HORIBA

LAQUAtwin

Waterproof Pocket Water Quality Meters



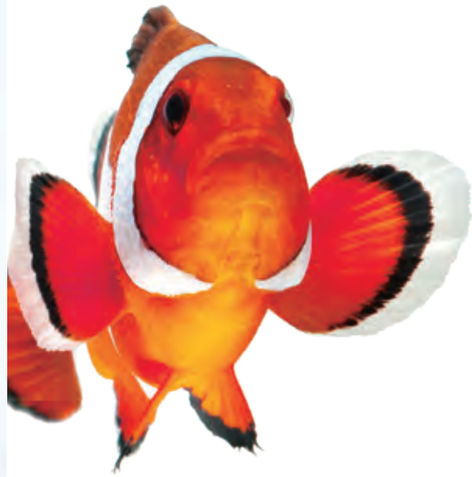
Agriculture | Aquaculture | Arts | Food & Beverage | Health Management | Livestock | Manufacturing | Water & Wastewater

METERS 2 YEARS WARRANTY

MADE IN JAPAN

www.horiba-laqua.com





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LAQUAtwin

Pocket Water Quality Meters

Lab in your pocket.

Maximise On-the-Go Testing with Expanded Water Quality Parameters — Now 10



Quick & Simple
- Measure directly – no container required
- Only a few drops of sample needed



Battery & Safety Features
- Powered by 2 x CR2032 batteries
- Secure battery cover to prevent accidental opening



Unique Flat Sensor Design
- Requires as little as 50µL with sampling sheet
- Multiple measurement techniques



Reliable and Proven Technology
- Backed by over 70 years of HORIBA expertise
- Uses miniaturized components identical to lab instruments



User-Friendly Operation
- Clear backlit display with ☺ indicator for stable readings
- Convenient single-button calibration / measurement



Cost Effective
- Uses only 1/100th of the standard / sample volume
- Features replaceable sensors to extend meter's lifespan



Portable & Built for On-Site Testing
- Get immediate, reliable results in the field
- IP67 dustproof and waterproof for rugged environments
- Comes with protective carrying case

Scan For Introduction Video



Easy Measurement for All Users

Measurement Button

Press to view mV or temperature (Auto Stable mode) or to lock / unlock reading (Auto Hold mode).

In Set-up mode, press to scroll or adjust settings.

Meter

Rated IP67 waterproof and dustproof

Sensor

Rated IP67 waterproof and dustproof.

Sensor is easily replaceable.



Scan For How to Insert Sensor/Battery Video

Scan For Calibration Video

Scan For Measurement Video



Strap Hole

You can attach a strap or tag here.

Power Button

Press to switch on or off the meter or exit set-up mode.

Calibration Button

Press to perform calibration or save settings in set-up mode.

Backlight

For easy viewing in the dark. Flashes when battery is low.

Sensor Guard

Protects sensor from damage and light. Sliding cap—for scooping water samples. Open the whole sensor guard when placing water or solid samples directly onto the sensor.

Slide Cap





1 **Battery Indicator**
Appears when battery is low

2 **Calibration Mark**
Calibration is complete when it stops flashing.

3 **Measurement Mark**
Measurement is complete when it stops flashing.

4 **Measurement Value**
Flashes when the measurement value is out of the range.

5 **Stability Mark**
Lights up when measurement is complete.

6 **Temperature Alarm**
It flashes when the temperature is out of range.

7 **Voltage Measurement Mode**
Displays sensor voltage

IMMERSION

When you're in the lab, you can test the sample in a beaker. Ensure the sensor guard sliding cap is open.



SCOOP

Use as a scoop to test water from a river. Vertical scoop is available with a unique sensor guard.



DROPS

Drop a sample with a dropper; volumes as small as 0.1 mL can be measured. By using sampling sheet B, volumes down to 0.05 mL can be tested.



UNIQUE MEASUREMENT OPTIONS

One meter provides seven flexible measurement techniques. Simply choose the method that best fits your sample and situation.

WIPE

The sampling sheet enables tiny, trace volume analysis. For example, wiping the skin with a water-soaked sampling sheet and measure.



SOLID SAMPLES

Foods containing some moisture can be tested by placing a small piece directly onto the sensor.



POWDERS

LAQUAtwin meters can also test dry powders. Simply place the powder sample onto the sensor, and add an appropriate amount of pure water.



PAPER, TEXTILES AND FILMS

To test sheets of paper and textiles, cut the sample into small pieces, place directly on the sensor, and add a defined amount of pure water.



*All methods applicable to pH measurement. Conductivity models cannot be tested with solids, powders, and sheet-like samples. Above pictures are for illustration purposes only.

10 Water Quality Parameters

Using the same measurement principles as laboratory instruments, LAQUAtwin pocket meters deliver reliable, accurate water quality results. Choose the ideal meter for your application from 13 vibrant, easy to use models.



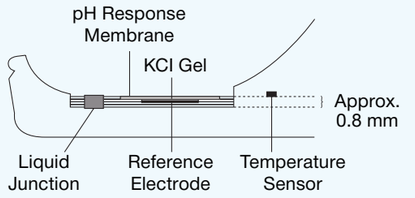
Hassle-Free Operation

Calibrate and measure at the touch of a button. A smiley face icon appears to confirm a stable reading.



Advanced Sensor Technology

LAQUAtwin sensors are engineered with the same technology as standard laboratory electrodes, miniaturized into an ultra thin flat sensor—less than 1 mm thick—and backed by over 70 years of HORIBA sensor expertise.



Cross-sectional view of the flat pH sensor chip

Rated IP67 Waterproof & Dustproof[1]

Built for testing anywhere, anytime, the LAQUAtwin's IP67 rating protects the meter against dust and water exposure—perfect for fieldwork, outdoor sampling, and unpredictable conditions.

IP67

[1] Withstand immersion for 30 minutes at 1m depth. Not suitable for underwater use.

Bright Backlit Display

The backlit screen ensures clear readings even in low light environments and shows a stability indicator, with an option to freeze the value automatically in Auto Hold mode.



Complete Testing Kit

All essential accessories are stored in a compact carrying case, with the option to attach your own strap or tag for added convenience during on the go measurements.



Attach a strap or tag here

Applications



pH AND CONDUCTIVITY MEASUREMENTS IN COCONUT COIR SUBSTRATE

Coconut coir testing involves extracting a sample solution with distilled water and measuring the pH and conductivity of the extract. The acceptable conductivity ranges for 1:2 (v/v) dilution and pour thru sampling methods are 0.26-0.75 mS/cm and 1.0-2.6 mS/cm, respectively. The ideal pH range is 5.4-6.2 for both methods.

SCAN QR CODE FOR LINK



DETERMINATION OF NUTRIENT CONCENTRATIONS IN SOIL SOLUTION AND TOMATO PLANT SAP

Fertigation management requires rapid and accurate methods to determine nutrient concentrations in soil solution and plant sap. Folegatti et al (2005) concluded that LAQUAtwin meters are useful low-cost tools in fertigation management as their measurements of NO3-, K+, and Na+ correlated well with standard lab methods.

SCAN QR CODE FOR LINK



MEASUREMENT OF pH IN PLANT TISSUE

An optimal pH value of 6.4 in plant tissue will encourage healthy growth and prevent insects and diseases attacking the plant. To measure pH, squeeze the sap of mature leaves with garlic press and place the sap onto the sensor of LAQUAtwin pH meter.

SCAN QR CODE FOR LINK



CONDUCTIVITY AND ELEPHANT'S FOOT TESTING

Elephant's foot is a sweet pepper (Capsicum annuum L.) physiological disorder where the stem base swells below cotyledon level and wounds develop at the stem's epidermis base due to salt accumulation. LAQUAtwin conductivity meters can measure soil conductivity to help farmers select optimal land for sweet pepper cultivation.

SCAN QR CODE FOR LINK



SOIL pH AND NUTRIENT AVAILABILITY

The desirable soil pH range for optimum plant growth varies among crops. Generally, soil pH 6.0-7.5 is acceptable for most plants as most nutrients become available in this pH range. Soil pH can be determined by mixing soil sample with water and then measuring the resulting aqueous solution.

SCAN QR CODE FOR LINK



SOIL NITRATE MEASUREMENT FOR DETERMINATION OF PLANT-AVAILABLE NITROGEN

Nitrate concentration in soil is a good indicator of available nitrogen to plants. The required soil nitrate-nitrogen (NO_3-N) for specific crops varies from crop to crop but in general, a concentration range of 10-50 mg/kg is desired.

SCAN QR CODE FOR LINK



SOIL SALINITY MEASUREMENT IN ALMOND ORCHARD

Crops have different levels of tolerance to salinity. Testing soil salinity is the best way to check soil condition in the orchard before salt damage occurs. The $EC_{1:5}$ test is used to estimate soil salinity (EC_e). The soil salinity threshold value for almond is 1.5 mS/cm.

SCAN QR CODE FOR LINK



IMPACT OF SOIL SALINITY ON SUGAR CANE YIELD

Soil salinity adversely affects the growth of sugar cane crops. To help optimize sugar cane yield, check the sodium content in soil by mixing it with water in 1:5 ratio and measuring the resulting solution with LAQUAtwin sodium ion meter.

SCAN QR CODE FOR LINK



MEASUREMENT OF CALCIUM IN SOIL

Calcium is one of the essential nutrients taken up by plants from soil for cell wall development. To measure calcium concentration in soil, extraction with 1M ammonium acetate and filtration should be performed prior to placing the filtrate onto the flat sensor of LAQUAtwin calcium ion meter.

SCAN QR CODE FOR LINK



MEASUREMENT OF POTASSIUM IN SOIL

In laboratories, potassium in soil is extracted with 1M ammonium acetate and analyzed with Atomic Absorption (AA) or Inductivity Coupled Plasma-Optical Emission Spectrometry (ICP-OES). LAQUAtwin potassium ion meter showed values higher than those of ICP-OES. However, with 0.01M ammonium acetate extraction, good correlation (r=0.981, r2=0.962) was obtained between ICP-OES and LAQUAtwin potassium ion meter.

SCAN QR CODE FOR LINK



POTASSIUM DETERMINATION IN PLANT TISSUE

Comparison of LAQUAtwin Potassium Ion Meter and ICP Spectrometry Trials revealed strong correlation (r values were 0.80 and 0.93 for 1st and 2nd trials, respectively) between the LAQUAtwin potassium ion meter readings and ICP results obtained from plant's fresh petiole sap and dried tissue, respectively. This suggests that LAQUAtwin K^+ meter is an appealing field method substitute for rapid determination of potassium concentration in plants.

SCAN QR CODE FOR LINK



MEASUREMENT OF POTASSIUM IN RICE

Potassium is one of the essential plant nutrients supplied via fertilizer in most irrigated rice fields. Extracting sap from the lower stem of plant rice and analysing it with LAQUAtwin potassium meter provide indication of the current potassium status and help farmers adjust the fertilizer application.

SCAN QR CODE FOR LINK



RAPID IN-FIELD DETERMINATION OF NITROGEN IN ONIONS

Fresh root sap analysis with LAQUAtwin nitrate ion meter offers cost-effective, rapid, and easy solution to determine nitrogen status in onion plants. The nitrate-nitrogen (NO_3-N) concentrations in onion vary at different growth stages. The acceptable root sap NO_3-N concentration range for 0.5 to 1.5-inch onion bulbs is 350 to 500 ppm.

SCAN QR CODE FOR LINK



NITRATE MEASUREMENT IN TURF GRASS

Nitrate concentration in grasses can be used as an indicator of soil nitrogen (N) availability for their growth. Research at the University of Connecticut suggests verdure sap nitrate-N concentrations at 200-300 ppm as the optimum level.

SCAN QR CODE FOR LINK



QUICK NUTRIENT ANALYSIS IN STRAWBERRY PRODUCTION

Regular monitoring of nutrient levels such as nitrate (NO_3^-), potassium (K^+) and calcium (Ca^{2+}) in plant petioles, soil solution, irrigation water and drain water produces not only good yield and fruit quality, but also reduces fertilizer cost and mitigates environmental hazards. LAQUAtwin pocket meters are the perfect tools for testing as they directly measure samples and provide results in just few seconds allowing growers to identify and correct any nutrient deficiency or excess immediately.

SCAN QR CODE FOR LINK



pH AND CONDUCTIVITY FOR TESTING ACRYLIC PAINT FILMS AND PAPER SUPPORTS AND FORMULATING AQUEOUS CLEANING SOLUTIONS

Isotonic aqueous cleaning solutions that match the pH and conductivity readings of acrylic paint films and paper supports obtained from agarose gel pellets have been shown to be effective in reducing or removing dirt, dust, active mold growth and associated stains, tide line stains, and discoloration.

SCAN QR CODE FOR LINK



AQUARIUM WATER TESTING

Testing aquarium water such as freshwater and saltwater (either natural or artificial seawater) with reliable instruments is necessary to create a clean and safe environment for your aquatic species. The LAQUAtwin pocket meters require only few drops of water and deliver the results in just few seconds.

SCAN QR CODE FOR LINK



pH MEASUREMENT IN THE ACIDIFICATION OF FERMENTED SAUSAGES

Lowering pH or increasing acidity of meat has become main hurdle against pathogenic bacteria in sausage making. pH is used in the course of fermentation process in order to produce microbiologically stable product that has a pH value of 5.3 or less.

SCAN QR CODE FOR LINK



pH OF BRINE FOR CANNED FOOD TESTING

For brine of canned acid foods, the equilibrium pH value must be 4.6 or below to inhibit the growth of Clostridium botulinum, the most heat resistant of the food pathogen microorganisms.

SCAN QR CODE FOR LINK



pH MEASUREMENT TO DETERMINE FRESHNESS OF MEAT PRODUCTS

Fresh meat must have a pH value in the range of 5.5 to 6.2 before selling to consumers. LAQUAtwin pH meter provides a simple and cost effective way to check the freshness of meat in the local markets.

SCAN QR CODE FOR LINK



pH MEASUREMENT TO DETERMINE ACIDIFICATION OF SUSHI RICE

The rice used for sushi must be acidified with acetic acid (vinegar) to pH less than 4.6 to inhibit the growth of pathogenic bacteria. To measure pH, simply place a sample of rice mixture onto the flat sensor of LAQUAtwin pH meter.

SCAN QR CODE FOR LINK



pH MEASUREMENT OF PICKLED FRUITS AND VEGETABLES

Pickling is a process of preserving fruits and vegetables in brine, oil, water or vinegar. The Australia New Zealand Food Standard Code 2.3.1 requires the preserved fruits and vegetables to have a pH not greater than 4.6 to prevent botulism.

SCAN QR CODE FOR LINK



DETERMINATION OF SODIUM CONTENT IN FOOD SAMPLES

Foods contain varying amounts of salt (NaCl), which has 40% sodium. Determining the sodium content in foods accurately reduces the health risks associated with it. The American Heart Association recommends consumption of less than 1500 mg/day sodium for most American adults, which is the level with the greatest effect on blood pressure.

SCAN QR CODE FOR LINK



SODIUM VALUE CHECK FOR CANNED FOOD

There is a growing concern on canned foods with large sodium content as excessive intake of sodium can cause high blood pressure and hypertension. To check the sodium content in canned food, dilute a sample with DI water in 1:5 ratio, then place the resulting solution onto the LAQUAtwin sodium ion meter.

SCAN QR CODE FOR LINK



MEASUREMENT OF CALCIUM IN MILK AND MILK BEVERAGES

Determining the calcium content of milk and milk beverages helps consumers accurately gauge their calcium intake. Unlike atomic absorption spectroscopy (AAS) and inductively coupled plasma atomic emission spectroscopy (ICP), the LAQUAtwin calcium ion meter offers a simpler method of measuring calcium ion-ionizing protein-bound calcium in sample using acid before analysis.

SCAN QR CODE FOR LINK



MEASUREMENT OF SODIUM IN ATHLETE'S SWEAT

Determining the sodium concentration in sweat and replacing that with proper electrolyte intake prevent fluid and electrolyte imbalances. Sweat can be easily extracted from sterile patches applied on skin and tested with LAQUAtwin sodium ion meter. According to Gatorade Sports Science Institute, the sodium results obtained with HORIBA falls within 15.4 mEq/L 95% of the time.

SCAN QR CODE FOR LINK



pH OF CEMENT FOR FLOOR INSTALLATION TESTING

Fresh concrete is usually very alkaline, above pH 11. When the alkalinity in a concrete subfloor is high, it can stop the floor covering adhesive from bonding properly to the concrete. Australian Standard 1884 for resilient flooring installation states the the pH level of the concrete surface should be between 9 and 10 before the flooring can be installed.

SCAN QR CODE FOR LINK



DETERMINATION OF POTASSIUM IN SEA WATER

Seawater has high ionic strength. To eliminate matrix effect in measuring the potassium (K^+) concentration, the standard solutions made with the same background as the seawater sample are recommended for calibration. The result of measurement using the LAQUAtwin Potassium Ion meter is within ±10% of typical seawater concentration.

SCAN QR CODE FOR LINK



RESIDUAL SODIUM CHECK DURING CLEAN-IN-PLACE PROCESS

Caustic soda or sodium hydroxide (NaOH) is the chemical commonly used in alkaline cleaning solution for clean-in-place (CIP) in process plants. Measuring the sodium ion concentration on the water rinse or swab can indicate whether residual chemical has been removed properly from the process equipment.

SCAN QR CODE FOR LINK



MEASURING SALINITY OF WATER

Measuring the salinity or the dissolved salt content of water is important as aquatic organisms, livestock, and crops thrive at different salinity levels. Freshwater has a salinity value of less than 0.5 ppt while seawater has an average salinity of 35 ppt.

SCAN QR CODE FOR LINK

Scan for More Application Notes



Meter Specifications





Model#	pH-11	pH-22	pH-33	ORP-11
Parameters	pH, mV	pH, mV	pH, mV, Temp	ORP, Temp
Features	WATER PROOF, MICRO VOLUME, 2 PT CAL, 0.1 pH	WATER PROOF, MICRO VOLUME, 3 PT CAL, 0.01 pH	WATER PROOF, MICRO VOLUME, 5 PT CAL, 0.01 pH	WATER PROOF, MICRO VOLUME, 1 PT CAL
Part No.	3999960122	3999960123	3999960124	3200965260
Measurement Principle	Glass Electrode			ORP Electrode
Min. Sample	0.1 ml (0.05 ml with Sampling Sheet B)			0.3ml (0.05ml with Sampling Sheet B)
pH Range / Resolution	0.0 to 14.0 pH / 0.1 pH	0.00 to 14.00 pH / 0.01 pH		—
mV Range / Resolution	-650 to 650 mV / 1 mV			-1000 to 1000 mV / 1 mV
Accuracy	± 0.1 pH	± 0.01 pH		± 2 mV
Max. Calibration Points	2	3	5	1
Calibration Curves	USA: 1.68, 4.01, 7.00, 10.01 & 12.46 NIST: 1.68, 4.01, 6.86, 9.18 & 12.46			225 mV
Temperature Display / Resolution	—		0 to 50.0 °C / 0.1 °C	
Functions	• Automatic Buffer Recognition			• ORP and Eh Measurements • Automatic Standard Recognition • Auto / Custom Calibration Value
	• Temperature Compensation • Temperature Calibration* • Auto Hold / Auto Stable • Automatic Power Off (30 mins) • Low Battery Indicator • Rated IP67 Water / Dust Proof • Replaceable Sensor			
Display	Custom (Monochrome) Digital LCD with Backlight			
Operating Temperature / Humidity	5 to 40 °C / 85% or less in relative humidity (no condensation)			
Battery Life	Approx. 400 hrs. continuous use without backlight			
Materials	ABS epoxy body / flat glass sensor			ABS epoxy body / platinum disk sensor
Dimensions	164 x 29 x 20 mm (excluding projections)			
Mass	Approx. 50g (excluding batteries)			
Accessories included	• pH 7.00 & 4.01 Buffers (14 ml each)			• 225 mV ORP Standard (14 ml) • Abrasive Cotton Swab • Sampling Sheet B (5 pcs)
	• Dropper • Instruction & Quick Manuals • Storage Case			

*Applicable for models with temperature display #Requires 2 x CR2032 batteries (not included)

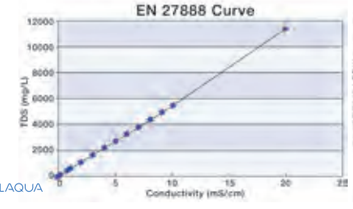


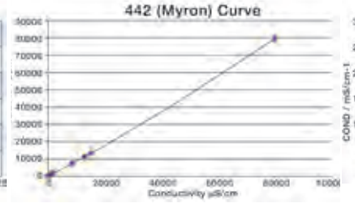


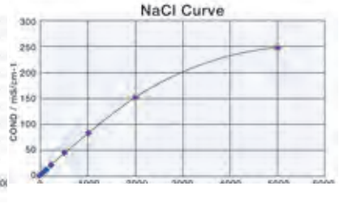
Model#	4EC-11	4EC-22	4EC-33	4ECSalt-11
Parameters	COND	COND Temp	COND TDS Temp	Salt Temp
Features	WATER PROOF, MICRO VOLUME, 3 PT CAL, -19.9 mS/cm	WATER PROOF, MICRO VOLUME, 4 PT CAL, -199.9 mS/cm	WATER PROOF, MICRO VOLUME, 4 PT CAL, -199.9 mS/cm	WATER PROOF, MICRO VOLUME, 2 PT CAL, EV CONV
Part No.	3201077522	3201077523	3201077524	3201077528
Measurement Principle	4 Electrode			
Min. Sample	0.12 ml			
Measurement Range / Resolution	Conductivity 0 to 199 µS/cm (1 µS/cm) 200 to 1999 µS/cm (1 µS/cm) 2.00 to 19.99 mS/cm (0.01 mS/cm)	Conductivity 0 to 199 µS/cm (1 µS/cm) 200 to 1999 µS/cm (1 µS/cm) 2.00 to 19.99 mS/cm (0.01 mS/cm) 20.0 to 199.9 mS/cm (0.1 mS/cm)	Conductivity 0 to 199 µS/cm (1 µS/cm) 200 to 1999 µS/cm (1 µS/cm) 2.00 to 19.99 mS/cm (0.01 mS/cm) 20.0 to 199.9 mS/cm (0.1 mS/cm)	Salinity 0.0 ppt to 100.0 ppt^: 0.1 ppt 0.00% to 10.00%: 0.01%
	—		TDS 0.0 to 99.9 ppm (0.1 ppm) 100 to 999 ppm (1 ppm) 1000 to 9990 ppm (10 ppm)	
Accuracy	± 2% full scale (for each range)	• ±2% full scale (0 to 19.99 mS/cm) • ±5% full scale (20.0 to 199.9 mS/cm)		• ±2% full scale (0.0 to 9.9 ppt) • ±4% full scale (10.0 to 100.0 ppt)
Max. Calibration Points	3	4		2
Calibration Curves	84µS/cm, 1413 µS/cm, 12.88 mS/cm	84µS/cm, 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm		NaCl / Sea water
	—		TDS Factor (0.4 to 1.0) / EN 27888 / 442 / NaCl	
Temperature Display / Resolution	—	0 to 50.0 °C (0.1 °C)		
Functions	• Automatic Range • Automatic Standard Recognition • Temperature Compensation (2%/°C fixed) • Temperature Calibration* • Auto Hold / Auto Stable • Automatic Power Off (30 mins) • Low Battery Indicator • IP67 Water / Dust Proof • Replaceable Sensor			
Display	Custom (Monochrome) Digital LCD with Backlight			
Operating Temperature/ Humidity	5 to 40 °C / 85% or less in relative humidity (no condensation)			
Battery Life	Approx. 400 hrs. continuous use without backlight			
Materials	ABS epoxy body / carbon sensor			
Dimensions	164 x 29 x 20 mm (excluding projections)			
Mass	Approx. 45g			
Accessories included	• 1413 µS/cm & 12.88 mS/cm Conductivity Standard Solutions (14ml each)			• 5 ppt (0.5%) and 50 ppt (5%) NaCl Standard Solutions
	• Conditioning Solution (4 ml) • Dropper • Instruction & Quick Manuals • Storage Case			

*Applicable for models with temperature display ^ppt = parts per thousand = g/L #Requires 2 x CR2032 batteries (not included)

TDS CALIBRATION CURVES		
APPLICATION	**KEY CHEMICAL SPECIES**	**TDS SELECTION**
Aquaculture, pickling	NaCl	NaCl
Boiler water, HVAC	Na_2SO_4, $NaHCO_3$, NaCl	442
Environmental	EN standard for environmental water	EN 27888
General application	KCl	TDS Factor Linear Default: 0.5 Selectable: 0.4 to 1.0





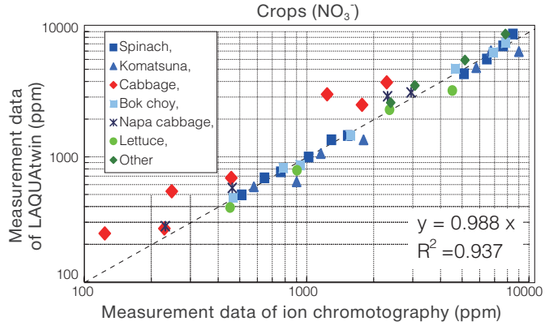


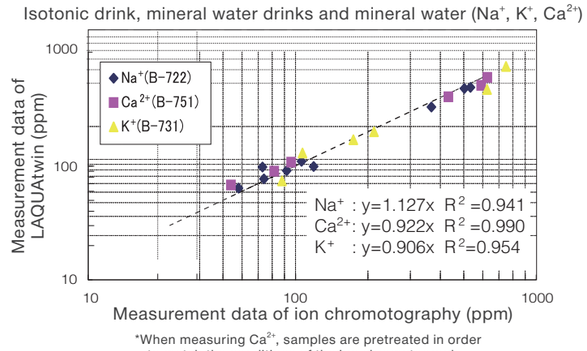


Model#	NO3-11	Na-11	K-11	Ca-11	F-11
Parameters	NO_3^- Temp	Na^+ Temp	K^+ Temp	Ca^{2+} Temp	F Temp
Features			WATER PROOF, MICRO VOLUME, 2 PT CAL		
Part No.	3200689162	3200689159	3200689160	3200689161	3200934412
Measurement Principle	Ion Selective Electrode				
Min. Sample	0.3 ml (0.05 ml with Sampling Sheet B)				0.3ml (0.1ml with Sampling Sheet B)
Measurement Range	NO_3^-: 6 to 9900 ppm (mg/L) (0.1 to 160 mmol/L) NO_3-N: 1.4 to 2200 ppm (mg/L)	2 to 9900 ppm (mg/L) (0.1 to 430 mmol/L)	4 to 9900 ppm (mg/L) (0.1 to 250 mmol/L) 2 to 5000 kg/10a (soil/water ratio 1:5)	4 to 9900 ppm (mg/L) (0.1 to 250 mmol/L)	0.1 to 990 ppm (mg/L)
Resolution	0 to 99 ppm: 1 ppm (mg/L) 100 to 990 ppm: 10 ppm (mg/L) 1000 to 9900 ppm: 100 ppm (mg/L)				0.1 to 9.9 ppm: 0.1 ppm 10 to 99 ppm: 1 ppm 100 to 990 ppm: 10 ppm
Accuracy	± 10% of actual value			± 20% of actual value	± 2% of actual value
Calibration Points	Up to 2				
Temperature Display / Resolution	0 to 50.0 °C / 0.1 °C				
Functions	• Auto Standard Recognition • Changeable High and Low Calibration Values • Multiplying Compensation (0.01 to 9.90) • Temperature Calibration • Auto Hold / Auto Stable Measurement • Temperature Compensation • Automatic Power Off (30 mins) • Low Battery Indicator • Rated IP67 Dust/Waterproof • Replaceable Sensor				
Display	Custom (Monochrome) Digital LCD with Backlight				
Operating Temperature / Humidity	5 to 40 °C / 85% or less in relative humidity (no condensation)				
Battery Life	Approx. 400 hours in continuous use without backlight				
Materials	ABS epoxy body / PVC sensor				ABS epoxy body / LaF_3 crystal sensor
Dimensions	164 x 29 x 20 mm (excluding projections)				
Mass	Approx. 50g (excluding batteries)				
Accessories included	• 150 & 2000 ppm Standard Solutions (14 ml each) • Dropper				• 1 & 10 ppm Fluoride Standards (14 ml each) • TISAB (14 ml) • 5 ml Beaker • Syringe
	• Sampling Sheet B (5pcs) • Instruction & Quick Manuals • Storage Case				

#Requires 2 x CR2032 batteries (not included)

Correlation Between LAQUAtwin Measurement Data And Ion Chromatography





*When measuring Ca^{2+}, samples are pretreated in order to match the conditions of the ion chromatography.

Accessories & Solutions

LAQUAtwin Replacement Sensors

Part No.	Model	Description
3200459834	S010	pH Sensor (for pH-11, pH-22 & pH-33)
3200459866	S021	Salt Sensor (for Salt-22)
3200459867	S022	Sodium Ion Sensor (for Na-11)
3200459868	S030	Potassium Ion Sensor (for K-11)
3200459870	S040	Nitrate Ion Sensor (for NO3-11, NO3-11C & NO3-11S)
3200459869	S050	Calcium Ion Sensor (for Ca-11)
3200459672	S070	Conductivity Sensor (for EC-11, EC-22 & EC-33)
3201079162	S073-4EC	Conductivity Sensor (for 4EC-11, 4EC-22 & 4EC-33)
3200597237	S071	Salt EC Sensor (for Salt-11)
3201079163	S074-4EC	Salt EC Sensor (for 4ECSalt-11)
3200934450	S060-F	Fluoride Ion Sensor (for F-11)
3200997083	S080-ORP	ORP Sensor (for ORP-11)



LAQUAtwin Replacement Sensors

LAQUAtwin Standard Solutions (6 x 14ml bottles per pack)

Part No.	Model	Description
3999960108	514-4	pH 4.01 Buffer
3200691954	514-686	pH 6.86 Buffer
3999960109	514-7	pH 7.00 Buffer
3999960110	514-22	1413 µS/cm Conductivity Standard Solution
3999960111	514-23	12.9 Conductivity Standard Solution
3999960112	514-05	0.5% NaCl Standard Solution
3999960113	514-50	5.0% NaCl Standard Solution
3999960114	514-20	Conditioning Solution (For EC-11, EC-22, EC-33 & Salt-11)
3201081522	514-4EC-CON	Conditioning Solution (For 4EC-11, 4EC-22, 4EC-33 & 4ECSalt-11)
3200457723	Y022H	2000ppm Sodium Ion Standard Solution
3200457724	Y022L	150ppm Sodium Ion Standard Solution
3200457719	Y031H	2000ppm Potassium Ion Standard Solution



pH Buffers



Conductivity Standard Solutions



NaCl Standard Solutions



Conditioning Solutions

Part No.	Model	Description
3200457720	Y031L	150ppm Potassium Ion Standard Solution
3200053433	Y041	5000ppm Nitrate Ion Standard Solution
3200053514	Y042	300ppm Nitrate Ion Standard Solution
3200053532	Y043	2000ppm Nitrate Ion Standard Solution
3200053535	Y044	30ppm Nitrate Ion Standard Solution
3200053536	Y045	150ppm Nitrate Ion Standard Solution
3200457727	Y051H	2000ppm Calcium Ion Standard Solution
3200457728	Y051L	150ppm Calcium Ion Standard Solution
3200991628	514-F-1	1ppm Fluoride Ion Standard Solution
3200991630	514-F-10	10ppm Fluoride Ion Standard Solution
3200991632	514-F-TISAB	TISAB Solution
3200997084	514-ORP-225	225 mV ORP Standard Solution

LAQUAtwin Accessories

Part No.	Model	Description
3200053858	Y046	Sampling Sheet B (100pcs) for minute samples (≥ 0.05ml)
3200459736	Y048	Sampling Sheet Holder (use with sampling sheet B for samples with particulates)





Sodium Ion Standard Solutions



Potassium Ion Standard Solutions



Nitrate Ion Standard Solutions



Calcium Ion Standard Solutions



Fluoride Ion Standard Solutions



ORP Standard Solution



Sampling Sheet B



Sampling Sheet Holder

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LAQUA 200 Series Handheld Water Quality Meters

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