HORIBA

LAQUAtwin

Waterproof Pocket Water Quality Meters

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

2 YEAR WARRANTY

www.horiba-laqua.com

MADE IN JAPAN

Applications

pH, ORP, Ion, Salt, TDS, and Conductivity Pocket Meters

LAQUAtwin

pH ORP COND TDS Salt Na^+ K^+ NO_3^- Ca^{2+} F^-

pH COND

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

MULTI

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) found that the concentrations of NO_3^-, K^+, and Na^+ in soil solution and tomato plant sap determined by LAQUAtwin ion pocket meters showed good correlations with those obtained in soil solution and in leaf dry matter, respectively, determined by standard methods in laboratory, and concluded that LAQUAtwin ion pocket meters are useful low-cost tools in fertigation management.

Scan QR Code for link

pH

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

COND

Conductivity and Elephant's Foot Testing

Elephant's foot is a physiological disorder in sweet pepper (Capsicum annuum L.), where the base of the plant's stem becomes swollen below the cotyledon level and wounds develop at the base of the stem's epidermis because of salt accumulation. LAQUAtwin conductivity meter can be used to measure conductivity of soil and help farmers choose the best land to grow sweet pepper crops.

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pH

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

NO_3^-

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.

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COND Salt

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.

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Na^+

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.

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Ca2+

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

K+

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

K+

Potassium Determination in Plant Tissue

Comparison of LAQUAtwin Potassium Ion Meter and ICP Spectrometry Trials revealed close significant correlation (r values were 0.80 and 0.93 for first and second trials, respectively) between the LAQUAtwin potassium ion meter readings and ICP results obtained from plant's fresh petiole sap and dried tissue, respectively. This suggested that LAQUAtwin potassium ion meter could be an appealing field method substitute for rapid determination of potassium concentration in plants.

Scan QR Code for link

K+

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.

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NO3-

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

NO3-

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

MULTI

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. The 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 COND

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.

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MULTI

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.

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pH

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

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

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

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

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

Na+

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

Na+

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

Ca2+

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

Na+

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

NO3-

Nitrate Measurement in Hybrid Sudangrass and Pearl Millet Hays

Determining the nitrate concentrations of sudangrass and pearl millet before feeding them to livestock prevents nitrate toxicity. Plant sap testing with LAQUAtwin B-743 nitrate ion meter offers fast and accurate nitrate in-field analysis. Generally, the maximum nitrate concentrations considered safe for all cattle are 820 ppm and 700 ppm for sudangrass sap and pearl millet sap, respectively.

Scan QR Code for link

Na+

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

pH

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

Salt

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

Ca2+

Measurement of Calcium in Drinking Water

Determining the calcium content of drinking water 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 bound calcium in water using acid before analysis.

Scan QR Code for link

K+

Determination of Potassium in Sea Water

Seawater has high ionic strength. To eliminate matrix effect in measuring potassium (K^+) concentration, 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.

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LAQUAtwin

Compact Water Quality Meter

Lab in your pocket
LAQUAtwin compact meters
are simple and easy-to-use.

10 Water Quality Parameters: pH, ORP, Conductivity, Total Dissolved Solids (TDS), Ions (Na^+, K^+, NO_3^-, Ca^{2+}, F^-) and Salt

Employing the same test principle as laboratory electrodes, LAQUAtwin compact meters provide a reliable and accurate measurement. Select your meter that best suits your application from 13 colorful models.

Quick!
No container is needed to calibrate or measure. Only few drops of standards and samples are all you need.

Variety!
Measurements can be made in different positions because of the sensor design.

Anyone!
Easy & simple operation makes everyone an expert.

Solution!
Discover more with easy, on-site measurement.

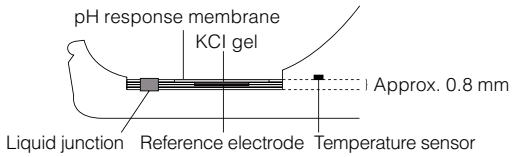
Wherever!
IP67 rated dust/ waterproof. Carry LAQUAtwin and its accessories in a carrying case.

Reliable!
HORIBA 60 years sensor technology distilled in HORIBA's unique flat sensor.

Cost effective
1/100 of standard solution and sample volume is needed. Sensor is replaceable.

Accurate reading from a single drop of sample in just a few seconds

Incorporating the same parts as standard laboratory electrodes, the LAQUAtwin compact meters are built with miniaturized components and unique flat sensor chip, which is less than 1 mm thick—a result of 60 years of HORIBA's sensor engineering technology.



●**Cross-sectional view of the flat pH sensor chip.**

Carrying case comes with calibration solutions and accessories

Everything you need for measurement is already packed in a carrying case for portability and storage. Also, you may attach a strap or tag (not included) on the strap hole of the meter for your convenience.

● Attach a strap or tag here.

Calibrate and measure at the touch of a button. Read the result when ☺ appears.

Hassle-free operation with single-button calibration and measurement. Record the reading once a smiley face appears on the display

Fully waterproof and dustproof (IP67 rated)[1] with backlight display

The LAQUAtwin compact meters can be used anywhere and anytime. No need to worry with water splashes or inclement weather during measurement. With the meter's backlight display, you may view the reading in testing sites with poor light condition.

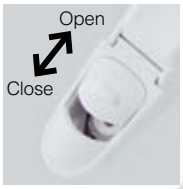
[1]Withstand immersion for 30 minutes at 1m depth. Not suitable for underwater use.

Easy measurement for all users

LAQUAtwin

Sensor
IP67 rated waterproof/dustproof. Sensor is easily replaceable.

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

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
IP67 rated waterproof/ dustproof.

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.

Battery Indicator
Appears when battery is low

Calibration mark
Calibration is complete when it stops flashing.

Measurement mark
Measurement is complete when it stops flashing.

Stability mark
Lights up when measurement is complete.

Temperature alarm
Flashes when the temperature is out of range.

Measurement value
Flashes when the measurement value is out of the range.

Voltage measurement mode
Displays sensor voltage.

Unique measurement options with LAQUAtwin

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

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

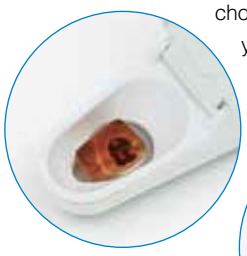
Drop a sample with a dropper; small volumes as 0.1 mL can be measured. Using sampling sheet B, volumes down to 0.05 mL can be tested.

Wipe

The sampling sheet allows tiny, trace volumes to be analysed. For example, wipe off the surface of the skin with a sampling sheet soaked with pure water and measure.

Solid samples

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



Paper, textiles and films

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

Powders

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

LAQUAtwin

	pH			ORP
Model	**pH-11** pH mV	**pH-22** pH mV	**pH-33** pH mV Temp	**ORP-11** 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)			0.3 ml (0.05 ml 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 • IP67 Water / Dust proof • Replaceable Sensor			
Display	Custom (monochrome) digital LCD with backlight			
Operating Temperature / Humidity	5 to 40.0 °C / ≤ 85% 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. 55g (including sensor and 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)
	CR2032 Batteries (2 pcs) • Dropper • Instruction & Quick Manuals • Storage Case			

* Applicable for models with temperature display

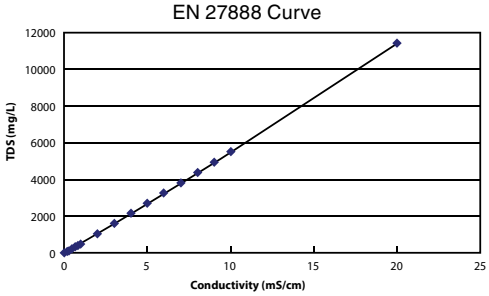
	Conductivity (EC)			Salt (NaCl)
Model	**EC-11** COND	**EC-22** COND Temp	**EC-33** COND TDS Temp	**Salt-11** Salt Temp
Features	WATER PROOF · MICRO VOLUME · 2 PT CAL · ~19.9 mS/com	WATER PROOF · MICRO VOLUME · 3 PT CAL · ~199.9 mS/com	WATER PROOF · MICRO VOLUME · 3 PT CAL · ~199.9 mS/com	WATER PROOF · MICRO VOLUME · 2 PT CAL · EC CONV
Part No.	3999960125	3999960126	3999960127	3999960128
Measurement Principle	2 Electrode Bipolar AC			
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)		Salt 0.0 to 100.0 g/L (0.1 g/L)
	—		TDS 0.0 to 99.9 ppm (0.1 ppm) 100 to 999 ppm (1 ppm) 1000 to 9990 ppm (10 ppm)	Salt 0.00 to 10.00 % (0.01 %)
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 g/L) ± 4% full scale (10.0 to 100.0 g/L)
Max. Calibration Points	2	3		2
Calibration Curves	1413 µS/cm, 12.88 mS/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% in relative humidity (no condensation)			
Battery Life	Approx. 400 hrs. continuous use without backlight			
Material	ABS epoxy body / Titanium coated with platinum black sensor			
Dimensions	164 x 29 x 20 mm (excluding projections)			
Mass	Approx. 50g (including sensor and batteries)			
Accessories included	1413 µS/cm & 12.88 mS/cm Conductivity Standard Solutions (14 ml each)			0.5% & 5.0% NaCl Standard Solutions (14 ml each)
	Conditioning Solution (4 ml) • CR2032 Batteries (2 pcs) • Dropper • Instruction & Quick Manuals • Storage Case			

*Applicable for models with temperature display

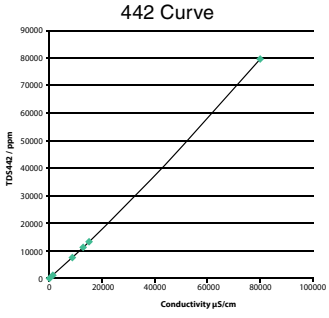
TDS Calibration Curves

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

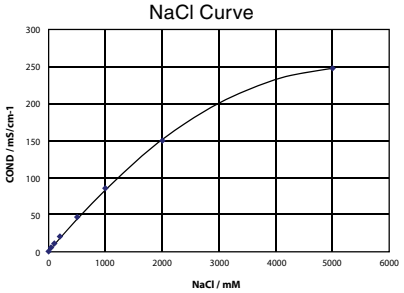
EN 27888 Curve



442 Curve



NaCl Curve



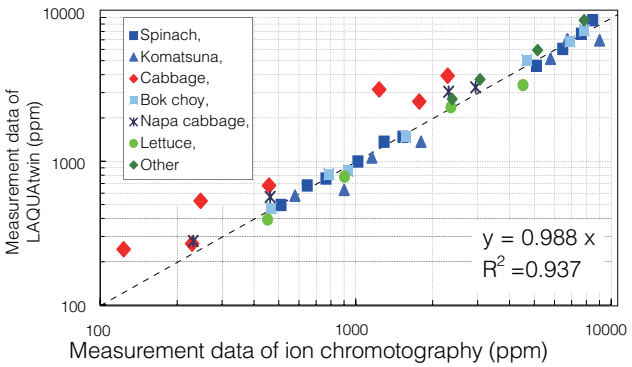
LAQUAtwin

	Sodium Ion (Na^+)	Potassium Ion (K^+)	Nitrate Ion (NO_3^-)	Calcium Ion (Ca^{2+})	Fluoride Ion (F^-)
Model	**Na-11** (Na+, Temp)	**K-11** (K+, Temp)	**NO3-11** (NO_3^-, Temp)	**Ca-11** (Ca^{2+}, Temp)	**F-11** (F, Temp)
Features	WATER PROOF, MICRO VOLUME, 2 PT CAL	WATER PROOF, MICRO VOLUME, 2 PT CAL	WATER PROOF, MICRO VOLUME, 2 PT CAL	WATER PROOF, MICRO VOLUME, 2 PT CAL	WATER PROOF, MICRO VOLUME, 2 PT CAL
Part No.	3200689159	3200689160	3200689162	3200689161	3200934412
Measurement Principle	Ion Selective Electrode				
Min. Sample	0.3 ml (0.05 ml with Sampling Sheet B)				0.3 ml (0.1 ml with Sampling Sheet B)
Measurement Range	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)	NO_3^-: 6 to 9900 ppm (mg/L) (0.1 to 160 mmol/L) NO_3^-N: 1.4 to 2200 ppm (mg/L)	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 100 to 990 ppm: 10 ppm 1000 to 9900 ppm: 100 ppm				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
Max. Calibration Points	2				
Temperature Display / Resolution	0 to 50.0 °C / 0.1 °C				
Functions	Automatic Standard Recognition • Changeable Low and High Calibration Values • Temperature Compensation • Temperature Calibration • Multiplying Compensation (0.01 to 9.90) • 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% in relative humidity (no condensation)				
Battery Life	Approx. 400 hrs. continuous use without backlight				
Material	ABS epoxy body / PVC sensor				ABS epoxy body / LaF_3 crystal sensor
Dimensions	164 x 29 x 20 mm (excluding projections)				
Mass	Approx. 55g (including sensor and 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) • CR2032 Batteries (2 pcs) • Instruction & Quick Manuals • Storage Case				

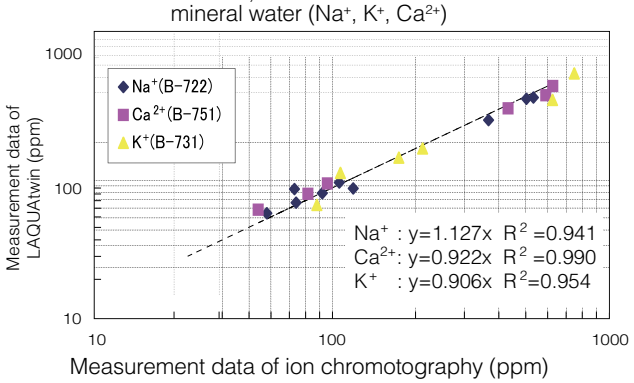
* Applicable for models with temperature display

Correlation between LAQUAtwin measurement data and ion chromatography

Crops (NO_3^-)



Isotonic drink, mineral water drinks and mineral water (Na^+, K^+, Ca^{2+})



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

Solutions & Accessories

LAQUAtwin

LAQUAtwin Replacement Sensors		
Part No.	Model	Description
3200459834	S010	pH Sensor (for B-711, B-712, B-713, pH-11, pH-22 & pH-33)
3200459866	S021	Salt Sensor (for B-721)
3200459867	S022	Sodium Ion Sensor (for B-722 & Na-11)
3200459868	S030	Potassium Ion Sensor (for B-731 & K-11)
3200459870	S040	Nitrate Ion Sensor (for B-741, B-742, B-743, NO3-11, NO3-11C & NO3-11S)
3200459869	S050	Calcium Ion Sensor (for B-751 & Ca-11)
3200459672	S070	Conductivity Sensor (for B-771, EC-11, EC-22, & EC-33)
3200597237	S071	Salt EC Sensor (for Salt-11)
3200934450	S060-F	Fluoride Ion Sensor (for F-11)
3200997083	S080-ORP	ORP Sensor (for ORP-11)

LAQUAtwin Replacement Sensors

pH Buffers

Conductivity Standard Solutions

NaCl Standard Solutions

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 Conductivity & Salt Sensors)
3200457723	Y022H	2000ppm Sodium Ion Standard Solution
3200457724	Y022L	150ppm Sodium Ion Standard Solution
3200457719	Y031H	2000ppm Potassium Ion Standard Solution
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

Sodium Ion Standard Solutions

Potassium Ion Standard Solutions

Calcium Ion Standard Solutions

Fluoride Ion Standard Solutions

TISAB Solution

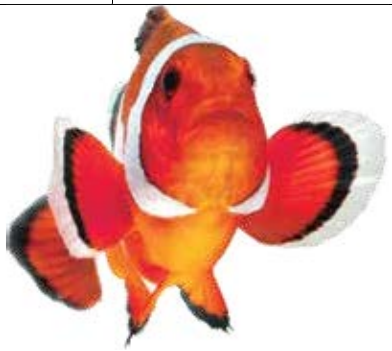
225 mV ORP Standard Solution

Nitrate Ion Standard Solutions

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)

Sampling Sheet Holder

Sampling Sheet B

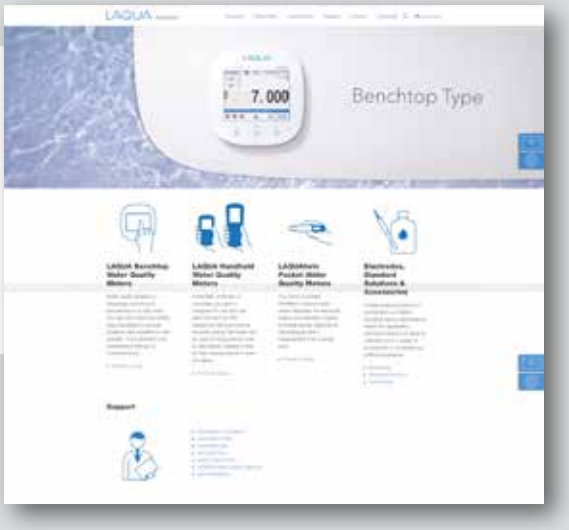


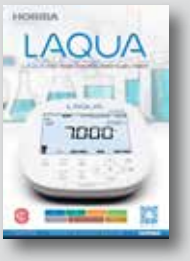
Visit HORIBA's website!

Water Quality Analyzers

www.horiba-laqua.com

With over 60 years of engineering excellence, HORIBA's diverse range of water quality analyzers and electrodes are ideal for everyday laboratory needs through to the most demanding of applications. Visit our website for a wealth of useful information and water quality measurement tips to help you obtain the best results in your work.





Benchtop Meters

Developed using extensive feedback from users, our new LAQUA meters deliver the best solution for water quality analysis. Our LAQUA website features an online 'Selection Guide' to enable you to find the perfect LAQUA meter and electrode for your need.

Handheld Meters

In the lab, in the field or anywhere you need it. LAQUA Handheld meters are designed for use with one hand and with an IP67 waterproof rating and shock-resistant casing. Meters can be used for long periods, even in dark places, making it ideal for field measurements in rivers and lakes.

Electrodes

Various electrodes to match any application. A wide range of products for both benchtop and portable systems are available, including easy and reliable standard models, application-focused models for small samples or large containers, and special electrodes for specific sample characteristics.

Application Notes

LAQUAtwin pocket meters offer quick and convenient alternative to analyze important parameters with high accuracy. Several application notes are available at (http://goo.gl/znwE6j) detailing the use of LAQUAtwin and the results achieved for the respective applications. Additional application notes will be added when available.

Visit the **HORIBA LAQUA Singapore** Channel on YouTube and subscribe to see more of our videos.

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