ROYAL Eijkelkamp

Meet the difference

Scuba water quality probes

Smart Sensoring

Meet the difference

Scuba water quality probes

Royal Eijkelkamp offers a wide range of indicators, sensors and many other kits and packages to help you with your water analysis. Our Royal Eijkelkamp water quality range contains an excellent selection of Scuba water quality probes suitable for various applications. All Scuba probes may be used for discrete sampling, profiling, as self-powered loggers, or connected to telemetry stations for continuous real-time monitoring, with water quality data accessible via cloud-based software. The Scuba probes communicate RS-232, SDI-12 or Modbus, for flexibility in connecting to a variety of different data loggers and PLCs. We offer the largest selection of water quality sensor technologies in the industry. So in addition to standard configurations, each Scuba probe may be customised for your specific application. Pick sensors of your choice to fully populate larger probes, or add a battery pack to convert a probe to a logging device.

Rugged

- Anti-corrosive housings and sensors
- Industry leading 3 year warranty
- Anti-fouling options

Intelligent

- Sensor health indicator
- Automatic recording of internal calibration data
- LED status indicator

Simple

- One touch and automatic data capture
- Fast easy calibration
- Intuitive software

Medium sensor options

- PAR
- Chlorophyll
- Blue-green algae
- Rhodamine
- Crude oil
- Refined oil
- CDOM/FDOM
- Fluorescein dye
- Optical brighteners
- Tryptophan

* Depth and ORP (must have pH) optional on any probe except for the Easy probe

Our wide range of Scuba water quality probes

Discover our expansive range of Scuba water quality probes. Each probe in our collection features anti-corrosive housings and sensors, robust marine bulkhead connectors, and additional anti-fouling options (copper gauze or copper cone). Our larger probes are equipped with a central wiper system. LED status indicators on each sensor provide important diagnostic information. Each probe includes an industry-leading 3 year warranty.

Operate your probes with a variety of display options, through a direct, Bluetooth, or telemetry connection. All probes can be connected with our GDT Prime Plus or Multiple modems. Moreover, our probes can be connected to other modems or PLCs via RS232, SDI12, or MODBUS, offering great flexibility in data transfer of the measurements. Intuitive control software or app, available for Windows, iOS and Android, is included at no additional cost with every probe. Offered as complete packages, you are provided with everything you need to start testing water quality.

Scuba Trimeter

Get all the features of a Scuba, including top-grade sensors and simple software, in an instrument designed for economy. The Scuba Trimeter (Ø 50 mm) holds any one sensor* (e.g. turbidity, dissolved oxygen (DO) or EC), plus temperature and depth sensors (both are optional). For example, a 3-parameter configuration could be turbidity, temperature, and depth. Another example could be Dissolved Oxygen (DO) and temperature. Offered as complete packages you are provided with everything you need to get testing water.

*Exceptions include PAR, CO_2 and Transmissometer.

Scuba 50 and Scuba 65

Royal Eijkelkamp's water quality probe Scuba 50 (50 = diameter probe in mm) comes standard with temperature, pH, conductivity, and dissolved oxygen sensors, and optional ORP and depth sensors. The optical DO sensor features a long-lasting (5+ years) replaceable cap, and the probe includes a separate and easy refillable reference sensor. Eliminating expensive consumables ensures low cost of ownership over the life of the probe. Connect the Scuba 50 to any of our field display options for sampling in the field, or add a battery pack or solar panel for autonomous deployments. Connect to a telemetry station for viewing real-time data in the cloud.

Eijkelkamp's compact Scuba 65 (Ø 65 mm) is an excellent choice when your application calls for turbidity monitoring, but only a few additional sensors.

Both Scuba water probe packages represent the essentials in basic water quality monitoring and only a few additional sensors (pH, ORP, EC). A DO sensor is not available on the Scuba 65.

Scuba 75

Royal Eijkelkamp's compact but sturdy Scuba 75 water quality probe measures 75 mm in diameter and packs the big 4 essential sensors: acidity, conductivity, dissolved oxygen (optional with wiper) and temperature. All into one small, rugged probe! Additional optional sensors include ORP and depth.

The Scuba 75 is available in two configurations, the 75A and 75B. The Scuba 75A also includes a wipered turbidity sensor, while the 75B can accomodate one ISE sensor.

The Scuba 75 model features an optical DO sensor with a long-lasting (5+ years) replaceable cap. The probe also includes a separate and easily refillable reference sensor. By eliminating expensive consumables, a low cost of ownership over the probe's lifetime is ensured. These lightweight water quality probes are both ideal for spot checking and profiling, and tough enough for extended deployments.

Scuba 90

The water quality probe Scuba 90 (Ø 90 mm) accommodates up to 11 different sensors, making it extremely versatile for a wide variety of water quality monitoring applications. The Scuba 90 is the larger of our advanced portable multiparameter water monitoring probes and is designed for long term deployment, utilising a central cleaning system to keep the fitted sensors clean and reduce the effects of biofouling common in extended deployments.

The Scuba 90 is also available in two configurations, the 90A and 90B. Both models come with a range of standard sensors included (turbidity, temperature, pH, conductivity, dissolved oxygen), with the option to add ORP and depth sensors. Much like its smaller counterpart it offers more customisation options that allow you to add extra sensors to the probe. The Scuba 90A model will also accommodate 2 fluorometers, plus 2 ISE sensors and the Scuba 90B will accommodate 3 fluorometers. The Scuba 90 features our optical DO sensor with long-lasting (5+ years) replaceable cap, and refillable reference sensor. The Scuba 90 probes are ideal for spot checking and profiling, and are tough enough for extended deployments.

Scuba 105

Royal Eijkelkamp' s water quality probe Scuba 105 (Ø 105 mm) holds more sensors than any multiparameter probe in the industry. It is ideal for long-term telemetry deployments, utilising a central cleaning system to keep the fitted sensors clean and reduce the effects of biofouling common in extended deployments.

The Scuba 105 comes standard with turbidity, temperature, pH, conductivity, and dissolved oxygen sensors, with the option to add ORP and depth sensors. In addition to these standard sensors, the probe will accommodate 3 fluorometers, plus 3 ISE sensors.

Scuba water quality probe specifications						
	Scuba Trimeter	Scuba 50	Scuba 65	Scuba 75	Scuba 90	Scuba 105
Diameter	50 mm	50 mm	65 mm	75 mm	90 mm	105 mm
Length - w/o battery pack	343 mm	483 mm	483 mm	483 mm	483 mm	483 mm
- Add internal battery pack	559 mm	686 mm	686 mm	686 mm		
Weight - with IBP	1270 gr	1089 gr	1134 gr	2268 gr	4082 gr	4536 gr
-without battery	998 gr	816 gr	998 gr	1633 gr	2268 gr	2812 gr
Number of sensors	Any single sensor plus depth and temp option	Up to 6	Up to 6	Up to 7	Up to 11	Up to 13
Battery pack	3 D	3 D	3 D	8 C	6 C	6 C
Operating temperature	-50 to 50 °C					
Depth rating	200 m, max depth for ISE and TDG sensors is 15 meters					
Communications	RS-232, SDI-12, USB, MODBUS or Bluetooth					
Sample rate	1 Hz					
Data memory	>1,000,000 logged readings					

NEW!

Easy Scuba Water Quality Probes

The Easy Scuba Water Quality Probes are a great and accessible option for water quality measurements if the regular Scuba probes are too advanced and expensive for your requirements. The Easy Scubas are simplified and more budget-friendly versions of the Scuba 50 and 75 that still offer ease of use and reliable water quality measurements. In addition to the competitive purchase price, this probe also offers low lifetime costs thanks to the low maintenance requirements. The Easy Scuba Sensors and probe housing are made of anti-corrosive materials, suitable for extended use in the field and qualified to reach a depth of maximum 50 metres.

Easy Scuba 50

The Easy Scuba 50 is just 50 mm in diameter and contains up to 4 sensors that measure the most important water parameters.

- Budget-friendly version of the Scuba 50
- Measures EC, pH/ORP, DO and temperature
- Optional sensors for depth

Easy Scuba 75

The Easy Scuba 75 is just 75 mm in diameter and contains up to 5 sensors that measure the most important water parameters.

- Budget-friendly version of the Scuba 75
- Measures EC, pH/ORP, DO, temperature and turbidity
- Optional sensors for depth

An Easy Scuba set includes:

- An Easy Scuba Probe
- A weighted sensor guard
- A storage/calibration cup
- An electronic manual
- ScubaManager software on a USB-stick

Optional accessories include a selection of various lengths of underwater cable, data cable, USB adapter, internal battery pack (rechargeable lithium battery) and a soft carrying backpack.

Applications

- spot-checking
- remote telemetry
- water and wastewater
- education and research
- aquaculture
- unattended logging
- lakes, rivers, estuaries
- process control
- laboratory
- groundwater

Easy Scuba water quality probe specifications*		
	Easy Scuba 50	Easy Scuba 75
Diameter	50 mm	75 mm
Length	478 mm	478 mm
Weight	820 gr	1630 gr
Number of sensors	Up to 4, ORP and depth are optional	Up to 5, ORP and depth are optional
Optional Battery pack	3x D-cell	
Communications	USB, Bluetooth, RS-232, SDI-12 or MODBUS	
Data memory	1GB, enough for 1,000,000 logged readings	
Warranty	3 year warranty on probe and sensors	
Value DO, mg/l	0 to 20 mg/l +/- 0,4 mg/l (accuracy) 20 to 50 mg/l +/- 1 mg/l (accuracy)	
Value DO, % sat	0 to 200 +/- 2% (accuracy) 200 to 500 +/- 4% (accuracy)	

*Further sensor specifications are similar to the regular Scuba probes.

NEW!

Scuba F90

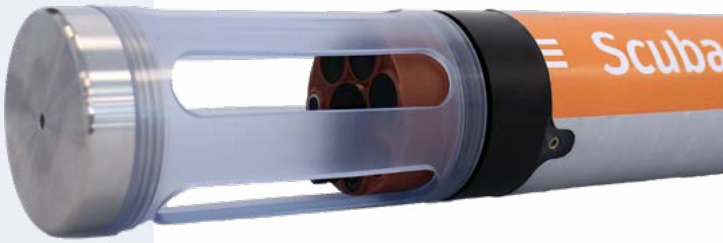
This version of the Scuba 90 is equipped with a copper-filled silicone cone, which envelops the sensors and helps prevent biofouling. The flat sensor surfaces can more easily be kept clean with the central wiper/ brush system, for long-term reliable measurements.

How does it work?

Fouling is the biggest enemy of your multiparameter probe during long-term measurements in the field. The new Scuba F90 has two features that help to mitigate this risk.

All sensors, including the pH, EC and reference electrode, are made flat at equal height, making them even easier to keep clean with the built-in wiper.

In addition, they are covered by a copper-filled cone, which further minimizes the growth of organisms. The cone is easy to remove and replace, for example to perform maintenance on the sensors.



- Suitable for fresh and salt water
- Can house up to 11 sensors
- Offers the same benefits as the regular Scuba 90
- Low maintenance solution

Fresh Water Fouling, Non-Biological

No more cleaning fouled sensors or losing data

ScubaMobile

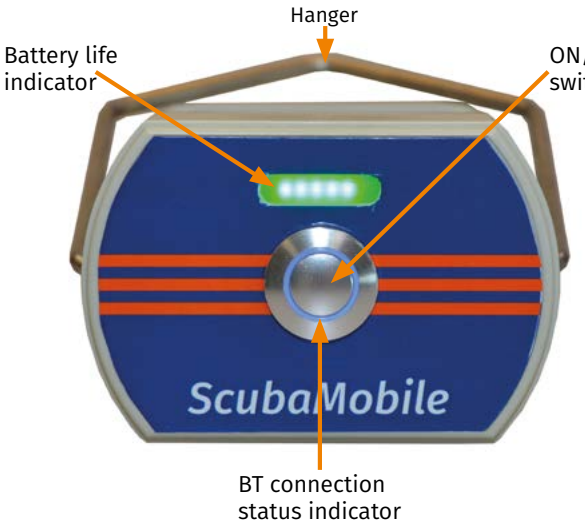
Royal Eijkelkamp's ScubaMobile wireless Bluetooth device provides an easy, cost effective, and versatile way to capture water quality data from the Scuba water quality probes, using Bluetooth-enabled display devices.

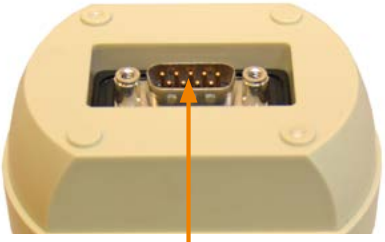
How does it work?

The ScubaMobile connects to the multiprobe's underwater cable, any length up to 200 meters. It provides power to the probe, and a wireless connection to a Bluetooth-enabled display. Eijkelkamp's ScubaLink App for the display device provides control features, including sensor configuration, instant and automated data capture, file management, calibration, GPS, geofencing, and more! Data files may be emailed for convenience.

Ideal for:

- spot-checking
- profiling
- low flow sampling
- lab use
- wireless communication to cable reels





9-pin connection for Scuba underwater cable and wall charger

Connecting to the wireless ScubaMobile

You must first download the ScubaLink App to your display, from the Google Play Store, or Apple App Store. Once paired with the ScubaMobile Bluetooth device, launch the App to connect to a Scuba water quality probe.

Mobile devices

Display options: Android - tablets and smart phones, iOS — iPhone or iPad

Battery Life

A fully charged ScubaMobile device will run up to 22 continuous hours (based on operating a Scuba multiprobe with 13 sensors). Run time increases with fewer sensors; will vary depending on the type and number of sensors installed. Battery life also depends on the ambient temperature.

Specifications

ScubaMobile	
Operating temperature	-5 to 50 ºC (23 to 122 ºF)
Storage temperature	-20 to 50 ºC (-4 to 122 ºF)
Dimensions	7.62 X 5.08 X 12.7 cm (3 X 2 X 5 inches)
Weight	540 gr (1.2 lb)
Materials	PVC, stainless steel
Communications protocol	BLE 4.2, 10 meter range indoors
Default communication settings	Baud: 19200; Data bits: 8; Parity bits: None; Stop bits: 1
Battery type	Lithium rechargeable, 4.4 A-Hr, 11.1 Volt
Battery life	Fully charged will run up to 22 continuous hours with 13 sensors.
Charging requirements	12 V, 2 A, charger included
Warranty	3 years

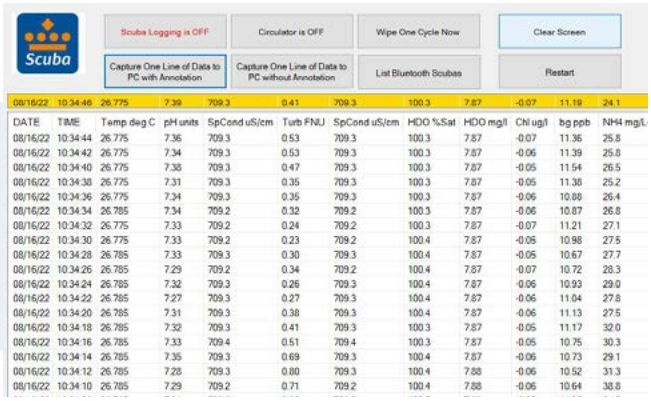
Accessories

We have various accessories available that can be used with the Scuba multiparameter meters.

Field-proven methods to minimise fouling

The central cleaning system cleans the turbidity sensor with a rubber wiper and cleans the other sensors, such as DO, chlorofyll and BG algae, with a brush.

The copper-gauze kit wraps the sensors in copper gauze that slowly dissolves, bathing the sensors with the copper ions that discourage biofouling. Copper gauze is superior to solid copper, which becomes ineffective once oxidised.



DATE	TIME	Temp deg C	pH units	SpCond uS/cm	Turb FNU	SpCond uS/cm	HDO %Sat	HDO mg/l	Chl ug/l	bg ppb	NH4 mg/L
08/16/22	10:34:46	26.775	7.39	709.3	0.41	709.3	100.3	7.87	-0.07	11.19	24.1
08/16/22	10:34:44	26.775	7.36	709.3	0.53	709.3	100.3	7.87	-0.07	11.36	25.8
08/16/22	10:34:42	26.775	7.34	709.3	0.53	709.3	100.3	7.87	-0.06	11.39	25.8
08/16/22	10:34:40	26.775	7.36	709.3	0.47	709.3	100.3	7.87	-0.05	11.54	26.5
08/16/22	10:34:38	26.775	7.31	709.3	0.35	709.3	100.3	7.87	-0.05	11.38	25.2
08/16/22	10:34:36	26.775	7.34	709.3	0.35	709.3	100.3	7.87	-0.06	10.88	26.4
08/16/22	10:34:34	26.785	7.34	709.2	0.32	709.2	100.3	7.87	-0.06	10.87	26.8
08/16/22	10:34:32	26.775	7.33	709.2	0.24	709.2	100.3	7.87	-0.07	11.21	27.1
08/16/22	10:34:30	26.775	7.33	709.2	0.23	709.2	100.4	7.87	-0.05	10.98	27.5
08/16/22	10:34:28	26.785	7.33	709.3	0.30	709.3	100.4	7.87	-0.05	10.67	27.7
08/16/22	10:34:26	26.785	7.29	709.2	0.34	709.2	100.4	7.87	-0.07	10.72	28.3
08/16/22	10:34:24	26.785	7.32	709.3	0.26	709.3	100.4	7.87	-0.06	10.93	29.0
08/16/22	10:34:22	26.785	7.27	709.3	0.27	709.3	100.4	7.87	-0.06	11.04	27.8
08/16/22	10:34:20	26.785	7.31	709.3	0.38	709.3	100.4	7.87	-0.06	11.13	27.5
08/16/22	10:34:18	26.785	7.32	709.3	0.41	709.3	100.3	7.87	-0.05	11.17	32.0
08/16/22	10:34:16	26.785	7.33	709.4	0.51	709.4	100.3	7.87	-0.05	10.75	30.3
08/16/22	10:34:14	26.785	7.35	709.3	0.69	709.3	100.4	7.87	-0.06	10.73	29.1
08/16/22	10:34:12	26.785	7.28	709.3	0.80	709.3	100.4	7.88	-0.06	10.52	31.3
08/16/22	10:34:10	26.785	7.29	709.2	0.71	709.2	100.4	7.88	-0.06	10.64	30.8

Scuba software

The Scuba software features simple to use, intuitive menus. Instructions take the user through the calibration of each sensor. Easy set-up for discrete sampling “snapshot” files or log files for internal logging, using Windows architecture. All files are in .csv format and easy to export.

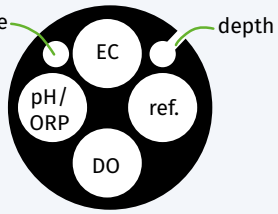
Accessories for every application

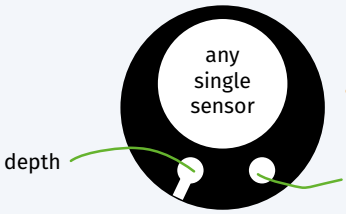
Standard accessories include flow cells, copper-gauze anti-fouling kits, cable reels, SDI-12 converters, soft padded backpacks, pipe kits to protect logging units in the field, weather stations, ScubaMobile Bluetooth, and a full line of calibration standards including secondary calibration standards for fluorometers.

Scuba standard sensor configurations

Ø50
Scuba 50

- temperature
- pH/ORP*
- reference
- conductivity
- DO
- depth*/vented depth*



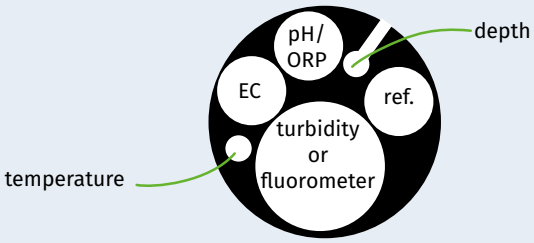


- temperature
- depth*/ vented depth*
- Any single sensor (except any ISE sensor)

Ø50
Trimeter

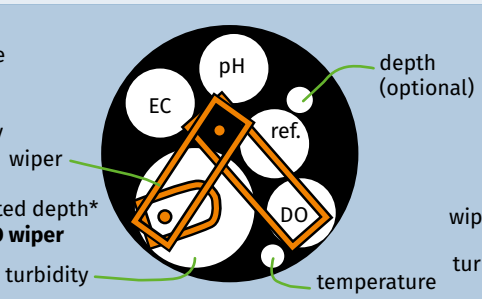
Ø65
Scuba 65

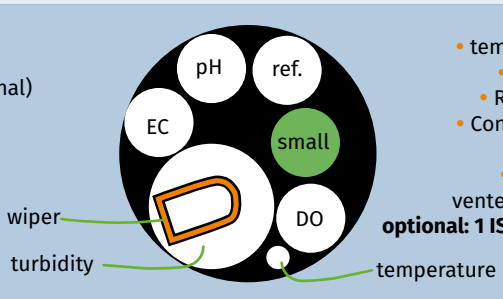
- temperature
- pH/ORP*
- reference
- conductivity
- turbidity
- depth*/vented depth*



Ø75
Scuba 75A

- temperature
- pH/ORP*
- reference
- conductivity
- DO
- turbidity
- depth*/vented depth*
- **Optional DO wiper**





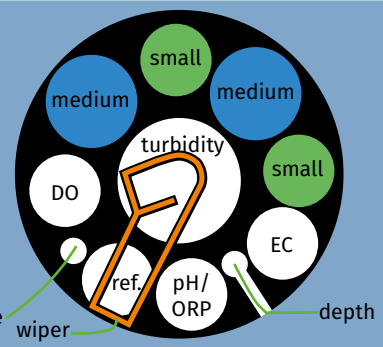
- temperature
- pH/ORP
- Reference
- Conductivity
- DO
- depth*/ vented depth*

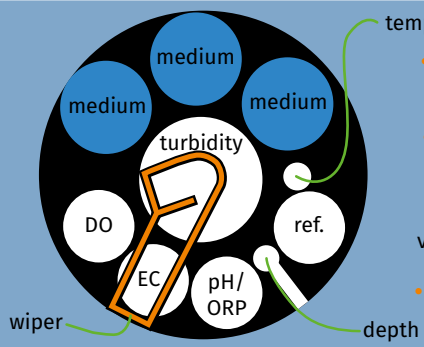
optional: 1 ISE sensor

Ø75
Scuba 75B

Ø90
Scuba 90A

- temperature
- pH/ORP*
- reference
- conductivity
- DO
- turbidity
- depth*/ vented depth*
- 2 x small
- 2 x medium
- central wiper



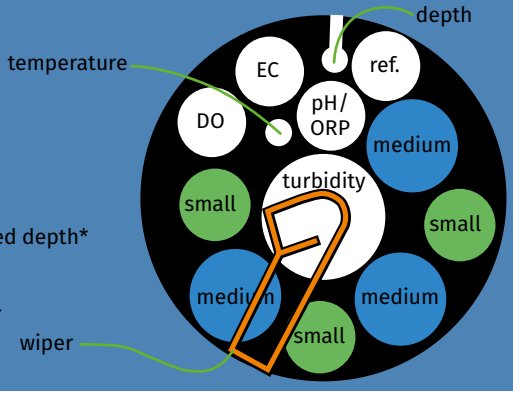


- temperature
- pH/ORP*
- reference
- conductivity
- DO
- turbidity
- depth*/ vented depth*
- 3 x medium
- central wiper

Ø90
Scuba 90B

Ø105
Scuba 105

- temperature
- pH/ORP*
- reference
- conductivity
- DO
- turbidity
- depth*/vented depth*
- 3 x small
- 3 x medium
- central wiper



Small	Medium
nitrate	chlorophyll a
ammonium	BGA
chloride	Rhodamine
sodium	Crude Oil
TDG	Refined Oil
calcium	CDOM/FDOM
bromide	fluorescein
	optical brighteners
	tryptophan

- ORP is combined with pH and is optional on all models
- A small sensor may be substituted for any medium sensors
- Depth sensor is optional on all models

- Standard models are shown. Please request a quote for custom configurations
- Any small or medium sensor is optional. Any fluorometer may be substituted for turbidity
- pH, pH reference, conductivity and DO are 'small' sensors
- For a probe with turbidity sensor, the turbidity wiper extension brush wipes the fluorometer and DO sensor
- For Scuba 90 and 105 models with no turbidity, a wiper system is available to wipe DO and fluorometer sensors
- Any sensor may be removed and the port plugged

* ORP and depth/vented depth are optional

Sensor specifications

Sensor specifications					
Sensor	**Parameter**	**Range and units**	**Resolution**	**Accuracy**	**Comments**
Temperature	Temperature	-50 to 50 °C	0.01	±0.1	Calibration not required
pH / ORP	pH	0 to 14 units	0.01	±0.1 within 10 °C of calibration; 0.2 otherwise	Refillable reference electrode; corrected for temperature; typical sensor life >6 years; optional ORP sensor is combined with pH sensor
	ORP	-999 to 999 mV	0.1	±20 mV	
Turbidity	Turbidity	0 to 1000 FNU	0.01	±0.3 FNU or ±2% of reading w.i.g.	Filtered for non-turbidity spikes; includes wiper to clean the optics; FNU and NTU are interchangeable
		1000 to 4000 FNU		±4% of reading	
Transmissivity	Transmissivity	0 to 100% transmission	0.01	Linearity of 0.99 R^2	Transmissometer mounts externally to Scuba
Dissolved oxygen (optical sensor)	Concentration	0 - 20 mg/l	0.01	±0.1	Compensated for temperature and salinity; EPA approved "lifetime" luminescence method; typical sensor cap life > 6 years
		20 - 30 mg/l	0.01	±0.15	
		30 - 50 mg/l	0.01	±5% of reading	
	% Saturation	0 to 500% saturation	0.1	Corresponds with the accuracy of the concentration reading	
Conductivity	Specific conductance, µS/cm	0 to 5000 µS/cm	0.1	±0.5% of reading or ±1 w.i.g.	Corrected for temperature; four easy-to-clean graphite electrodes; optional sensor provides ±0.5% of reading accuracy to 100 mS/cm.
	Specific conductance, mS/cm	0 to 100 mS/cm	0.001	±1% of reading ±0.001	
		100 to 275 mS/cm	0.001	±2% of reading	
	Salinity	0 to 70 PSU	0.01	±2% of reading	Calculated from conductivity and temperature, PSU is equivalent to ppt
	Total dissolved solids (TDS)	0 to 65 g/l	0.1	±5% of reading	
Pressure	Depth	0 to 25 m	0.01	±0.05	Compensated for temperature and salinity
		0 to 200 m		±0.4	
	Vented depth	0 to 10 m	0.001	±0.003	Compensated for temp, salinity, barometric pressure
	Barometric pressure	400 to 900 mm Hg	0.1	±1.5	Included with depth sensor
	Total dissolved gas (TDG)	400 to 1400 mm Hg	0.1	±1	Compensated for temp; maximum depth 15m
Fluorometers	Chlorophyll a - blue	0 to 500 µg/l	0.01	Linearity of 0.99 R^2	Highest-quality fluorometric sensors; fluorometers often require non-trivial calibration; custom optics available upon request
	Chlorophyll a - red	0 to 500 µg/l			
	Rhodamine dye	0 to 1000 ppb			
	Phycocyanin (freshwater BGA)	0 to 4500 ppb			
	Phycoerythrin (marine BGA)	0 to 750 ppb			
	CDOM/FDOM	0 to 1500/3000 ppb			
	Optical brightener	0 to 2500 ppb			
	Tryptophan	0 to 5000 ppb			
	Fluorescein dye	0 to 500 ppb			
	PTSA	0 to 650 ppb			
	Refined oil	0 to 20 ppm			
	Crude oil	0 to 1500 ppb			
Ion-selective electrodes (ISE's)	Ammonium	0 to 100 mg/l as nitrogen	0.1	±10% of reading or 2 mg/l w.i.g.	Corrected for ionic strength (via conductivity readings); the accuracy specification relies on non-trivial maintenance practice and frequent calibration near the temperature of measurement; sensors require periodic tip replacement
	Nitrate	0 to 100 mg/l as nitrogen			
	Chloride	0.5 to 18,000 mg/l			
	Sodium	0.05 to 20,000 mg/l			
	Calcium	0 to 40,000 mg/l			
	Bromide	0 to 80,000 mg/l			
PAR	Photometric PAR	10,000 µmol/cm^2	0.1	±5% of reading	LiCor spherical sensor
CO_2	Carbon dioxide	0 to 2000 ppm	0.1	±3% of full scale	Other ranges available

For best accuracy, always calibrate near the anticipated field readings, and near the temperature of the anticipated field readings. Specifications indicate typical performance and are subject to change.