for serial dilution of 300 ppb QS solution Detection Limit: 0.07 ppb QSE	0.01 ppb QSE
ORP	-999 to 999 mV	±20 mV in Redox standard solution	0.1 mV
pH	0 to 14 units	±0.1 pH units within ±10°C of calibration temp ±0.2 pH units for entire temp range [5]	0.01
Salinity (Calculated from Conductivity and Temperature 8)	0 to 70 ppt	±1.0% of reading or 0.1 ppt, w.i.g.	0.01 ppt
Specific Conductance (Calculated from Conductivity and Temperature 8)	0 to 200 mS/cm	±0.5% of reading or .001 mS/cm, w.i.g.	0.001, 0.01, 0.1 mS/cm (auto-scaling)
Temperature	-5 to 35°C 35 to 50°C	±0.01°C [2] ±0.05°C [2]	0.001 °C
Total Dissolved Solids (TDS) (Calculated from Conductivity and Temperature 8)	0 to 100,000 mg/L Cal constant range 0.30 to 1.00 (0.64 default)	Not Specified	Variable
Total Suspended Solids (TSS) (Calculated from Conductivity and Temperature 8)	0 to 1500 mg/L	Not Specified	Variable
Turbidity [6]	0 to 4000 FNU	0 to 999 FNU: 0.3 FNU or ±2% of reading, w.i.g. 1000 to 4000 FNU: ±5% of reading [7]	0 to 999 FNU = 0.01 FNU 1000 to 4000 FNU = 0.1 FNU
Ammonium (freshwater only)	0 to 200 mg/L (0 to 30°C)	±10% of reading or 2 mg/L-N, w.i.g.	0.01 mg/L
Chloride (freshwater only)	0 to 18000 mg/L-Cl (0 to 30°C)	±15% of reading or 5 mg/L-Cl, w.i.g.	0.01 mg/L
Nitrate (freshwater only)	0 to 200 mg/L-N (0 to 30°C)	±10% of reading or 2 mg/L-N, w.i.g.	0.01 mg/L
Level, Vented - 10 m	0 to 10 m	±0.03% FS (±0.003 m)	0.001 m

**Specifications indicate typical performance and are subject to change. All sensors have a depth rating to 250 m (820 ft), except shallow and medium depth sensors, ammonium, chloride, and nitrate. Accuracy specification is attained immediately following calibration under controlled and stable environmental conditions. Performance in the natural environment may vary from quoted specification.

w.i.g. = whichever is greater
EXO sensors are not compatible with YSI 6-Series sondes, sensors, or handheld.

1. Outputs of specific conductance (conductivity corrected to 25°C) and total dissolved solids are also provided. See Calculated Parameters and footnote 11.
2. Temperature accuracy traceable to NIST standards
3. Accuracy specifications apply to conductivity levels of 0 to 100,000 µS/cm.
4. Relative to calibration gases
5. Within the environmental pH range of pH 4 to pH 10.
6. Calibration: 1-, 2-, or 3-point, user-selectable
7. Performance based on 3-point calibration done with YSI AMCO-AEPA standards of 0, 124, and 1010 FNU. The same type of standard must be used for all calibration points.
8. Values are automatically calculated from conductivity according to algorithms found in Standard Methods for the Examination of Water and Wastewater (Ed. 1989).

Most conductivity cells cannot be fully cleaned by mechanical anti-fouling wipers, but the EXO Wiped (C/T) probe was purpose built to protect your conductivity data.

Central Wiper

In long-term water quality monitoring, biofouling is public enemy number one.

Biofilms, barnacles, and algal growth are common culprits of poor data quality, clogging up conductivity cells and coating sensor optics. While EXO2's Central Wiper can mechanically remove biofouling from other sensors to maintain data integrity over long deployment periods, the anatomy of a standard conductivity & temperature sensor makes this anti-fouling technique ineffective...until now.

Introducing the EXO Wiped Conductivity & Temperature sensor from YSI, designed with and engineered for compatibility with EXO2's Central Wiper.

Discover the benefits of Wiped C/T

- Save money by reducing the number of site visits each year. Pays for itself in under a year depending on application.
- Lower the cleaning & maintenance requirements for conductivity sensors, and spend less time with anti-fouling screens and removing the build-up of hard growth.
- Improve the reliability of your conductivity sensor, now with non-metallic electrodes. Leverage the flexible, plug-and-play sensor architecture of an existing EXO2 sonde with this user upgradeable solution.
- Improve the representativeness of your conductivity data by avoiding stagnant readings and reducing the impact of micro-environments.
- Reduce the need for post-processing data and spend less time manually adjusting for fouling-related sensor drift.
- Prevent common types of fouling from impacting your valuable data, including; particulates, algae, barnacles, and trapped gasses.

Copper tape wrapped sensors

Copper tape

Sensor guard

Copper alloy guard

EXO Wiped (C/T) Sensor Specifications		
Conductivity	Range	0 to 100 mS/cm
	Accuracy	±1% of the reading or 0.002 mS/cm, whichever is greater
	Resolution	0.0001 to 0.01 mS/cm (range dependent)
Specific Conductance	Range	0 to 100 mS/cm
	Accuracy	±1% of the reading or 0.002 mS/cm, whichever is greater
	Resolution	0.0001 to 0.01 mS/cm (range dependent)
Salinity	Range	0 to 70 ppt
	Accuracy	±2% of the reading or 0.2 ppt, whichever is greater
	Resolution	0.01 ppt
Temperature	Range	-5 to 50°C
	Accuracy	±0.2°C
	Resolution	0.001°C
	Response Time	T95<30 seconds

Additional Specifications	
Operating Temperature	-5 to 50°C
Storage Temperature	-20 to 80°C
Depth Rating	250 meters
Warranty	2 years
Compatible With	EXO2 Sonde and Central Wiper

Sensor condition after 90 days of deployment

CT sensor prior to antifouling measures. Cleaning brush couldn't reach inside sensor.

Sensor cleaning now possible

SonTek RiverSurveyor S5/M9

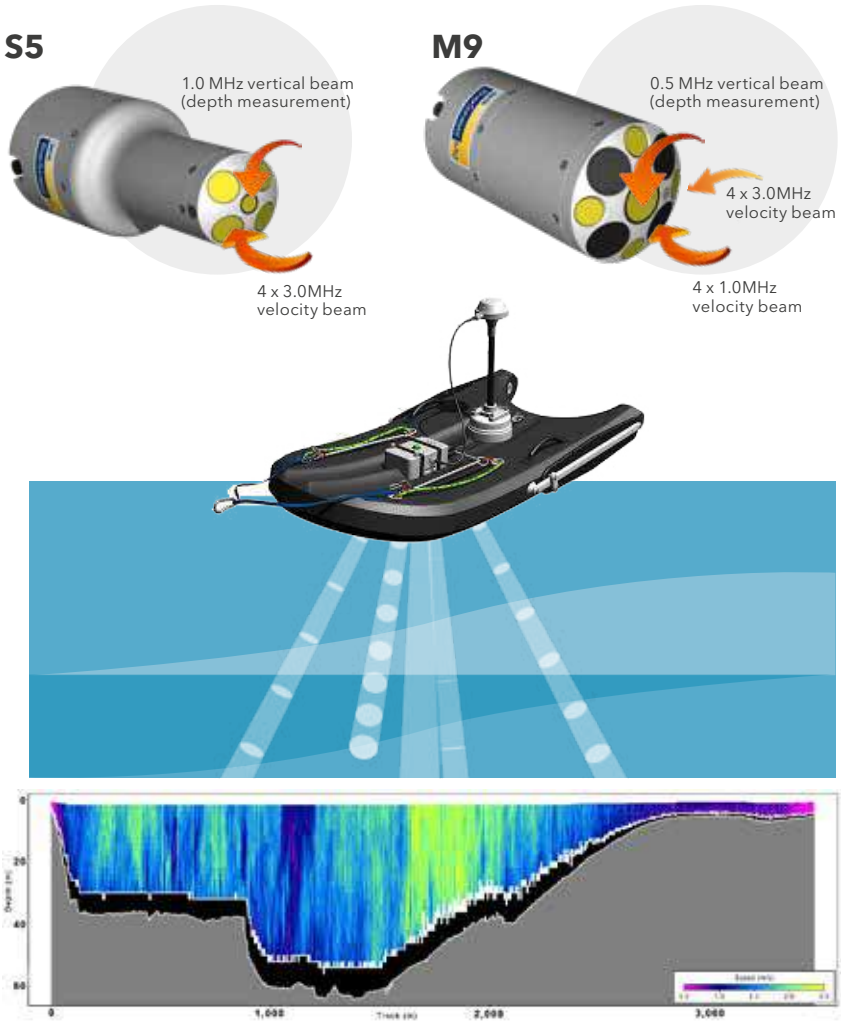
The RiverSurveyor S5/M9 is a river discharge measurement system without the traditional limitations. Small, portable and easy to use, the patented and award-winning RiverSurveyor measures in extreme flood or drought situations within a single instrument, and without changing user settings. The results speak for themselves - the RiverSurveyor S5/M9 has revolutionized the way discharge is measured in rivers and canals.

It's a SonTek exclusive - multiple acoustic frequencies with SmartPulseHD® make for the most robust and continuous shallow-to-deep measurements ever. An array of four deterministic microcontrollers expertly apportion the proper acoustics, pulse scheme, and cell size so you can focus on the measurement - not the instrument setup. The system even has a vertical beam for accurate channel definition and it's all designed to work intuitively. Slow to fast, shallow to deep, the RiverSurveyor S5/M9 handles it all on the fly.

Features	Benefits
Multi-band (Multiple acoustic frequencies)1,2	Balances the highest resolution with the greatest range of depths.
Vertical acoustic beam1	Superior channel definition for both bathymetric and discharge applications. Extends maximum discharge depth when bottom-tracking is out of range.
SmartPulseHD®3	An intelligent algorithm that looks at water depth, velocity and turbulence, and then acoustically adapts to those conditions using pulse-coherent, broadband, and incoherent techniques. High-def cell sizes down to 2 cm.
Microprocessor computed discharge and secure data1	All discharge computations are simultaneously done both within the S5 or M9, and on the host computer. No lost data if communications drop out.
Standard 360° compass and two-axis tilt sensor	Compensates for vessel motion due to surface conditions.
Reverberation control with ping rates to 70Hz	High ping rates ensure extremely robust data collection.
Bottom-tracking	Acoustically track vessel speed over ground independent of DGPS. Also supplies redundant depth measurement.
RTK GPS (optional)	Ultra precise positioning as an alternative to bottom tracking in moving bed or other difficult situations.

*1RiverSurveyor technology patent number 8,125,849
*2RiverSurveyor technology patent number 8,411,530
*3Patent Pending

Exceed your expectations both during and after the measurement with the RiverSurveyor Live! software suite for both PC and mobile platforms. All programs take full advantage of SmartPulseHD and the intelligent software ensures no loss of data during telemetry dropouts. Easily switch between computer or mobile devices during mid-measurement. Several quality indicators and statistics with selectable graphics provide instant feedback on data collection. Multi-language support includes Afrikaans, Catalan, Chinese, English (UK & US), French, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese, Spanish and Turkish.



The data above shows the RiverSurveyor's ability to measure from shallow waters to deeper than 40m.

SonTek HydroSurveyor

The HydroSurveyor is a system designed to collect bathymetric, water column velocity profile, and acoustic bottom tracking data as part of a hydrographic survey. The two key components of the system are the HydroSurveyor Acoustic Doppler Profiler (ADP®) platform, and the powerful, yet user-friendly, data collection software. With the HydroSurveyor platform, SonTek is able to offer an exclusive 5-beam depth sounding device, with built-in navigation, full water column velocity (currents) profiling, full compensation for speed of sound (with the CastAway-CTD), and integrated positioning solution.

Flexible and Fast

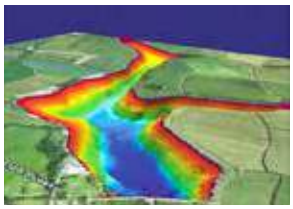
Water sound speed corrections are interpolated in both space and time with the fully integrated CastAway-CTD.

All Inclusive

Full water column velocity mapping, 5-beam depth sounding and acoustic bottom tracking (for speed over ground when GPS is lost) provide comprehensive data for a complete solution with a single package.

Software Centric

With built-in automatic data gridding and interpolation, even intricate surveys will not require specialized complex software, saving you time and money.



Features

- Sound speed integration and interpolation with SonTek CastAway-CTD
- Speed over ground (Acoustic Bottom Tracking)
- 5-beam depth soundings (50° swath)
- Water column velocity (currents) mapping
- Automatic data gridding and interpolation

CastAway CTD

The CastAway-CTD is a lightweight, easy to use instrument designed for quick and accurate conductivity, temperature, and depth profiles. Starting with a unique six-electrode conductivity cell and fast response thermistor the CastAway makes use of modern technology to provide state of the art CTD measurements.

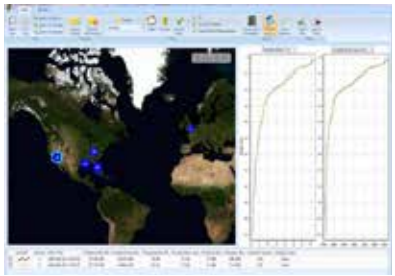
The palm-sized CastAway-CTD can easily be deployed from small boats. Each cast is referenced with both time and location using its built-in GPS receiver. Plots of conductivity, temperature, salinity and sound speed versus depth can be viewed immediately on the CastAway's integrated color LCD screen in the field.

The rugged, non-corrosive housing, AA battery power and tool-free operation reflect the technician-friendly pedigree of the CastAway-CTD. Profile data is easily downloaded via Bluetooth to a Windows computer for detailed analysis and/or export. The CastAway software displays profiles of the casts in addition to mapping the locations of the data collection points.

Matlab and integrates with RiverSurveyor software for applying sound speed corrections.

Features

- 5Hz response and sampling rate
- Accurate to 0.1 PSU, 0.05°C
- Internal GPS
- Bluetooth wireless data download
- No user calibration required
- No tools, computers or cables required



	Range	Resolution	Accuracy	Measured or Derived
Conductivity	0 to 100,000 µS/cm	1 µS/cm	0.25% ±5 µS/cm	Measured
Density•	990 to 1035 kg/m^3	0.04 kg/m^3	± 0.02 kg/m^3	EOS80••
Depth	0 to 100 m	0.01 m	±0.25% FS	EOS80••
GPS	-	-	10 m	-
Pressure	0 to 100 dBar	0.01 dBar	0.25% of FS	Measured
Salinity	Up to 42	0.01	±0.1	PSS-78†
Sound Speed	1400 to 1730 m/s	0.01 m/s	±0.15 m/s	Chen-Millero‡
Specific Conductivity§	0 to 250,000 µS/cm	1 µS/cm	0.25% ±5 µS/cm	EOS80••
Temperature	-5 to +45°C	0.01°C	±0.05°C	Measured

•Based on temperature resolution and accuracy.
••International Equation of State for sea water (EOS-80).
†1978 Practical Salinity Scale
‡ Chen-Millero, 1977. Speed-of-sound in sea water at high pressures.
§ Based on 100,000 µS/cm at -5°C.

Wading Discharge Measurement Instrument FlowTracker2

Portable. Precise. Practical.

The new FlowTracker2 (FT2) handheld Acoustic Doppler Velocimeter (ADV®) has all the technology you have grown to know and trust with the original FlowTracker, but now comes with functional, modernized features (Bluetooth, GPS and large color screen, to name only a few) based on the evaluation and feedback from hydrologists, researchers and scientists who have made the FlowTracker their instrument of choice.

FlowTracker2 Innovations

Some of the major improvements now featured in FT2 come straight from field users like you. Here is a short list of time-saving, fool-proof features:

- Battery life icon on the screen at all times. Pre-load the spare cartridge and replace, even mid-measurement, with no data loss
- Set up and save templates—no need to re-enter data every time you visit a site
- Embedded GPS for georeferencing with automatic or manual fixes
- Probes and handhelds are interchangeable—flexibility within agency teams and when sending equipment for service
- Improved ADV acoustics: faster pinging, lower noise and better standard error
- Depth measurement option employing SonTek's robust, patent-pending technique

Velocity Range	±0.001 to 4.0 m/s
Velocity Resolution	0.0001 m/s
Velocity Accuracy	±1% of measured velocity + 0.25 cm/s
Acoustic Frequency	10.0 MHz
Sampling Volume Location	10 cm from the center transducer
Minimum Depth	0.02 m
Depth Measurement Range	0 to 10m
Depth Measurement Resolution	0.001m
Depth Sensor Accuracy	+/- 0.1% of FS (temperature compensated over full operating range) +/- 0.05% Static (steady-state at 25°C) Additionally compensated for real-time water velocity, temperature, salinity, and altitude.
Temperature Sensor	Resolution: 0.01° C, Accuracy: 0.1° C
Tilt Sensor	Accuracy: 1.0°

Acoustic Doppler Velocimeter Software FlowTracker2 Lab ADV

Flagship ADV Technology

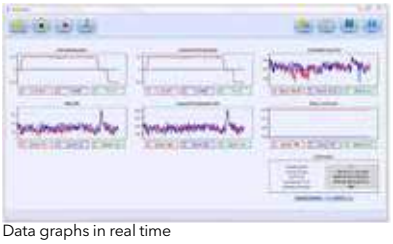
For decades, the Acoustic Doppler Velocimeter (ADV®) has been the preferred instrument for precisely-defined sampling of water velocity across a wide range of environments. The FlowTracker2 Lab ADV utilizes SonTek's continuing innovation in ADV platforms to offer a laboratory version of the world's best-selling ADV, the FlowTracker2.

For the first time, the ADV's acoustic probe and processing electronics are housed in one small, lightweight, easily maneuverable unit, and the acoustic head has an optional, integrated pressure (depth) sensor.

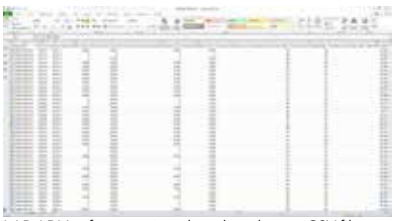
Depth data are even correctable for dynamic pressure (Bernoulli) and altitude effects using SonTek's patent-pending method. Setup of the probe and PC software is simple and mis-take-proof. Just connect the cables between the probe and your laboratory PC or laptop, check a few settings, and press the "Start Logging" button. Data are output directly to a *.CSV file that is immediately ready for use in the project, model, or database as required.

FT2 Lab ADV Recommended For Use In:

- Civil engineering, environmental, and hydraulic projects
- Aquaculture and aquarium operations
- Surface and bottom boundary studies
- Tanks, flumes, and physical models
- Very shallow water environments
- Turbulence
- Settling rates
- Fish screens



Data graphs in real time



LAB ADV software writes data directly to a .CSV file

Digital Handheld Water Velocity Meters FP111, FP211, FP311

Global Water

Global Water's FP111, FP211 and FP311 Flow Probes are highly accurate water velocity instruments for measuring flows in open channels and partially filled pipes. The water velocity probe consists of a protected water turbo prop positive displacement sensor coupled with an expandable probe handle ending in a digital readout display. The water flow meter incorporates true velocity averaging for the most accurate flow measurements.

Each flow probe has the unique Turbo-Prop propeller sensor, which uses the most accurate positive displacement technique available for velocity sensing. The Turbo-Prop is designed to shed debris and is protected inside a 2 inch diameter housing. The probe housing may be placed directly on the bottom of a pipe or streambed for measuring low flows down to 2 inches in depth. The flow meter propeller rotates freely on its bearing shaft with no mechanical interconnections for minimal friction.

Range
0.3-19.9 FPS (0.1-6.1 MPS)
Accuracy
0.1 FPS
Averaging
True digital running average. Updated once per second.
Datalogger
30 sets, MIN, MAX, and AVG
Sensor Type
Protected Turbo-Prop propeller with magnetic pickup.
Weight
Instrument: 0.9 kg (FP111), 1.4 kg (FP211), 1.3 kg (FP311) Shipping: 5.9 kg (FP111), 10.4 kg (FP211), 8.6 kg (FP311)
Expandable Length
1.1 to 1.8 m (FP111), 1.7 to 4.6 m (FP211), 0.76 to 1.7 m (FP311)

SonTek-IQ Series

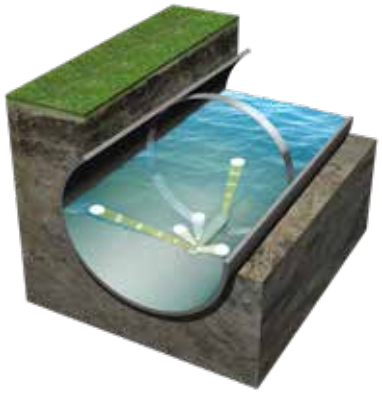
rental SonTek

TheSonTek-IQ Series are three products that provide high quality flow, total volume, level and velocity data for challenging conditions that fit your budget. Custom flow algorithms, carefully designed and tested, ensure all these products in the Series will deliver the data you need to make smart decisions about your water. Each system offers four independent velocity beams that can accurately map the cross-section velocity, both in the center and out towards each edge. *The SonTek-IQ Series is not IS or ATEX certified. Do not use in areas with explosion risk.

- Fully self-contained, all-in-one design
- Measure flow in man-made or natural channels, pipes or streams between 8 cm and 5 m deep
- Uses SonTek's exclusive SmartPulseHD® adaptive sampling technology under all conditions
- Four, pulsed Doppler velocity beams for great section coverage
- Specialized flow algorithms for open channels and/or closed pipes, including irregular shapes

Flow Display

- Seamless integration – replaces the cable adaptor
- LCD provides 4 lines of 20 characters of information
- Two keys – Backlight and arrow key allow for cycling through the data
- Status lights to indicate Modbus communications,
- Modbus Error, SonTek IQ communications and Power



The SonTek-IQ Pipe is intended as either a bottom or top mounted flow meter that can be used in most industrial or agricultural applications. Unlike many other flow meters available today, the SonTek-IQ Pipe automatically determines if the pipe is full or partially full, and identifies the best technique to use to measure the velocity of the water.

Specifications	SonTek-IQ Standard	SonTek-IQ Plus	SonTek-IQ Pipe
Application	Regular Canals	All Open Channels	Pipes & Culverts
Velocity Measurement			
Sampling Range	0.05 – 1.5 m	0.05– 5.0 m	0.05 – 5.0 m
Number of Cells	1	Up to 100	Up to 100
Cell Size	Dynamically integrated	2 cm – 10 cm	2 cm – 10 cm
Velocity Range	±5 m/s		
Resolution	0.0001 m/s		
Accuracy	±1% of measured velocity, ±0.5 cm/s		
Water Level			
*Vertical Beam Range	0.05 – 1.5 m	0.05 - 5.0 m	0.05 - 5.0 m
*Acoustic Frequency	3.0 MHz		
Communications	RS232, SDI-12, Modbus, Analog (via optional Flow Display)		
Data Storage	4 GB (approximately 1 year)		
Power	4 GB		
*Input	9-15 VDC		

*1 For use in pressurized pipes. Housing rated to 42 psi.

SonTek-SL Series

- Concrete and Natural Channels
- River Discharge Monitoring
- Ports and Harbors
- Irrigation Canals
- Shallow Streams
- Water Supply
- Hydropower
- Stormwater
- Municipal
- Estuaries

Simple. Sleek. Superior.
Inspired by the need for a SIMPLE way to measure water velocity and level in open channels, the SonTek-SL (affectionately known as the Side-Looker or "SL") has earned worldwide acceptance as a long-term monitoring solution. Now, with two new (3G) models turbo-charged by our proprietary SmartPulseHD®, the SonTek-SL features accessories, mounting options, software, and a variety of integration formats to ensure it fits your application.

Designed specifically for side mounting on bridges, canal walls, or riverbanks, the SL's SLEEK, low-profile housing makes installation easy. With three models to choose from, the SL can be used in channels as small as you can jump across to rivers as wide as the Amazon. Ultra narrow beam widths combined with unmatched side lobe suppression provide the SUPERIOR acoustic directivity necessary for achieving maximum horizontal range free of interference from surface or bottom boundaries.

Features	Benefits
Water Velocity and Level	Water velocity, level, flow, and total volume-multiple parameters from one easy-to-use instrument. Acoustic Doppler profile of velocity data and acoustic water level offer the most accurate, reliable measurements.
SmartPulseHD®* (3G models only) *patent pending	An intelligent algorithm that looks at water depth, profiling range, velocity, and turbulence, and then acoustically adapts to those conditions using pulse-coherent, broadband, and incoherent techniques. Best data possible under any condition. High-def cell sizes down to 4 cm.
Compact, Hydrodynamic Design	Incredibly lightweight and easy to transport and mount. Slim shape is easy to maintain, stays clean, increases available sample area, and fits into more places.
Water Velocity Profiling	Customizeable, flexible setup options to suit a variety of applications. 3G models offer 128-cells for high-resolution and detailed profiles.
Acoustic-Pressure "Duo" Water Level (3G models only)	Not only redundant sources of water level, the acoustic vertical beam and pressure sensor continually self-check, and pressure data are auto-corrected to keep atmospheric offset negligible.

Argonaut-SL Side Looking

SonTek-SL500: Long-Range Option for Rivers, Ports and Harbors

A reliable classic, the SL500 delivers data mid-channel, yet is mounted pier or shore-side for quick access and maintenance, without the use of divers or boats. It is lightweight and easier to mount than comparable systems, yet delivers horizontal ranges up to 120m.

Argonaut®-SL

- Vertical acoustic beam plus pressure sensor for water level
- "Multicell" velocity profiling
- "Independent" velocity measurement cell. This cell can be different in size from the multicells and located anywhere within the instrument's sampling range. This cell is used for flow calculations or other specialized functions
- Flow computation and output, including total volume
- FlowPack Velocity-Index Discharge Rating software package

SonTek-SL1500 (3G): Mid-Range Option with Wide Array of Use

A slimmed-down design and SmartPulseHD® makes the SL1500 (3G) the most versatile system available. Collect high-quality data in a horizontal profile, range of 0.2m to 20m. Get the highestresolution and data quality possible - even as conditions change - courtesy of SmartPulseHD intelligence applied specifically for side-looking operation.

SonTek-SL3000 (3G): Great Things Come in Small Packages

The industry's smallest, most lightweight and affordable side-looking Doppler profiler. The SL3000 (3G) is capable of small sample volumes and narrow channel dimensions as small as 0.5m. Get the highest resolution possible of any side-looking Doppler profiler with cell sizes of 4cm.

	SL500	SL1500 (3G)	SL3000 (3G)
Sampling range•	1.5 to 120m	0.2 to 20m	0.1 to 5m
Minimum Channel Width	6.5m	1.0m	0.5m
Internal Nonvolatile Memory	4GB		
Water Velocity			
- Range	±6 m/s	±7 m/s	±7 m/s
- Resolution	0.001 m/s	0.0001 m/s	0.0001 m/s
- Accuracy	±1% of measured velocity; ±0.005 m/s	±1% of measured velocity; ±0.005 m/s	±1% of measured velocity; ±0.005 m/s
Water Level			
- Vertical Beam Range	0.2 to 18.0 m	0.15 to 10 m	0.1 to 5.0 m
- Pressure Sensor Range	20 m	30 m	30 m
- Pressure Sensor Accuracy (FS)	0.25% FS	0.10% FS	0.10% FS
Power Input	7-15 VDC	9-15 VDC	9-15 VDC
Pressure Rating (Max Depth)	30 m		

Argonaut XR

Optional Features

- External battery pack for autonomous operation
- RPT Pressure sensor (20m max depth)
- Integrated CT sensor

Maximum range may vary depending on environmental conditions.

The Argonaut-XR offers exceptional value for current profiling applications. Its small size, rugged build quality, and flexible system architecture make the Argonaut-XR very attractive for both real-time operation as well as autonomous deployments.

SonTek's exclusive MultiCell feature allows you to preprogram 10 fixed velocity cells wherever you want, then an 11th dynamic cell can be set to automatically change its position or size as the water level changes.

The basic autonomous system includes batteries, internal recorder, compass/tilt sensor, pressure and temperature sensors. Adding options such as the SonWave package, or a CT sensor, make the Argonaut-XR the centerpiece of a complete oceanographic system.

	3.0 MHz	1.5 MHz	0.75 MHz
Maximum Range*	6.0 m	20.0 m	40.0m
Resolution	0.2 m	0.4 m	0.8 m
Water Velocity	Range : ±6 m/s, Resolution : 0.1 cm/s, Accuracy : ±1% of measured velocity, ±0.5 cm/s		
Temperature Sensor	Resolution : 0.01°C, Accuracy : ±0.1°C		
Compass/Tilt Sensor	Resolution : 0.1°, Accuracy(Heading) : ±2.00°, Accuracy(Pitch, Roll) : ±1°		
Depth Rating	200 m		
Dimensions (dia x h)	15.2cm x 18.0cm		
Weight	in Air : 2.5 kg, in Water : -0.3 kg		
Operating Temperature	-5° to 40°C		
Storage Temperature	-10° to 50°C		
Internal memory	stores over 20,000 samples		

Acoustic Doppler Profiler (ADP)

The SonTek ADP (Acoustic Doppler Profiler) is a high-performance, 3-axis (3D) water current profiler that is accurate, reliable, and easy to use. The ADP uses state-of-the-art transducers and electronics designed to reduce side-lobe interference problems that plague other current profilers. This allows the ADP to make the very near-boundary (surface or bottom) current measurements critical to shallow water applications.

Standard Features

- 0.25, 0.5, and 1.0-Mhz models
- Profiling ranges up to 180m
- Side-looking configurations for horizontal profiling
- Bottom Tracking & GPS input for moving boat applications
- Compass and 2-Axis Tilt Sensor
- ViewADP software for post-processing
- Low power consumption
- Temperature sensor
- Low price
- Proven SonTek reliability

Optional Features

- SeaBird MicroCat CT Sensor
- Optical Backscatter Sensor (OBS)
- Internal Recording
- Pressure Sensor (Strain Gage)
- Pressure Sensor (Frequency–RPT)
- Directional wave measurement capabilities - SonWavePro option allows custom plots for Polar displays, Time-series displays, and Spectral displays

Maximum Profiling Range	1000 kHz: 25m to 35m	500 kHz: 70m to 120m	250 kHz: 160m to 180m
Velocity	Range (up to 100 range cells) :±10 m/s, Resolution : 0.1 cm/s, Accuracy : ±1% of measured velocity, ±0.5 cm/s		
Power Input	12-24 VDC		
Typical Continuous Operating Power Consumption	2.0 to 5.0 W frequency and configuration dependent		
Typical Sleep Mode Power Consumption	< 1 mW		
Battery capacity (alkaline, 3 packs at 5°C)	1800 W·h		
Compass/Tilt Sensor	Resolution : 0.1°, Heading Accuracy : ±2°, Pitch, Roll Accuracy : ±1°		
Temperature	Resolution : 0.01°C, Accuracy : +/- 0.1°C		
Working Battery Capacity (using 80% total capacity)	• Standard ADP system: 3 packs 1800 WH • Mini-ADP system: 2 packs 1200 WH (optional sensors consume additional power)		
Pressure rating	500m (pressure sensor dependent)		
Operating Temperature	-5 to +40°C		
Storage Temperature	-10 to +50°C		

Doppler Water Current / Quality Meter

Recording Current Meter RCM Blue

The RCM Blue is a rugged self-recording current meter with Bluetooth for communications and data retrieval. The instrument uses a true vector-averaging sensor for measuring current speed and direction in salt or fresh water, and a battery container with battery capacity up to 70Ah.

Features

- Internal data storage
- Configuration and data retrieval by use of Bluetooth
- Battery compartments with up to 70Ah
- External LED with color code reports status
- Software for configuration and retrieval of data and USB to Bluetooth adapter included
- Unique ZPulse multi-frequency acoustic technology improves data quality, sampling speed and reduces power consumption
- Built-in solid state three axis compass and tilt sensor with compensating algorithm

Recording System:
Internal data storage

Storage Capacity: Standard 1GB

Battery: 2 battery compartments inside case

Alkaline 3988: 9V, 15Ah

Lithium 3908: 7V, 35Ah

Recording Interval: 2s to 2h

Depth Capacity: 300m

Platform Dimensions:
H: 356mm OD: 139mm

Weight: In Air 7.0kg / In Water 1.7kg

Operating Temperature: -5 to +50°C

Range: 0 to 300cm/s

Resolution: 0.1mm/s

Accuracy: ±0.15cm/s

Doppler Current Profiler + Wave Recorder SEAGUARDII DCP Wave

The optimal solution to measure directional waves, currents and water quality in one instrumentwith multi-sensor capability.

The SeaGuardII DCP Wave is a 600kHz Doppler Current Profiler that can measure directional wave parameters and currents from a bottom mounted installation.

Available as a self-recording instrument, it is easily integrable into a real-time system offering reliable two-way communication.

WAVE	Range	Resolution	Accuracy
Height	0.2m - 20m	1cm	± 5cm or <1% of value
Period	3-30 sec	<0.05 sec	<1%
Direction	0-360°	0.1°	<2°(RMS)

Acoustic frequency: 600 kHz

Typical profiling range:
Broadband: 30m to 70m
Narrowband: 35m to 80m

Cell size: 0.5m to 5m

Cell overlap: 0-90%

Velocity range:
Broadband: 0 to 400cm/s
Narrowband: 0 to 500 cm/s
(1000cm/s with max tilt ± 5°)

Velocity accuracy:
0.3cm/s or ±1% of reading

Velocity resolution: 0.1cm/s

Velocity precision: <3,3cm2

Ping rate: Up to 10Hz (config dependent)

Cell positioning:
Instrument or surface referred

Multiple columns:
3 simultaneous columns + Surface cell

Recording Current Meter SEAGUARD RCM

Smart sensors

The SeaGuard RCM series is based on the SeaGuard data logger platform and the ZPulse Doppler Current Sensor. Modern computer technology combined with advanced digital signal processing provides accurate and detailed measurements with almost unlimited resolution. Optional parameters are available through a wide range of smart sensors that include temperature, pressure, conductivity, oxygen, wave and tide.

Advantages

- Large storage capacity on SD card
- Broadband ZPulse multi-frequency technology reduces power consumption and improves quality
- Down to 2 second recording interval
- Low current drain
- For use in sea and fresh water
- Smart sensor topology based on a reliable semi-high speed CANbus interface (AiCaP)

Storage Capacity: ≥ 2GB

Battery: 2 battery compartments inside case

Alkaline 3988: 9V, 15Ah
(nominal 12.5Ah; 20W down to 6V at 4°C)

Lithium 3908: 7V, 35Ah

Recording Interval: From 2s, depending on the node configuration for each instrument

Recording settings: Fixed interval settings or customized sequence setting

Protocol: AiCaP CANbus based protocol

Depth Capacity: 300m/3000m/6000m, 7000m and 10000m on request

Platform Dimensions:
300m version (SW): H: 356mm OD: 139mm
2000m version (IW): H: 352mm OD: 140mm
6000m version (DW): H: 368mm OD: 143mm

In-line ZPulse Doppler Current Sensor

5800 / 5810 / 5800R / 5800RR / 5810E

The In-line Doppler Current Sensor (DCS) is the first current sensor with the option to directly connect water quality sensors in a robust, integrated package (version 5810). The sensor replaces the successful DCS4100 in-line current sensor using newer technology with extending capabilities. It is designed for easy integration
into systems with Aanderaa or third-party dataloggers.

Based on a modified version of the ZPulse Doppler Current Sensor 4520, it connects through a combined mooring and signal cable.
For buoy application, when the buoy creates magnetic interferences with the internal sensor compass, it is possible to use an external compass solution.

Velocity measurement:	
Current Speed: (Vector averaged)	
Range: 0–300cm/s	
Resolution: 0.1mm/s	
Mean Accuracy: ±0.15cm/s	
Relative: ± 1% of reading	
Statistic precision (std): 0.3cm/s (ZPulse mode), 0.45cm/s 1)	
Current Direction:	
Range: 0–360° magnetic	
Resolution: 0.01°	
Accuracy: ±5° for 0-15° tilt ±7.5° for 15-35° tilt	
Tilt Circuitry:	Compass Circuitry:
Range: 0-35°	
Resolution: 0.01°	Resolution: 0.01°
Accuracy: ±1.5°	Accuracy: ±3°
Acoustics	
Frequency: 1.9 to 2.0MHz	
Power: 25 Watts in 1ms pulses	

DCPS Doppler Current Profiler Sensor

5400/5400R/5402/5402R/5403/5403R

The Doppler Current Profiler Sensor (DCPS) is a medium range, 600kHz current profiler smart sensor. It features innovative development of the acoustic profiling ability to collect high quality current information also on moving and tilting platforms. Available as 300m depth rated (5400/5400R), 4500m (5402/5402R), 6000m (5403/5403R). The DCPS 5400/5402/5403 can be connected to a SeaGuardII or SmartGuard using the CANbus based AiCaP protocol. It can also be connected to a PC or third party systems through the RS-232 interface using the AADI Real Time Collector or SmartSensor Terminal protocol. This makes the DCPS the ideal cost effective solution for obtaining current profiles in systems already containing a Datalogger.

The 5400R/5402R/5403R has the RS-422 interface for use on longer cables.

Velocity profile measurement
Acoustic frequency: 600 kHz
Typical profiling range: Broadband: 30-70m Narrowband: 35-80m
Cell size: 0.5m - 5m
Cell overlap: 0-90%
Velocity range: Broadband: 0-400cm/s Narrowband: 0-500cm/s (up to 1000cm/s with max tilt ± 5°)
Velocity accuracy: 0.3cm/s or ±1,5% of reading
Velocity resolution: 0.1cm/s
Velocity precision: <3,3cm^2
Ping rate: Up to 10Hz (depends on config)
Output interval: from 30s to 2h
Cell positioning: Static (instrument referred) Dynamic (surface referred)
Number of columns: 3 simultaneous columns + Surface cell3

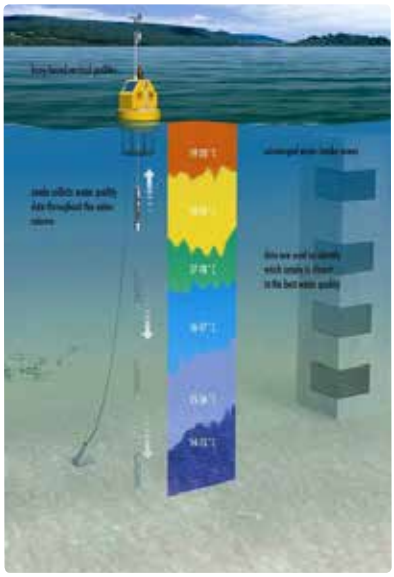
SEAGUARDII DCP Dual Head

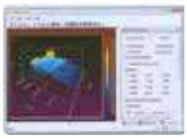
The SeaGuardII DCP Dual Head is an efficient solution combining two 600kHz profiler DCPS (Doppler Current Profiler Sensor).

The Dual Head solution is designed for use in moorings where accurate profiles with up to 160m total range is required. Dual transducer heads double the range of a standard 600kHz profiler. Combined with the SEAGUARD II, it offers configuration flexibility to address different applications scenarios, an advanced compensation for environment interference, increased data quality control and easy data recovery.

Total range up to 160m with 150 individual cells
600kHz profiler with broadband and narrowband modes
Real-time and autonomous
Cell size: 0.5 to 5 m
Less demand for homogeneity in the water column with half the beam separation
Cell size selectable from 0.5 to 5 metres
All the benefits of SeaGuardII

Vertical Profiling Systems





Advantages of a Vertical Profiling System

- Real-Time Monitoring. User-selectable sample intervals allow real-time monitoring to be customized to your specific site needs.
- Simple Software. Set-up, analyse and export data easily with the user-friendly vertical profiler software.
- Rugged Build. Our vertical profiler systems are designed with a rugged, non-corrosive mechanical winch and drive mechanism.
- Deliver Data. Send data to a base station computer, while the web-enabled option posts data directly to a public or private web site.

*Several wireless data transmission options available

The Pontoon/Buoy Vertical Profiling System offers user-programmable sample intervals, redundant error recovery logic that recovers automatically, and is compatible with all YSI EXO and 6-Series sondes equipped with depth. The profiler systems provide reliable, fully-automated data collection. The profiling systems also come with rugged, non-corrosive mechanical winch and drive mechanism, Profile Wizard software for easy set-up and deployment, Profile data analysis and export software, user selectable sample intervals, optional meteorological package, and several wireless data transmission options.

The Fixed Profiling System mountable on a dam, pier, piling, or other stationary location. It offers user-programmable sample intervals with wireless transmission options. This Fixed Profiler is compatible with all YSI EXO and 6-Series sondes equipped with depth, and comes with Profile Wizard software for easy set-up and deployment. The fixed vertical profiling system, when equipped with a fully loaded EXO or 6 Series sonde, can be programmed to move up and down the water column at regular intervals collecting valuable data on the waters condition with respect to various parameters. That information can then be relayed via telemetry or a direct connection such as Ethernet so that water treatment managers can view the data in real time. With this information, managers can adjust water treatment operations.

SEAGUARD String System

The Aanderaa SEAGUARD String System is a complete and fl exible subsea observatory, for measurements of e.g. DO, conductivity, temperature, current, pressure and tide etc.

SEAGUARD String Logger
The Aanderaa SEAGUARD String Logger is the basic module of the SEAGUARD String System. The SeaGuard String Logger is capable of handling a large number of sensors. Data stored on internal SD-card or Real-time via cable.

Advantages

- Great flexibility: data registration from up to 25 nodes
- Customer specified outlet positions
- Protective fastening fixture with hydrodynamic design
- Each outlet position can hold 2 sensors inside
- Optional, sensors can be connected on fl y leads (up to 3m) with or without underwater mateable electrical connectors
- Up to 300m cable length

SEAGUARD Sensor String
The new Aanderaa SEAGUARD Sensor String is designed to be connected to the SEAGUARD String logger. The SeaGuard String System can hold up to 25 AiCaP Sensors. Real-time communication and control is available using the Aanderaa Real-Time Collector.

- Low maintenance
- Extended RAM for large number of nodes
- Large storage capacity on an SD card
- Real-Time XML Output RS-422 (optional)
- Short recording interval
- Plug and play sensor configuration
- AiCaP communication bus for automatic detection and recognition of sensors at power up
- Windows CE interface, display in colours
- SEAGUARD Studio visualization software
- 300m/2000m/6000m version
- External power supply 12 - 30V internally regulated
- Up to 4 Analog sensor input (0-5V) (optional)
- For use in sea and fresh water

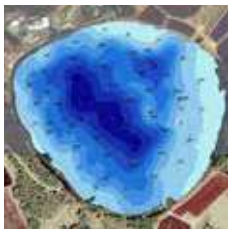
rQPOD Modular Remote Survey Boat

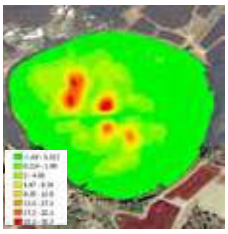
Xylem brings together a number of leading technological brands including SonTek, HYPACK and YSI to provide the world's most innovative hydrographic and bathymetric survey systems.

The rQPOD is a modular system that when attached to a standard size Torrent Board housing both SonTek M9 and S5 RiverSurveyor ADP systems, transforms into a motorised platform facilitating remote shore operation for easy collection of ADP data.

Features

- Colour coded parts and cables for easy assembly
- 1.5m/s top speed
- Easy control with high and low speed settings
- 2 removable, field serviceable thrusters with FCS fittings
- Removable skid guards to protect thrusters
- Removable batteries
- Lightweight (12kg incl. Torrent Board, M9, PCM & rQPOD)





Dimensions	
Length 1.08m x Width 0.65m	
Weight	
12kg incl. Torrent Board, M9 ADPCP and PCM	
Top speed	
1.5m/s	
Duration	
4 to 6 hours	
Temperature Range	
-10°C to +40°C	
Power	
DJI Phantom 3 LiPO batteries	
Transmitter range/model	
500m / Futaba T6K	
IP rating	
IP67	
Data Collection Software	
HYPACK-HYSWEEP	

HYPACK

Planning, Acquisition, Synchronization & Processing: **HYPACK-HYSWEEP®** provides the tools necessary to design a survey, collect and process ADCP bathymetric data, calculate volume quantities, generate contours, and export data to XYZ, DXF, LAS, etc.

Water Sampling Drone WSD4

Xylem introduces it's first portable autonomous water quality measurement system designed specifically for fast, safe access to challenging sites.
The WSD4 is able to sample dangerous and in accessable water bodies such as mining pits, rivers, lakes and aquaculture pens.

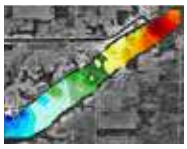
A unique feature of the WSD4 is it's ability to either hover and sample or float and take measurements, profiling to a depth of 40m.

Features

- All-weather industrial drone IP43
- Paired with YSI EXO2 sonde and sensors
- Real-time data availability (locally and to cloud)
- Profiling to 40m
- Acoustic "distance to bottom sensor"
- GPS position referenced data
- Camera for capture of waterway conditions, ie. algae blooms, oil spill, contamination plume, etc.
- Grab sampling in development as of June,2019

Diagnol Wheelbase	
1060mm	
Weight	
11kg incl. DZ-12000mAh battery	
Max Speed	
18m/s	
Hovering time	
(7kg load) 17min with 1 MG-12000 battery (10kg load) 11min with 1 MG-12000 battery	
Max. Wind resistance	
10m/s	
Dimension of Drone	
(folded) 530mm*480mm*430mm (unfolded) 860mm*860mm*525mm	
Propulsion System	
E5000	
Basic Configuration	
IA3*1, IMU*2, GPS*1	

i3XO EcoMapper AUV



A unique AUV designed specifically for mapping water quality, water currents, and bathymetry.
Navigate challenging natural environments with a monitoring platform that will generate the highest-resolution data at a low cost and low risk to your personnel.

Features

- Reliable autonomous underwater vehicle with DVL navigation
- Flexible options for water quality, bottom mapping, water current profiling, and side-scan sonar
- Data logged continuously as vehicle moves through water column
- Deployable by one person
- Easy and fast mission planning
- 8 - 14 hour run times at speeds of 2 - 4 knots
- Built in Wi-Fi

Applications

- Baseline Monitoring
- Source Water Mapping
- Coastal & Ocean Research
- Bottom Mapping
- Point Source and Non-point Source Mapping

Dimensions

Length	: 152 to 216 cm
Tube Diameter	: 14.7 cm
Weight	: 31.5 kg

Depth Rating

100 m

Endurance

8 - 14 hours at 2.5 knot speed; configuration dependent

Speed Range

0.5 - 2.0 m/s

Communication

Wireless 802.11 g Ethernet standard (Iridium and Acomms optional)

Antenna Mast

Navigation Lights, with IR and Visible LEDs (programmable strobe)

Tracking Internal Data Log; Software

Programmable resolution

Software

Vector Map :
Mission planning and data viewing
SonarMosaic :
Creates GeoTiff images of side scan records and KMZ files for Google Earth
BathyMosaic :
Creates GeoTiff images for bathymetry data
Underwater Vehicle Console (UVC) :
Operation, run mission, remote control

Energy

800 WHrs of rechargable Lithium-Ion batteries (Swappable selection)

Onboard Electronics

Intel Dual Core 1.6 GHz N2600 processor with MS Windows embedded; Up to 512 GB Solid State Drive for data storage

Propulsion System

48 V Servo Controlled DC Motor with 3-blade cast bronze propeller

Control

Four independent control planes (Pitch / Yaw Fins)

Charging

24 V External Connector with USB 2.0 Support

Applications of the i3XO EcoMapper AUV

Baseline Monitoring

- Detailed data on horizontal and vertical planes
- Reduce number of personnel on the water
- Reduce costs to run monitoring program
- Simultaneous bathymetric, water quality and current mapping, sonar imaging

Source Water Mapping

- Improve knowledge of raw water quality
- Early warning of algal blooms and low DO events
- Map sediment level and reservoir volume
- Reduce water treatment operating costs

Coastal & Ocean Research

- Surf-zone turbulence
- Benthic boundary layer studies
- Coral reef ecology
- Tidal inlet studies
- Fisheries research
- Physical-biological interaction

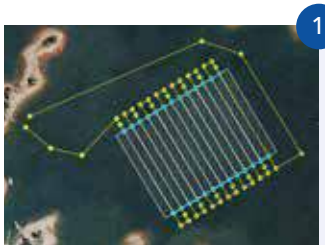
Bottom Mapping

- Depth sensor and acoustic sounder standard
- Side-scan sonar optional
- Requires < 1 m water depth

Point Source and Non-point Source Mapping

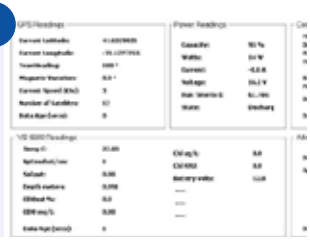
- Generate high-resolution map of plume
- Track movement of point source
- Map non-point source impacts to environment
- Monitor impacts by industry or development

5 Steps to an EcoMapper Mission



1 Using VectorMap software, create a point-and-click mission on a geo-referenced map.

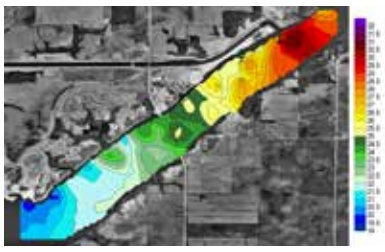
2 Start EcoMapper with key fob. Using Windows™ Remote Desktop, load mission onto EcoMapper's UVC software.

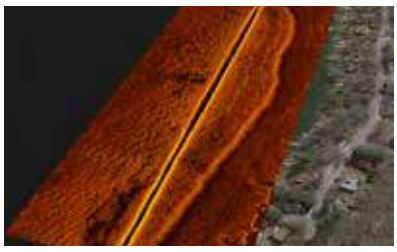


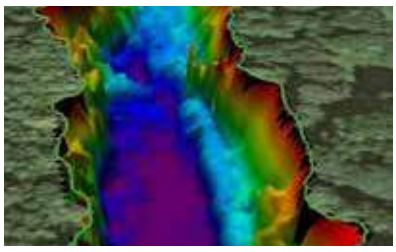
3 Place vehicle in water and start mission.

4 When EcoMapper is on the surface and within Wi-Fi range, view data and monitor progress, or take manual control over vehicle.

5 Retrieve EcoMapper at planned PARK location. Download data via Wi-Fi link; transfer data to preferred graphing software (software not included).







DB600 Real Time Data Buoy

YSI EXO2 Sonde

Ai1 Logging + Communication System

ALL-IN-ONE, RUGGED, REMOTE MONITORING SYSTEM

The DB600 is a completely integrated all-in-one IoT system for remote monitoring, supporting a range of sensor configurations.

The all-in-one system includes everything required to transmit sensor data direct to your fingertips, with industrial reliability suitable for critical applications. Fully programmable, high efficiency solar power system, online communications, and industry leading web interface, providing power and flexibility.

Compatible with:

- DWater quality sonde (eg. YSI EXO)
- Single point current sensor (eg. Aanderaa DCS)

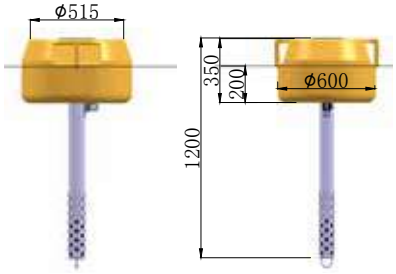
Package includes:

- DB600 buoy (single person deployable)
- Lockable sonde tube
- Completely sealed All-in-one (Ai1) logging and communciation system
- Fully integrated marine solar power and lithium battery
- 2nm solar powered LED light

Diameter
600mm
Material
Polyethylene float. SS Sonde Tube
Weight
21kg (including sonde tube)
Freeboard
200mm at maximum weight

Ai1 Standard Config Specs

Connection: Plug'n Play
Inputs: Analog + Digital
Communciations: 3G/4G
Power: 18W solar, 7Ah battery (supports a range of sensor configurations)
Waterproof: IP67



YSI EMM350 Pisces Lightweight Pontoon

EMM350 PISCES is a lightweight pontoon platform that supports water quality, water velocity, and meteorological sensors, as well as computer logging systems and is ideal for coastal, estuary, river and lake monitoring.

Housing it's payload are two topside aluminum chests that contain the data acquisition system, cellular modem, and battery. The chests are easily serviceable from the water and accommodate multiple underwater cable connections.

This platform is ideal for coastal, estuary, river, and lake monitoring. It can be deployed by two persons with a truck and a small boat.

Features:

- Towable by most small vessels
- Ideal for high currents up to 12 knots
- Loading and deployment by two persons
- Standard configurations available with short lead time
- High profile for visibility in navigable waterways
- Abundant power reserve and solar accumulation
- Datalogger, cellular modem, meteorological sensors, and ADP configurations

Size
Height - 70 in. Width - 48 in. Length - 75 in.
Material
Frame - 6061 marine-grade, powder-coated aluminum, Hardware - 316 stainless steel, Hull - Polyethylene, with optional closed-cell, foam-filled pontoons, Tripod - 6061 marine-grade, powder-coated aluminum
Deployment Tube
Retractable, 4 in. schedule 40 PVC pipe with schedule 80 flange
Equipment used with:
EXO Sondes, 6-Series Sondes, Storm3
Mooring Attachment
One or two-point attachment points

Tideland SB138-P Sentinel Buoy

EXCEPTIONAL STATION-KEEPING

Deployed in over 40 countries, the SB138P buoy utilizes the benefits of the latest in materials, manufacturing processes and technology. Providing a rugged, lightweight buoy with exceptional station-keeping and long life, while reducing the long term maintenance expense typically associated with floating aids to navigation.

Features:

- **Long-term strength and security**
  The float section is internally cross-braced with stainless steel rods that are connected to stainless steel bushings in mooring and lifting eyes.
- **UV-stabilised polyethylene**
  Rotationally moulded to form a seamless hull, 9.5mm thick, able to withstand knocks and/or collisions.
- **Stability**
  Achieved by filling the float section with a calculated amount of reinforced concrete as ballast.

Construction
Rotationally moulded in medium density UVstabilised virgin polyethylene, 9.5mm thick
Foam Filling
16kg/m3 expanded polystyrene foam
Weight
454kg (including two 38mm shackles)
Diameter
1750mm
Freeboard
305mm
Submergence
24.7kg/cm
Surface Color
As specified
Maximum Mooring Load
636kg
Maximum Current
6 knots

Meteorological Measurements
Wind, atmospheric pressure, air temperature, humidity.

Real-Time Data Delivery
GeoView, Storm Central, general interface to 3rd party data delivery solutions

Aids to Navigation
WRadar reflector, Lanterns, E-NAVCON, RACON, AIS Transponders

Wave Measurements
Wave direction, wave height, external or internal compass, correction for buoys made of magnetic material.

Water Quality Sensors
Dissolved Oxygen, pH, Temperature, Conductivity, Salinity, Turbidity, Chlorophyll, Blue-Green Algae and Hydrocarbons

Data Management
SmartGuard, Storm logger, 3rd party logger

Telemetry Options
2G/3G modem, AIS, VHF/UHF, radio, iridium, GOES

Current Direction & Speed
Broadband Doppler Current Profiler , Z-pulse single point current sensor

MOTUS Wave Buoy

The MOTUS Wave Sensor, a directional wave sensor module, is integrated to the Tideland SB 138P MOTUS Buoy to provide a unique way of measuring waves from buoys.

The sensor processes wave data and is configurable to present Spectrum derived parameters, Time Series derived parameters, Directional Wave Spectrum and Heave Time Series.

MOTUS Wave Buoy can effectively combine various Hydrological and Meteorological parameters.
Basic parameters as wind, waves and currents can easily be expanded to include sensor packages with different water quality sensors.

Output Parameters

- Mean Spreading Angle
- First Order Spread
- Long Crestedness
- Energy Spectrum
- Directional Spectrum
- Principal Directional Spectrum
- Orbital Ratio Spectrum
- Fourier Coefficients Spectrum
- Wave Peak Direction Swell/Wind
- Wave Mean Direction
- Significant Wave Height Swell/Wind
- Wave Height Hmax
- **Wave Height Max Trough**
- **Wave Height Max Crest**
- **Wave Period Tmax**
- **... and others**

MultiDO Optical Monitoring and Control Instrument 5500D

MultiDO Monitoring and Control Instrument

Designed specifically for Aquaculture Systems, the YSI 5500D and AquaManager® Software integrate process control, alarming, and data management into one product. Simple enough to monitor one tank, powerful enough to manage a full scale farming operation from anywhere in the world. Simultaneously measure dissolved oxygen with optical technology in multiple tanks or ponds.

Features

- MultiDO monitor using optical DO technology; 1-4 DO probe inputs depending on model
- Ethernet TCP/IP or wireless communications - optional
- Event logging records calibrations, high and low conditions, and more
- Conditional feed timer with Feed Smart software included
- Networking capability up to 32 instruments per communications port or integration with 5200As and 5400s
- Graphic interface function for quick, reliable system status with the use of AquaManager software

YSI System Specifications		
Dissolved Oxygen (Optical) (0-200%) (0-20 mg/L) (200-500%) (20-50 mg/L)	Range Resolution Accuracy Response Time	0 to 500% air saturation; 0 to 50 mg/L 0.1% air saturation; 0.01 mg/L or 0.1 mg/L (auto-scaling) ±1% of reading or ±1% air sat, whichever greater; ±0.1 mg/L or ±1% of reading whichever greater ±10% of reading 90% of reading in 25 seconds; 95% of reading in 45 seconds (typical response times with no stirring; sample movement will improve typical response times)
Temperature	Range : 0 to 45°C ; Resolution : 0.1 °C ; Accuracy : ±0.2 °C	
Communication Ports	RS485 and RS232 standard; Ethernet and wireless optional	
Memory/Logging	Non-volatile; 2000 data, 1250 relay/alarm, 1000 entries/change and 500 GLP records	
Inputs	1-4 DO probe inputs depending on model	

Dissolved Oxygen Transmitter Oxix®

Sensor With Minimal Maintenance

The Oxix® transmitter is a unique dissolved oxygen measurement system with an optical sensor that communicates with a state-ofthe-art electronic converter. No other system for measurement of dissolved oxygen can compare with the features and advantage of the Oxix®.

Oxix® is ideal for the measurement of dissolved oxygen in process and wastewater. The Oxix® sensor has no membrane to change, contains no chemicals to foul, and requires little or no calibration.

The timed relays in the converter can activate valves to automatically clean the sensor's optical window, and thus keeps the system practically maintenance free.

Superior Sensing Technique

The Oxix® optical sensor does not deplete oxygen. The sensor contains a light source with a specific wavelength that shines on the back of a membrane containing a special compound immobilized in a gel matrix.

When the light hits the gel, a fluorescence process is initiated and the sensor detects the fluorescence which is proportional to the amount of dissolved oxygen. The resulting signal is sent to the converter for processing and calculation of a proportional, analog 4-20 mA output signal.

The sensor has a measuring range of 0 – 25 mg/l, with a resolution of 0.01 mg/l and an accuracy of <1 % or 0.02 mg/l. The temperature range is 0 - 50°C.

The digital signal in the Oxix® sensor is an advanced communication technology that allows cable lengths up to 600 m between sensor and converter.

	Oxix® Converter
Input	RS 485
Analog output	Active 4 to 20 mA, galvanically isolated (max. 800 Ω)
Digital output	One potential-free, electro-mechanical relay (max. 50 V DC / 1 A) One optically isolated MOSFET relay (max. 50 VAC / V DC / 120 mA)
Digital input	For activation of flushing and resetting alarms
Communication	Modbus® RTU-mode, 9600 baud, 2-wire RS 485, slave-mode

	Oxix® Sensor
Measuring range	Dissolved oxygen 0 to 25 mg/l (0 to 25 ppm)
Resolution	0,02 mg/l
Principle of operation	Optical fluorescence
Response time (t90)	Less than 1 sec.
Dimensions	50 mm (diameter) × 130 mm
Materials	Epoxy, silicone and PU, PVC 316 SS
Cable	4 x 0,34 mm 2, Ø 5,0 mm
Cable length	Standard 10 m

Turbidity And Suspended Solids Transmitter SuSix®

Optics For Multi Cross-Beam Detection

The SuSix® has special directionally polished optics that controls and steers the infrared beams in selected patterns for measurement of turbidity and suspended solids. The advanced optical system with patended algorithms employ neural logic to ensure reliable and stable measurements. The sensor has a built-in diagnostics function to maintain continuous high quality and accurate readings. The algorithms even compensate for the unavoidable deposits on the optics and gas bubbles in the liquid.

Full Range Using Only One Sensor And Transmitter

The full, wide range provides for using only one sensor for measurements in clean drinking water, surface water, effluent, and measurements of suspended solids in activated sludge or return sludge from sewage plants.

Converter With Communication

SuSix® has a logical menu structure with intuitive navigation. The user interface is mobile phone-like, and several different languages can be selected from the display.
With a USB connection you can transfer configurations, data from the data logger, and software upgrades from a PC. The SuSix® converter has one 4-20 mA output, two relays for control and alarms, and one digital input for change of range, liniarization and alarm cancellation.

- Alarms are displayed as pop-up windows and saved in the alarm log.
- The SuSix® display can be user- configured to show any required values.
- SuSix® can be part of a network consisting of other SuSix® and MJK units, and can function as a shared display for up to 4 units.
- A Modbus® communication protocol enables direct connection to PLC units, SCADA and telemetry systems.

	SuSix® Sensor
Measuring Range	Turbidity / Suspended solids
Measuring principle	Six-channel optics with pulsed, infrared light with modified absorption measurement
Transmitter output	RS 485
Power supply	From converter
Enclosure materials	IP 68

	SuSix® Converter
Input	RS 485
Analog output	One active 4 - 20 mA, galvanically isolated (max. 800 W)
Digital output	One voltage-free electro-mechanical relay (max. 50 V DC / 1 A) One optically isolated MOSFET relay (max. 50 VAC / V DC / 120 mA)
Digital input	For change of range, liniarization and alarm cancellation

Compact pH And Redox Transmitter pHix®

pHix® For Waste Water Treatment, Water Works and Industry

One sensor - Two functions

The pHix® Compact is a new and innovative pH and Redox transmitter designed for easy installation and maintenance withelectrode, transmitter, and mounting in one unit.

The unique design of pHix® Compact eliminates high
impedance electrode connections and special hardware for mounting.

The electrical connection of the pHix® Compact is very simple - a loop-powered display and a 12 - 30 V DC supply.

The pHix® Compact can be submerged into the liquid for measuring in open channels and tanks. For measuring in pipes the pHix® Compact can be mounted in a 2" pipe T.

pHix® Compact is IP68 class enclosure and withstands a static pressure of 1 bar/10 mWG. pHix® Compact is available with 4-20 mA output for pH / Redox or with 2 galvanically separated 4-20 mA outputs for both pH and temperature for direct connection to a PLC or indicator.

All parametres can be set with HART® communication via the 4 - 20 mA signal.

New electrode

Low impedance and large membrane
Less sensitivity to fouling and longer cleaning intervals.
Better performance in liquids with low ion concentration like desalinated water or surface water.
The low impedance, the large membrane and electrolyte volume have significant importance for longer sensor life.

	Specifications
Supply	12 - 30 V DC, 2-wire loop supply.
Temperature Range	- 20 … + 80 °C
Materials	PPS (Ryton®)
Input impedance, pH	> 2 x 1012 Ω
Reference	> 2 x 108 Ω
Measuring range	0 - 14 pH (-1000 … +1000 mV)

	pH electrode specifications
Eletrode mode	Combined double junction with fl at glass membrane.
pH-glass	Low impedance.
Reference junction	Sintered PTFE.
Reference system	Gel, double junction.
Impedance	50 MΩ / 25 °C.
	Redox electrode specifi cations
Eletrode mode	Combined double junction with platinum electrode.
Reference junction	Sintered PTFE.
Reference system	KCl gel, double junction.
Impedance	2 KΩ / 25 °C.

Auto Sampler ProSample

The ProSample series of fully automated portable samplers is an extension of YSI's process monitoring and control equipment offering for wastewater, surface water and industrial treatment markets. They assist with regulatory compliance and process optimization in various stages through these processes.

Lightweight and easy to use, the samplers come with a proprietary peristaltic pump for highly accurate sampling based on time, flow or weather event. Once an event occurs, or during normal operation, the log data is easily extracted from the sampler via a USB and can be taken to a PC for further evaluation. The ProSample series provides a unique combination of userfriendly design and unmatched technology.

Features

- Robust PE, double-walled, insulated housing for temperature control
- Easy tube replacement for minimal downtime
- Spring-loaded roller bearings in peristaltic pump providing longer tubing life, up to 20 % longer than competition
- Highly accurate sample volume using two captive sensors in the peristaltic pump for volume control
- User-friendly, simple programming and calibration from sampler or PC
- Long battery life - up to 550 samples per battery charge
- Data recovery via USB and does not require direct transfer to a laptop
- Non-volatile data memory for up to 5 years, so you never have to worry about loosing your data if power is lost
- "Mini" PM option has smaller footprint

Applications

- Stormwater
- Wastewater treatment (municipal and industrial)
- Pre-sedimentation
- Post-sedimentation
- Industrial pre-treatment

ProSample Technical Specifications

Sampling method peristaltic pump
20 to 10,000 mL (flow proportional)
Accuracy
Single sample volume accuracy on peristaltic pump is +5 % or +5 mL
Suction height
Maximum 6.5 m at 1,013 h Pa
Pumping speed
>0.5 m/s at suction height up to 5 m at 1,013 Pa; pump capacity can be adjusted electronically
Calibration
Automatic (adjustable) or manual
Material (housing)
PE (polyethylene)
Material (tubing)
PVC, L =5 m, ID=10 mm maximum, hose length = 30 m
Dimensions (D x H)
P = 500 x 740 mm PM = 400 x 650 mm
Weight
P= 15kg PM = 9kg
Measuring interval
Range A: 5 minutes (adjustable) or greater; Range B: 10 minutes or greater
Communications
Mini-USB, RS232, Connection via USB and PC (YSIConnect must be installed on PC)

Memory
Up to 3,000 entries, non-volatile data memory for up to 5 years
Data log
Stores sampling and malfunction data, bottle changes, messages, external signals
Inputs
Analog 0/4-20 mA, Digital, SDI-12 (P-12 and PM-12 only)
Digital
(8) Flow, event, 1 input can be programmed independently
Operating temperature
0 to 50 °C
Sample temperature
0 to 40 °C
Power supply
12 V/ 7.2 Ah lead storage battery (maintenance free, leak proof) 115V or 230V operation by means of battery charger in buffer mode
Certifications, standards
CE sampling according to ISO 5667-10, EN 16479
Programming
12 user-defined selectable programs
Keypad
Graphic display (128 x 64 pixels), back lit
Climate control
Insulated sample compartment - insulation thickness of 20 mm

Water Samplers FSS & WS705 / WS755

Global Water

FSS – Flow Sampling System
Global Water's Flow Sampling System is a unique water monitoring package. This package includes an easy-to-use lightweight composite water sampler, an open channel flow monitor, and a data recorder that includes software, allowing easy upload of data to a laptop, desktop, or PDA for transfer to spreadsheet programs. This compact package is portable for field installation and fully customizable to meet your monitoring needs.

WS705 / WS755
The WS705 single-bottle composite/ discrete water samplers and the WS750 two-bottle wastewater/stormwater samplers combine all the features needed to meet a wide variety of water sampling requirements, including those for stormwater, industrial discharge, water and wastewater treatment, waste collection systems, rivers, and streams.

Features

- Ideal for refrigerated wastewater, industrial and environmental sampling
- Quick disconnect pickup hose conveniently stored inside the enclosure for easy transport
- Simple to operate – no programming required
- Heavy duty wheels and retractable handle built in
- Timed and external flow pulsed composite samples
- Enclosed battery compartment and smart battery charger to improve battery life

Enclosure	Expanded UV protected PVC
Bottle	WS705&FSS: 2.5 gallon Polyethylene WS755: Two 1 gallon polyethylene
Pickup Hose	WS705&WS755: 4.6 m reinforced PVC 1/4 inch ID polyethylene flexible tubing section with 20-Mesh intake strainer and quick-disconnect fittings FSS: 4.6 m reinforced PVC 1/4 inch ID polyethylene flexible tubing section with intake strainer
Pump Tubing	Norprene 1/4" ID, 7/16" OD
Flow Rate	1000 ml per minute at a 4 foot head
Type	Peristaltic
Maximum Lift	6 m
Battery	Rechargeable 5 AH Gel Cell
Standby	3 months while still retaining enough power to run the pump to capacity

Start Delay	16 time settings from 0 to 12 hours
Composite Interval	15 time settings from 5 min. to 12 hours plus an External Trigger mode setting
Sample Size	15 composite sample sizes from 50 ml to 2 liters plus a Full Bottle discrete setting (Approximate sizes at 4 foot head)
External Trigger Input	250 mS minimum pulse width Switch closure or 4-24VDC
Pulse Output:	5VDC one-second pulse 1000 ohm output impedance
Bottle Switch Input	Switch closure Input Floating read switch in bottle
Rain and Water Sensors	Optional moisture sensors or switch closure inputs
Internal Fuse	10A Slow-Blow
Charger	18VDC Regulated Switching Supply, 330mA 6 Watt, 2.1mm Connector

Water Quality Samplers WQS

Global Water

WQS – Water Quality Sampling System
Global Water has created a unique water quality sampling system. This system includes an easy to use lightweight triggered composite water sampler, a water quality process controller with relay outputs, and a data recorder that is Windows compatible. The compact water quality sampler system is portable for field installation and fully customizable to meet your needs.

Features

- Ideal for locating water quality trouble areas in wastewater, industrial, or stormwater systems
- Easy to use interface with user selectable sensor types
- Rugged construction for harsh environments
- Relay outputs for alarms, sampling, or data logging
- Scalable water quality triggers for taking composite samples
- Water quality sampler data recorder is Windows compatible

WQMS Water Quality Monitoring System
Global Water's WQMS Water Quality Monitoring System allows you to monitor multiple water quality parameters with a fully integrated, easy to use, economical system. The standard Water Quality Monitoring System includes our multichannel datalogger (featuring 7 analog channels and 2 digital channels for data recording) and four of our rugged 4-20 mA water quality sensors for measuring water temperature, pH, conductivity, and dissolved oxygen.

Features

- Monitor temperature, DO, pH, conductivity, and 5 additional parameters at the same time
- High quality, rugged sensors
- Battery powered for remote locations
- User-friendly Windows™ and Windows™ CE-based PDA software included
- Four sample modes: timed, 10 times per second, logarithmic, and exception
- Both USB and serial communication ports
- Rugged, lockable, weather resistant enclosure

Water Level Logger / Sensor / Transmitters WL16 & WL400 / WL450

Global Water

The WL16, Water Level Logger, is a datalogger and submersible pressure transducer combination designed for remote monitoring and recording of water level or pressure data. The water level logger can record over 81,000 readings and has four unique recording options, fast (10 samples per second), programmable interval (1 second to multiple years), logarithmic, and exception. Multiple depth ranges are available from 3 to 500 feet of water level change. A 25 ft vented cable is standard on all water level loggers, and optional cable lengths are available from the factory up to 2000 ft.

	WL16
Power	Two 9VDC Alkaline Batteries
Temperature	-40° to +85°C
Sample Modes	High Speed, Fixed Interval, Logarithmic, Exception
Fixed Interval	Programmable from 1 sec to >1 year
High Speed	10 samples per second
Storage Capacity	81,759 time and date stamped data points (including battery voltage)
Communication Port	USB Type B

- Four sample modes: 10 times per second, timed, logarithmic, and exception
- CE Certified
- User friendly software included
- USB communication
- No need to remove sensor for data collection or battery change
- Highly accurate water level measurements
- User programmable start and stop alarms, engineering units, and field calibration setup
- Unique 0-3 ft range for shallow water
- Wet-wet transducer eliminates vent tube concerns
- Automatic barometric pressure and temperature compensation

	WL400	WL450
Sensor		
Pressure Range	0.9m / 4.5m / 9m / 18m / 36m / 76m / 152m	
Temperature Output Option	Range: 0 to 50° C	-
Accuracy	±0.1% of full scale at constant temperature, ±0.2% over 1.37°C to 21.1°C range	Total Error Band ±0.1%, 16 bit digital error correction
Operating Temperature	-40°C to +85°C	-10°C to +80°C
Outputs	4-20 mA or 0.5 to 2.5 VDC across 125 ohms	4-20 mA, 2-wire loop powered
Supply Voltage	8 to 36 VDC	10 to 28 VDC
Housing Material	304L Stainless Steel, SS microscreen (hundreds of holes to prevent fouling), electronics are fully encapsulated in marine grade epoxy, guaranteed not to leak	316L stainless steel, polyamide, fluorocarbon
Housing Size	20 mm dia. x 140 mm long	21 mm dia. x 95 mm long
Weight	227 g	453.6g

Ultrasonic Level Transmitters Shuttle®

Match Sensors To Applications

Whether it is the level in a small weir, a hopper full of sludge, a wet well or a reservoir, MJK has the sensor for the application.

Shuttle® systems can measure ranges as small as 0 to 10 m / 0 to 4 in. up through ranges as large as 0 to 24 m / 0 to 80 ft. MJK's sensor with a 3° beam spread concentrates power to handle turbulence and surface
debris, and allows installation in crowded wet wells or on sidewalls. MJK's broader beam sensors have their application advantages in solids level measurement
and long distances. MJK's Shuttle® sensors are available with FM approvals for use in explosion hazard areas. Also, MJK offers chemically resistant models for chemical storage tank applications. Completely self-contained with built-in keypad and large 4 digit LCD with 18 status indicators, including a signal strength indicator, so you can do all the setting-up and modifications without additional equipment.
Two relays for level set points, alternating pump control or alarms are included.
The Shuttle® has a dual power supply allowing the user to power it with 10 - 30 V DC or 230 / 115 V AC. The mA output has user selectable system values. High resolution Learning function is included to eliminate false echoes and reading errors. Extensive self-diagnostics and signal management options are included to pinpoint settings for accurate and reliable operation.

Nothing Is Left Out

	Shuttle® Sensor
Range In liquids:	0 - 10 cm to 0 - 25 m
Range In solids:	0 - 4 m to 0 - 10 m
Frequency	30 kHz, 40 kHz or 50 kHz
Temperature Range	-20 to +60° C
Temperature compensation	Built-in -20 to +60° C
Spread	3°, 6° or 7°
Materials	Depends on the sensor model, see data sheet 2.1
Enclosure	IP 68 / NEMA 6P (submersible to 10 m)

	Shuttle® Converter
Measuring accuracy	Better than 0,2%
Input	From ultrasonic sensor
Analog output	Active 4-20mA galvanically isolated, max. loop resistance 500 Ohms
Digital output	Two SPDT electromechanical relays. (max 50V DC / 1 A)
Set-up and adjustment	From keypad behind the front cover
Indication	Extra large 4 digit LCD with 18 additional status indicators

Oil Water Interface Meters WL550

Global Water's WL550 Oil/Water Interface Meters measure the depth and thickness of floating (Light Non-Aqueous Phase Liquids or LNAPLs), sinking (Dense Non-Aqueous Phase Liquids or DNAPLs) hydrocarbons and water in monitoring wells as small as 1/2 inch (12.5 mm) inner diameter using an optical probe for industry leading accuracy. Oil Water Interface Meters are available in many different tape lengths. All Oil Water Interface probes are pressure proof and leak proof using a unique triple-seal design.

Using state-of-the-art electronics, the WL550 Oil Water Interface Meters deliver reliable, rock solid performance in the field. This allows more readings and more accurate measurements compared to other similar oil water interface meters. The oil water interface probes use infra-red refraction to detect hydrocarbons and conductivity to detect water.

Tape Graduation	1 cm and 1 mm
Tape Material	Flat spring steel with clear kynar jacket
Detection Limit	0.5 mm layer thickness
Accuracy	0.008% or better
Signal	Audible buzzer and light
Battery	9 V battery
Battery Life	180 hours
Auto Shut Down	Unit powers down after 10 min
Probe Diameter	16 mm
Shipping Weight	100m tape : 4 kg
Shipping Size	31 x 37 x 22 cm

Water Level Sounder WL500

The Water Level Sounder meets or exceeds federal specification US GGG-T-106E (USA) or EEC CLASS II (Europe) for a guaranteed accuracy of 0.008%. It uses a full depth-rated stainless steel and teflon probe that is 16 mm in diameter with sensor electronics encapsulated in a water and dust proof housing.

The water level sounder's electronics module can be removed so that the entire reel and tape can be cleaned and decontaminated. The flat spring steel core ensures that the level sounder will hang perfectly straight in large and small diameter wells. This provides unparalleled accuracy when compared to the flat white tapes, where kinks in the tape introduce slight errors, in addition to the displacement of water changing the static level.

Tape Graduation	1m and 1mm intervals
Tape Material	Polyethylene
Probe Diameter	16mm
Signal	Audible buzzer and light
Battery	9 V battery
Shipping Weight	100m tape : 4 kg
Shipping Size	31 x 37 x 22 cm

ProSolo Digital Water Quality Meter DO/BOD Instrument ProSolo

The ProSolo is YSI's most advanced optical dissolved oxygen field meter, benefiting from years of expertise in cutting-edge dissolved oxygen technology.
Featuring expanded measurement capabilities with ODO/T, ODO/CT, and turbidity* probe options, the ProSolo is ideal for a variety of applications including aquaculture, coastal, estuary, and wetland sampling.

Measurement Range

DO : 0 to 500%, 0 to 50 mg/L
Temperature : -5 to 70°C
Conductivity : 0 to 200 mS/cm

Accuracy

DO : 0 to 200%: ±1%
Temperature : ±0.2°C
Conductivity : 0 to 100 mS/cm ±0.5%

Temperature compensation

for DO mg/L measurement: -5 to 50°C

Weight & dimensions

567 g (with battery)
8.3 cm width x 21.6 cm length x 5.6 cm depth

Dissolved Oxygen, Conductivity, Salinity Instrument Pro2030

The Pro2030 provides everything you need in a handheld dissolved oxygen meter that automatically compensates for changes in salinity values. Rugged, simple and reliable. Measure DO, salinity, conductivity, specific conductance, TDS, barometric pressure and temperature.

EPA approved for drinking water and wastewater compliance reporting.

Measurement range

DO : 0~50.0 mg/L
0~500 % Air saturation
Conductivity : 0 to 200 mS/cm
Salinity : 0 to 70 ppt
Total Dissolved Solids (TDS) : 0 to 100 g/L
TDS constant range : 0.30 to 1.00
Temperature : -5 to 55 °C
Barometer : 500 to 800 mmHg

Waterproof

IP-67 (even with the battery cover off), floats

Pro20 Galvanic/Polographic Dissolved Oxygen Pro20

The YSI Pro20 dissolved oxygen meter is a rugged, user-friendly instrument for dissolved oxygen measurement. The Pro20 can be used in the lab or the field and can go from one to the other in seconds.

User-replaceable sensors and cables and convenient One Touch Cal feature makes it extremely user friendly. Mil-spec (military spec) connectors, IP-67 waterproof and rubber over molded case, and 1-meter drop tests ensure the instrument remains in your hands to provide years of sampling even in the harshest field conditions. The feature set of the Pro20 results in a low total cost of ownership over the life of the product.

Measurement range

DO : 0 to 50.0 mg/L
: 0 to 500 % Air saturation
Temperature : -5 to 55 °C
Barometer : 500 to 800 mmHg

Waterproof

IP-67 (even with the battery cover off), floats

Warranty

3-year instrument; 2-year field cables

Unit of Measure

Air saturation, mg/L, Barameter mmHg, °F, Dissolved Oxygen %, Temperature °C

Pro20i Dissolved Oxygen Intergral Cable Pro20i

Easy to use, rugged and reliable, the YSI Pro20i provides everything you need in a handheld instrument for the measurement of dissolved oxygen. User-friendly and convenient calibration routine and 50 data set memory. A true field instrument with IP67 waterproof, rubber over molded case, and 1-meter drop tests ensure durability to provide years of sampling even in the harshest field conditions.

Measurement range

DO	: 0 to 50.0 mg/L
	: 0 to 500 % Air saturation
Temperature	: -5 to 55 °C
Barometer	: 500 to 800 mmHg

Waterproof

IP-67 (even with the battery cover off), floats

Warranty

3-year instrument; 2-year field cables

Unit of measure

Air saturation, mg/L, Barameter mmHg, °F, Dissolved Oxygen %, Temperature °C

EcoSense ODO200 Optical Dissolved Oxygen ODO200

EcoSense ODO200 is an optical-based dissolved oxygen meter ideal for DO sampling. The ODO200 Kit includes the EcoSense ODO200 meter, field cable, probe and carrying case.

Scale

DO	: 00.0 to 20.0 mg/L
Saturation	: 0.0 to 200.0 %

Parameters

Temp, mg/L, %

Memory

5,000 data sets

Digital sensors

Yes

Operating temperature

0 to 60 °C

Sampling

Yes

Warranty

3-year instrument; 2-year field cables; 1-year sensor cap

Waterproof

IP67

Benchtop Meter Dissolved Oxygen Measurement MultiLab®7310 MultiLab 4010p

MultiLab 4010

MultiLab 4010P
Built-in printer

The MultiLab® 4010 is the perfect benchtop meter with secure and convenient menu-controlled operation via a graphic display for the measurement of dissolved oxygen. With automatic documentation according to GLP/AQA, it supports the traceability - not only in the environmental lab. For this, the serial number of the sensor can be saved. On request also available with an optional built-in printer.

Measurement range

DO Con	: 0.00~20.00 mg/L
	; 0.0~90.0 mg/L
Saturation	: 0.0~200.0 % ; 0~600 %
Pressure	: 0.0~200.0 mbar
	; 0~1,250 mbar
Temperature	: 0~50.0 °C

Accuracy

DO Con	: Meas value ±0.5 %
Saturation	: Meas value ±0.5 %
Temperature	: ±0.1 K

Temperature compensation

Auto compensation (0 to 40 °C)

Weight & dimensions

800g (phosphorus N/A)
240(W) × 190(D) × 80(H) mm

pH pH Measurements

pH determines the acid and base characteristics of water. A pH of 7.0 is neutral; values below 7 are acidic and values above 7 are alkaline. Excessively high or low pH levels are often associated with nutrient deficiencies, metal toxicities, or other problems for aquatic life. High pH makes ammonia more toxic. During algal blooms, photosynthesis increases the water pH, especially in stagnant or slow-moving water.

pH is measured by a sensing electrode for Hydrogen and a reference electrode along with a meter to measure the electrode potential. The YSI pH sensor is a glass bulb filled with a solution of stable pH (usually 7), so the inside of the glass surface experiences constant binding of H+ ions. The outside of the bulb is exposed to a water sample where H+ varies. The resulting differential of H+ creates a potential which is read by the meter versus the stable potential of the reference electrode.

pH or ORP, Conductivity, Salinity Instrument Pro1030

The Pro1030 provides everything you need in a handheld meter that measures pH or ORP (redox) along with conductivity. Rugged, simple and reliable. Measure pH or ORP, salinity, conductivity, specific conductance, TDS, and temperature.

EPA approved for drinking water and wastewater compliance reporting.

Measurement range	
ORP	: -1,999 to +1,999 mV
pH	: 0 to 14 units
Conductivity	: 0 to 200 mS/cm
Salinity	: 0 to 70 ppt
Total Dissolved Solids (TDS)	: 0 to 100 g/L
TDS constant range	: 0.30 to 1.00
Temperature	: -5 to 55 °C
Barometer	: 500 to 800 mmHg
Waterproof	
IP-67 (even with the battery cover off), floats	

Dissolved Oxygen and pH or ORP Instrument Pro1020

The Pro1020 provides everything you need in a handheld meter that measures dissolved oxygen and temperature along with either pH or ORP (redox). Rugged, simple and reliable. Measure pH or ORP, dissolved oxygen, and temperature.

EPA approved for drinking water and wastewater compliance reporting.

Measurement range	
ORP	: -1,999 to +1,999 mV
pH	: 0 to 14 units
DO	: 0 to 50.0 mg/L
	; 0 to 500 % Air saturation
Temperature	: -5 to 55 °C
Barometer	: 500 to 800 mmHg
Waterproof	
IP-67 (even with the battery cover off), floats	

Portable pH Meter pHotoFlex® pH

pHotoFlex® pH: portable LED photometer combined with full value pH measurement for environmental monitoring, fish hatcheries, extensive routine and water analytics.

Light source	LED
Reproducibility	0.01 NTU or < 0.5 % of measured value
pH/ORP	pH 0~16 with automatic temperature control (ATC)
Accuracy	Photometry: <2 nm wavelength accuracy, 0.005 abs. reproducibility pH: ±0.01 pH
Power supply	4 x AA batteries for approx. 3,000 measurements
Weight & dimensions	600g 86(W) × 236(D)×77(H) mm

EcoSense pH1000A pH1000A

Measure pH, mV (ORP) and temperature accurately in the laboratory with the EcoSense pH1000A. This benchtop instrument for basic, routine measurements in the lab is an accurate and easy-to-use solution for repeatable pH or mV measurements.

Features

- Measures pH, mV (ORP), and temperature
- Large, high-contrast, LCD display
- Simple 1, 2, or 3 point calibration
- Accepts U.S. (7.00, 4.01, 10.01) or NIST (6.86, 4.00, 9.18) buffer sets

Lab pH Meter TrueLab pH 1000 Series

TruLab pH 1110

Ideal laboratory instruments for basic, routine pH/ mV measurements in the lab. The pH 1110 is an accurate, easy-to-use instrument for repeatable pH or mV measurements in the laboratory. The 1310/1310P offers pH/mV measurements with automatic documentation for GLP compliance.

Model	pH110	pH1310 / pH1310P
Measurement range	pH : -2.000 to 19.999 pH ; -2.00 to 19.99 pH mV : -1,200.0 to 1,200.0 mV ; -2,000 to 2,000 mV Temp : −5.0 to 105.0 °C	pH : -2.000 to 20.000 pH ; -2.00 to 20.00 pH mV : -1,200.0 to 1,200.0 mV ; -2,000 to 2,000 mV Temp : −5.0 to 105.0 °C
Accuracy	pH : ±0.005 pH ; ±0.01 pH mV : ±0.3 mV; ±1 mV Temp : ±0.1 K	pH : ±0.004 pH ; ±0.01 pH mV : ±0.2 mV; ±1 mV Temp : ±0.1 K
Weight & dimensions	240(W) × 190(D) × 80(H) mm Approx 1.0kg	pH7310 240(W) × 190(D) × 80(H) mm Approx 0.8kg pH7310P 290(W) × 190(D) × 80(H) mm Approx 1.0kg

Multiparameter Instrument Pro Plus

The YSI Professional Plus handheld multiparameter meter provides extreme flexibility for the measurement of a variety of combinations for dissolved oxygen, conductivity, specific conductance, salinity, resistivity, total dissolved solids (TDS), pH, ORP, pH/ORP combination, ammonium (ammonia), nitrate, chloride and temperature. Also a very powerful lab instrument for BODs, pH and ORP.

Connect any Professional Series cable (excludes ODO cables) and probe option to the instrument and use the convenient cable management kit to keep everything simple and organized. Cable options range from 1-, 4-, 10-, 20-, and 30-meter choices (up to 100-meters on DO only cables). Use lab or field probes and switch between the two quickly.

The Pro Plus makes an ideal lab BOD instrument with the proven self-stirring BOD probe (EPA Approved).

Measurement range

DO	: 0 to 50.0 mg/L
	: 0 to 500 % Air saturation
Conductivity	: 0 to 200 mS/cm
Salinity	: 0 to 70 ppt
Total Dissolved Solids	: 0 to 100 g/L
TDS constant range	: 0.30 to 1.00
Ammonium	: 0 to 200 mg/L-N
Chloride	: 0 to 1,000 mg/L
Nitrate	: 0 to 200 mg/L-N
ORP	: -1,999 to +1,999 mV
pH	: 0 to 14 units
Temperature	: -5 to 55 °C
Barometer	: 500 to 800 mmHg

Waterproof

IP-67 (even with the battery cover off), floats

ProPlus Quatro Cable Quatro

The Quatro is a 4-port cable for use with the Professional Plus instrument. The Quatro is a true field cable with MS (military spec) connectors, two year warranty, and rugged, weighted probe guard.

Create a powerful multiparameter sampling instrument. Measure conductivity/temperature, dissolved oxygen and any two ISEs among pH, ORP, ammonium, nitrate or chloride.

Each cable includes a conductivity/temperature sensor. Dissolved oxygen and ISE sensors must be ordered separately.

Cable spec

Cables: Field
Standard lengths of 1, 4, 10, 20, or 30 meters - up to 100 meters on DO only cables; 4- through 30-meter cables include a cable management kit

Possible sensor configurations

Temperature, Dissolved Oxygen, pH, ORP/Redox, Conductivity, TDS, Ammonia, Ammonium, Nitrate, Chloride, Built-in barometer

pH or ORP, Conductivity, Salinity Instrument Pro1030

The Pro1030 provides everything you need in a handheld meter that measures pH or ORP (redox) along with conductivity. Rugged, simple and reliable. Measure pH or ORP, salinity, conductivity, specific conductance, TDS, and temperature.

EPA approved for drinking water and wastewater compliance reporting.

Measurement range

ORP	: -1,999 to +1,999 mV
pH	: 0 to 14 units
Conductivity	: 0 to 200 mS/cm
Salinity	: 0 to 70 ppt
Total Dissolved Solids (TDS)	: 0 to 100 g/L
TDS constant range	: 0.30 to 1.00
Temperature	: -5 to 55 °C
Barometer	: 500 to 800 mmHg

Waterproof

IP-67 (even with the battery cover off), floats

Dissolved Oxygen and pH or ORP Instrument Pro1020

The Pro1020 provides everything you need in a handheld meter that measures dissolved oxygen and temperature along with either pH or ORP (redox). Rugged, simple and reliable. Measure pH or ORP, dissolved oxygen, and temperature.

EPA approved for drinking water and wastewater compliance reporting.

Measurement range	
ORP	: -1,999 to +1,999 mV
pH	: 0 to 14 units
DO	: 0~50.0 mg/L
	: 0~500 % Air saturation
Temperature	: -5 to 55 °C
Barometer	: 500 to 800 mmHg
Waterproof	
IP-67 (even with the battery cover off), floats	

EcoSense pH100A

pH100A

Simple, affordable one-handed operation for a multitude of applications to measure pH and temperature.

Model	pH100A
Scale	pH : -2~16 Temp : -5~+125 °C ORP : -1,500~+1,200 mV
Accuracy	pH : ±1 % Temp : ±0.3 °C ORP : ±0.1 %
Resolution	pH : 0.01 Temp : 0.1 °C ORP : 1 mV
Weight & dimensions	272g 78(W) × 184(D) × 37(L) mm

EcoSense pH/ORP Pens pH10A / ORP15A

pH10A

ORP15A

The EcoSense Pen series is the perfect instrument for economical spot sampling of pH/ORP/EC and temperature in a wide range of applications.

Model	pH10A	ORP15A
Scale	pH: 0.00~14.00 Temp: 0.0~99.9 °C	ORP: -1,200~1,200 mV Temp: 0.0~99.9 °C
Accuracy	pH: ±0.02, ±1 LSD Temp: ±0.3 °C	ORP: 1 mV, ±1 LSD Temp: ±0.3 °C
Resolution	pH: 0.01 Temp: 0.1 °C	ORP: 1 mV Temp: 0.1 °C
Waterproof	IP67	

Multiparameter Benchtop Meter 4010 Series

The YSI MultiLab line includes the 4010-1 (single channel), 4010-2 (dual channel) and 4010-3 (three channel) instruments that provide easy-to-use and -calibrate menu-driven operation ideal for the laboratory.

Features

- Intelligent digital sensors (IDS) - plug and play sensors
- Use non-IDS (other manufacturer's) pH, ORP or ISE sensors with a simple BNC adapter
- Data storage – 500 data sets in manual mode and 10,000 data sets in automatic logging mode
- 3-year warranty

Measurement range	
pH	: 0.000 to 14.000 pH
ORP	: -1,200.0 to 1,200.0 mV
DO	: 0.00 to 20.00 mg/L
Conductivity	: 10 µS/cm to 2,000 mS/cm
Weight & dimensions	
Approx 0.8kg 240(W) × 190(D) × 80(H) mm	
Multi 4010-1	
1 Measurement Channel DO/BOD, pH, ORP, conductivity and ISE	
Multi 4010-2	
2 Measurement Channel	
Multi 4010-3	
3 Measurement Channel	

ProDSS Multiparameter Water Quality Meter

The YSI ProDSS (digital sampling system) is a portable water quality multiparameter instrument for the measurement of several critical parameters - dissolved oxygen (optical), total algae, turbidity, pH, ORP, conductivity, specific conductance, salinity, TDS, resistivity, TSS, ammonium, ammonia, chloride, nitrate, depth (optional), temperature and GPS coordinates.
Designed for use in applications such as surface water, groundwater, coastal/ estuarine, aquaculture, and wastewater, the rugged and reliable ProDSS allows for the measurement of water quality parameters with digital sensors. The ProDSS uses smart sensor technology that allows sensors to be automatically recognized by the handheld while retaining calibration data.

Features

- 4 port cables feature user-replaceable sensors; universal ports can accept any 4 sensors; optional depth sensor available
- Long-life rechargeable lithium-ion battery to power handheld and sensors
- Easy-to-read color and backlit display can be used in any lighting condition
- Digital smart sensors are automatically recognized by the instrument and store calibration data
- User-replaceable cables provide versatility, reduce down time and reduce overall cost of ownership
- Large memory (>100,000 data sets) with extensive site list and Data ID tag capabilities
- Built-in micro USB On-The-Go port for PC connection, recharging/powering the ProDSS and connecting directly to a USB stick
- Global positioning system (GPS) (optional)

ProDSS Parameters

- **New! - Total Algae-Phycocyanin**
- **New! - Total Algae-Phycoerythrin**
- Dissolved Oxygen (Optical)
- Turbidity
- pH
- ORP/Redox
- Salinity
- Total Dissolved Solids (TDS)
- Resistivity
- Total Suspended Solids (TSS)
- Depth
- Seawater Density
- GPS Coordinates
- Chlorophyll
- Total Algae
- Ammonium
- Ammonia
- Chloride
- Nitrate
- Temperature
- Barometric Pressure
- Conductivity
- Specific Conductance

Popular ProDSS Sensors

Dissolved Oxygen (optical)

Turbidity

Conductivity,Temperature,Salinity

pH/OR

ProDSS Instrument includes

- Rechargeable Lithium-ion battery pack
- Hand Strap
- USB cable for charging and PC connection
- AC charger
- Cable for connection to USB stick
- ProDSS Ouick Start Guide
- USB flash drive with user manuals and KorDSS

Cables

Cables Lengths: 1m, 4m, 10m to 100m with 10m increments available for lengths over 10m. Depth Sensors optional.

Display

Easy-to-read color and backlit display can be used in any lighting condition

KorDSS Software

Data management software sepcifically designed for the ProDSS.

ProDSS System Specifications (Instrument, Cables & Sensors)

Parameter	Range	Accuracy	Resolution
Temperature	-5°C to 70°C (23°F to 158°F)	±0.2°C	0.1°C or 0.1°F (user selectable)
pH	0 to 14 pHUnits	±0.2 pHUnits	0.01 pHUnits
ORP	-1999 to 1999 mV	±20 mV	0.1 mV
DO	0 to 500 %, 0 to 50 mg/L	0 to 200% (±1% of reading or 1% air saturation, whichever is greater) 200% to 500% (±8% of reading) 0 to 20 mg/L (±0.1 mg/L or 1% of reading, whichever is greater) 20 - 50 mg/L (±8% of reading)	0.1% or 1% air saturation (user selectable) 0.1 or 0.01 mg/L (user selectable)
Barometric Pressure	375 to 825mm Hg	±1.5 mmHg from 0 to 50°C	0.1 mm Hg
Conductivity	0 to 200 ms/cm	0 to 100 mS/cm (±0.5% of reading or 0.001 mS/cm, whichever is greater) 100 to 200 mS/cm (±1% of reading)	0.001, 0.01 or 0.1 mS/cm (range dependent)
Specific Conductance*	0 to 200 ms/cm	±0.5% of reading or 0.001 mS/cm, whichever is greater	0.001, 0.01, 0.1 mS/cm
Salinity*	0 to 70 ppt	±1.0% of reading or ±0.1 ppt, whichever is greater	0.01 ppt
Total Dissolved Solids (TSS) ***	0 to 100 g/L	User-Selectable TDS Multiplier (0.30 to 1.00; 0.65 default)	0.001, 0.01, 0.1 g/L
Resistivity*	0 to 2 Moh ms	±0.1% Full Scale	0.001, 0.01, 0.1 oh ms
Water Density*	0.0 to 50.0 sigma, sigmat	-	0.1 sigma or sigma T
Turbidity	0 to 4000 FNU (NTU)	0 to 999 (0.3 or ±2% of reading, whichever is greater) 1000 to 4000 (±5% of reading)	0.1 FNU
Total Suspended Solids (TSS) ***	0 to 30000 mg/L	Calculated from Turbidity and User-Entered Correlation Points	0.01, 0.1 mg/L
Ammonium**	0 to 200 mg/L NH4-N	±10% of reading or 2 mg/L, whichever is greater	0.01 mg/L
Ammonia*	0 to 200 mg/L NH3-N	-	0.01 mg/L
Chloride**	0 to 18000 mg/L Cl	±15% of reading or 5 mg/L, whichever is greater	0.01 mg/L
Nitrate**	0 to 200 mg/L NO3-N	±10% of reading or 2 mg/L, whichever is greater	0.01 mg/L
Depth	0 to 100m	±0.004 m (±0.013 ft) for 1, 4 and 10-m cables ±0.04 m (±0.13 ft) for cables 20-m and longer	0.001 m or 0.01 ft
Chlorophyll	0 to 100 RFU or 0 to 400 µg/L chl	Linearity: r2 ≥ 0.999 for Rhodamine WT across full range	0.01 RFU or 0.01 µg/L chl
Phycocyanin (RFU or µg/L PC)	0 to 100 RFU or 0 to 100 µg/L PC	Linearity: r2 ≥ 0.999 for Rhodamine WT across full range	0.01 RFU or 0.0
Phycoerythrin (RFU or µg/L PE)	0 to 100 RFU or 0 to 280 µg/L PE	Linearity: r2 ≥ 0.999 for Rhodamine WT across full range	0.01 RFU or 0.01 µ

Turbidity / Color / Suspended Solid

Portable Turbidity Meter Turb 430T

WTW

Portable nephelometric with highest precision according to DIN ISO / US EPA for water analytics, quality control and process monitoring.

Measurement ranges
NTU 0 to 1,100 / 0~1,100
FNU 0 to 1,100

Reproducibility
0.01 NTU or < 0.5 % of measured value

Measurement ranges
NTU: 0 to 1,100
FNU: 0 to 1,100

Accuracy
±0.01 NTU or ±2 % of the measured value

Power supply
4x AA batteries for approx. 3,000 measurements

Weight & dimensions
600g
86(W) × 236(D) × 77(H) mm

Economical Portable Turbidity Meter Turb 355

WTW

Small portable turbidity meter as per DIN ISO / US EPA for nephelometric measurements in quality control and environmental monitoring.

Measurement ranges
NTU 0 to 1,100
FNU 0 to 1,100

Reproducibility
0.05 NTU or ±1 % of the measured value

Resolution
N 0.01 NTU in the range 1 to 9.99
0.1 NTU in the range 10,0 to 99,9
1 NTU in the range 100 to 1,000

Accuracy
0 to 500 NTU/FNU: ±0.1 NTU/FNU or ±2 % of measured value
500 to 1,100 NTU/FNU: ±3 % of the measured value

Power supply
4x AAA batteries for approx. 1,500 measurements

Portable Suspended Solids TSS 711

ROYCE TECHNOLOGIES

The Royce Model 711 Portable Suspended Solids/ Interface Level Analyzer is a rugged, waterproof instrument designed for the rigors of remote sampling. The meter provides reliable operation in waste treatment plants, rivers, lakes and other aqueous systems. The meter will read in either grams per liter when in the suspended solids mode or relative density percentage while in the interface level mode of operation.

Measurement range
0.01 to 10 grams per liter (10 to 10,000 mg/L)

Reproducibility
±1 % of reading or ±20 mg/L, whichever is greater

Accuracy
±5 % of reading or ±100 mg/L, whichever is greater

Power supply
Standard 9V batteries

Weight & dimensions
Approx 1kg
7"(L) x 3.2"(W) x 1.5"(D)

Portable Turbidity Meter WQ770B

Global Water

The Global Turbidity Meter is a highly accurate device with a fully submersible sensor for in-situ environmental or process monitoring. The meter is provided with a padded carrying case and 25' of marine grade cable, with lengths up to 100' available upon request.

Measurement ranges
Sensor=0 to 50 NTU and 0 to 1000 NTU;
Meter=0 to 50 NTU or 0 to 1000 NTU selectable

Output
4-20mA (Sensor, both ranges), LED screen (Meter)

Cable Length
Sensor=25 ft standard (optional to 500 ft)

Accuracy
+ 1% of full scale

Operating Voltage
10 to 36 VDC @ 40 MS (Sensor);
Internal 9VDC battery (Meter)

Weight & dimensions
454 g (Sensor); 907 g (Meter+sensor)
Body= 3.8 x 21.6 cm (Diameter x Length)

Photometer 9300/9500

The YSI 9300 and YSI 9500 are economical photometers in small packages for any application. These portable photometers allow you to easily take readings directly in the field for 100+ parameters.

Selecting the desired test has never been easier. Simply choose among the list of available tests on the large graphic display and the instrument will walk you through the test procedure - it's that easy! Simple. Convenient. Accurate.

Accuracy	
±0.5 % at 4 % transmittance; ±0.005 at 0.3 AU	
Resolution	
0.001 AU	
Wavelength	
450, 500, 550, 575, 600, 650 nm	
Display	
Graphic, backlit LCD with on-screen instructions	
Waterproof	
IP 67	
Power	
3x AA batteries; the 9500 can also be powered via USB	

Portable Meters for Photometric Meters pHotoFlex®

pHotoFlex®: portable LED photometer for environmental monitoring and extensive water and routine analytics in (mobile) service labs

pHotoFlex® STD
Absorbance measurement

pHotoFlex® pH
Absorbance measurement + pH measurement (Electrodes type)

pHotoFlex® Turb
Absorbance measurement + pH measurement (Electrodes type) Turbidity

Wavelength nm	
436, 517, 557, 594, 610, 690 (+860: Turb only) nm	
Measurement range	
pH (pHotoFlex® STD)	: 0 to 16
Turbidity (pHotoFlex® Turb only)	: 0 to 1,100 NTU/ FNU
Power supply	
1.5V × 4 (Approx 5,000 measurements)	
Weight & dimensions	
600g 86(W) × 236(D) × 117(H) mm	

Spectrophotometer photoLab® photoLab® 7100VIS / photoLab® 7600VIS

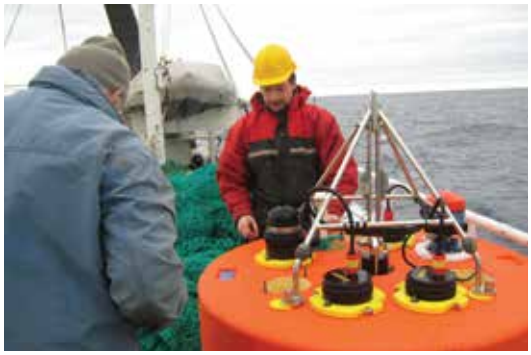
photoLab® 7100

Model	photoLab® 7100 (VIS)	photoLab® 7600
Wavelength range	Spectral photometer VIS 320~1,100 nm	Spectral photometer (VIS) 190~1,100 nm
Lamp	Tungsten-Halogen	Xenon
Accuracy/ reproducibility	±1 nm; < 0.5 nm	±1 nm; < 0.5 nm
Scan speed	700~2,000 nm/min in 1, 2, 5, 10 nm steps	700~2,000 nm/min in 1, 2, 5, 10 nm steps
Data memory	5,000 measurements, 40 MB for spectrums and kinetics	
Weight & dimensions	404(W) x 314(H) x 197(H) mm, Approx 4.5kg	

Features

- Easy to use: place cuvette, read measurement value
- More than 250 test programs for water analysis, galvanics and general lab analytics
- Cell and reagent test kits with barcode for automatic program selection
- Automatic cuvette and measurement range detection for rectangular cuvettes
- Top reliability due to menu guided comprehensive Analytical Quality Assurance - AQA
- Measurement "Light" on the road with car battery use
- USB and Ethernet-connections for easy update, print to PDF or printer, storage and data export

Xylem Analytics Premium Brands



AANDERAA

The Aanderaa name is synonymous for robust and reliable instrument solutions for oceanographic and other environmental measurements.

Core product lines

- Oceanographic sensors
- MET sensors
- Doppler current profilers

Global Water

Global Water, founded in 1990, is a manufacturer, distributor, and systems integrator of water instrumentation serving the water, wastewater, and environmental markets.

Core product lines

- Water level and flow
- Samplers
- Water quality

mjk®

MJK Automation manufactures high quality online instrumentation for measurement of Level, Flow, pH, dissolved oxygen, turbidity and total suspended solids, Pump Controllers and RTU units, Data loggers and water samplers.

Core product lines

- On-line instrumentation for water measurement

SonTek®

SonTek, advancing environmental science in over 100 countries, manufactures affordable, reliable acoustic Doppler instrumentation for water velocity measurement in oceans, rivers, lakes, canals, harbors, estuaries, and laboratories.

Core product lines

- Bathymetric survey
- Flow and discharge measurement
- Current and wave measurement

Tideland Signal supplies a complete range of marine navigation lanterns, buoys, fog signals, self contained LED lanterns, RACON, AIS, VTS. Self contained lanterns, LED lanterns, AtoN lights. Remote monitoring and aids to marine navigation to IALA standards. Complete windfarm navigation systems, offshore AtoN systems and AtoN AIS.

Core product lines

- Navigational aids, lanterns and buoys

Providing high quality, high resolution data to better understand and manage our water resources. Used for climate change and drought studies, flood monitoring and warning, stormwater runoff monitoring, groundwater quantification and so much more.

Core product lines

- Level guaging, flow and data acquisition
- Multiparameter sondes
- Monitoring buoys and platforms

WTW offers a comprehensive product range of pH, ORP, conductivity, oxygen/BOD/ respirometric and turbidity meters as well as photometers with reagents. The product range includes both robust, waterproof protable meters and mondern laboratory meters.

Core product lines

- Phototometers
- Turbidity meters
- Multiparameter sensors

Xylem |'zīləm|

1. The tissue in plants that brings water upward from the roots;
2. a leading global water technology company.

We're a global team unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

AANDERAA® | YSI | -ebro-®

Global Water | BS Bellingham + Stanley® | TIDELAND

SI Analytics® | mjk® | WTW®

O·I·Analytical | SonTek®

xylem
Let's Solve Water

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