

# LAQUAtwin



Actual Size



CE marking compliant



## Compact Water Quality Meter

# NEW

# LAQUA twin

HORIBA's 60 years of sensor engineering realize accurate direct measurement from only a single drop on the unique flat sensor.

Select LAQUA twin from seven electrochemistry parameters such as pH, conductivity, various ions ( $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{NO}_3^-$ ,  $\text{Ca}^{2+}$ ) and salt concentration that suits your purpose.

Bring simple, compact LAQUA twin with you wherever and whenever you want to. It is your "lab-in-a-pocket."

### Quick!

No container is needed to calibrate or measure. Few drops of standards and samples is all you need.

### Variety!

Many different measurement methods can be made because of the sensor configuration.

### Anyone!

Easy, simple operation and indicators makes everyone an expert.

### Solution!

Discover more with easy, on-site measurement and only ion measurement

### Wherever!

IP67 rated waterproof. Carry LAQUA twin and its accessories in a carrying case (included).

### Reliable!

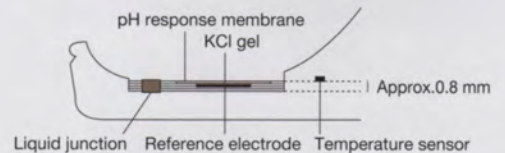
HORIBA 60 years sensor technology distilled in HORIBA original flat sensor.

### Cost effective

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

### Accurate reading from only a single drop, in a few seconds

Employing the same test principle as standard laboratory electrodes, the LAQUA twin packs all components into a flat sensor chip that's less than 1 mm thick.



● Sectional drawing of tip of Flat sensor.

\* Figure shows B-711/B-712/B-713 (pH)

\* Comparison between a measurement in a container and a direct drop using LAQUA twin.

### pH, conductivity, ions and salt concentration. 7 parameters, 11 models.

Seven water quality parameters are available to suit your purpose, such as pH, conductivity, concentration of ion ( $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{NO}_3^-$ ,  $\text{Ca}^{2+}$ ) and salt concentration. Incorporating the same principle as the laboratory sensors, LAQUA twin will provide a reliable measurement.

### Calibrate and measure at the touch of a button – the Smiley face will tell you when the result can be read

Easy operation for both the measurement and indispensable calibration procedure. Read the data once a smiley face lights up.

### LAQUA twin is fully waterproof and dustproof\* (IP67 rated)

The meter and sensor are fully waterproof so you can take it anywhere anywhere. No worries when water splashes during measurement or cleaning.

\* IP67 rated. Will withstand immersion for 30 minutes at 1 m. Not suitable for underwater use.

### Carrying case comes standard for handy portability

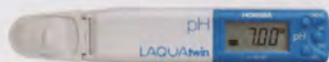
The compact carrying case contains everything you need for your measurements, including the standard solution. Ready to measure only with carrying case, it's a your laboratory! You can attach a strap or tag on the strap hole.



● Attach a strap or tag here.

\* Strap not included

## Select LAQUAtwin from 7 parameters depending on your sample or application



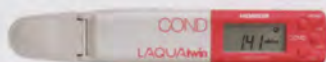
### pH Meter B-711/B-712/B-713 (US only)

#### Feature

pH flat sensor with temperature compensation offers a reliable and quick direct measurement of a micro-sample from 100 µL.

#### Applications include

Fresh water testing (rain, rivers, lakes,); aquaria; drainage treatment solutions; soil testing; foods testing; research laboratories; QC of medical supplies and cosmetics; school education, etc.



### Conductivity (EC) Meter B-771

#### Feature

Conductivity reading converted into Salt concentration and TDS. Autoranging & temperature compensation feature allows accuracy on a measurements wide range.

#### Applications include

Fresh water testing (rain, rivers, lakes); aquaria; soil testing; salt water damage testing; surface cleanliness testing and improved paint adhesion.



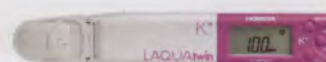
### Sodium Ion Meter B-722

#### Feature

Unique compact meter for quick, on-site and reliable measurement of sodium ion using ion selective electrode (ISE).

#### Applications include

Health management; food quality control; environmental measurement; salt water damage testing.



### Potassium Ion Meter B-731

#### Feature

Unique compact meter for quick, on-site and reliable measurement of potassium ion using ion selective electrode (ISE).

#### Applications include

Soil testing; food quality control; cultivation management; health management; food quality control

	pH		Conductivity (EC)	Sodium Ion (Na <sup>+</sup> )	Potassium Ion (K <sup>+</sup> )
Model	B-711	B-712/B-713*1	B-771	B-722	B-731
Measurement principle	Glass electrode method		2 AC bipolar		
Minimum sample volume	0.05 mL*3, 0.1 mL or more		0.12 mL or more		
Measurement range	2 to 12 pH		Conductivity: 0 to 19.9 mS/cm (0 to 1.99 S/m) Salt: 0 to 1.1% TDS: 0 to 9900 ppm	23 to 2300 ppm (mg/L) (10 <sup>-3</sup> to 10 <sup>-1</sup> mol/L)	39 to 3900 ppm (mg/L) (10 <sup>-3</sup> to 10 <sup>-1</sup> mol/L) 20 to 2000 kg/10a*4
Display range*5	0 to 14 pH		0 to 199 mS/cm (0 to 19.9 S/m)		
Range and Resolution (Numbers)	0.1 pH	0.1/0.01 pH (Selectable)	① 0 to 199 µS/cm: 1 µS/cm ② 0.20 to 1.99 mS/cm: 0.01 mS/cm ③ 2.0 to 19.9 mS/cm: 0.1 mS/cm ④ 20 to 199 mS/cm: 1 mS/cm	① 0 to 1.0 ppm: 0.1 ppm ② 0 to 99 ppm: 1 ppm ③ 100 to 990 ppm: 10 ppm ④ 1000 to 9900 ppm: 100 ppm	
Calibration	One-point	Two-point*6	Two-point*6		
Accuracy*7	±0.1 pH		±2% F.S. ±1digit (for each range)*8		±10% of reading value
Functions	Temperature compensation • IP67 Water/Dust proof*9 • Auto hold • Automatic power off (30 minutes)		Salt/TDS Measurement • Auto range change • Temperature conversion (2%/°C fixed) • IP67 Water/Dust proof*9 • Auto hold • Automatic power off (15 minutes)		Auto range change • Temperature compensation
Display	Custom (monochrome) Digital LCD				
Operating temperature/humidity	5 to 40°C, 85% or less in relative humidity (no condensation)				
Power	CR2032 batteries (x2)				
Battery life	Approx. 400 hours in continuous use				
Main Material	ABS epoxy				
Dimensions/Mass	164 mm × 29 mm × 20 mm (excluding projections)/Approx. 50 g (meter only, without batteries)				
Accessories included	Standard solution (pH 7) (14 mL), 5 pieces of Sampling sheet B	Standard solution (pH 4 & pH 7*10) (14 mL), 5 pieces of Sampling sheet B	Standard solution (1.41 mS/cm) (14 mL), Treatment reagent (14 mL) * For the high conductivity standard solution (12.9 mS/cm) is sold separately.	Standard solution (150 ppm & 2000 ppm) (14 mL), 5 pieces of Sampling sheet B	Standard solution (150 ppm & 2000 ppm) (14 mL), 5 pieces of Sampling sheet B

\*1 For US market only.

\*2 Special application packages for crop measurement (B-741) and soil measurement (B-742) are also available.

\*3 Smaller amount (0.05 mL or more) can be measured with the sampling sheet B. (Please close the light shield cover. If a sample that contain particulate, please use "Sampling sheet holder" (sold separately))

\*4 With soil/water sampling ratio of 1:5.

\*5 When the measured value is out of the measurement range, the displayed value blinks. It should be used only as a guide.

\*6 Selectable between one-point and two-point calibrations. High conductivity standard solution (12.9 mS/cm) is sold separately.

\*7 Repeatability in measurement of a standard solution after calibration using it.

\*8 ① ±5 µS/cm (0 to 199 µS/cm) ② ±0.05 mS/cm (0.20 to 1.99 mS/cm) ③ ±0.5 mS/cm (2.0 to 19.9 mS/cm)

\*9 IP67: no failure when immersed in water at a depth of 1 meter for 30 minutes. But the product can not be used underwater.

\*10 ①: pH 6.86/B-713: pH 7.00 for US market.

\*1 Measurement value may be affected by other ions contained in the sample. Refer to the table below for details.  
 \*2 A sample pretreatment may be needed for measurement for total Calcium concentration.



## Nitrate Ion Meter B-743 (for general use)

### Feature

Compact meter for quick, on-site and reliable measurement of nitrate ion. Special application kits for crop (B-741) and soil (B-742) are also available.

### Applications include

Soil testing; food quality control; cultivation management; food quality control; Growth management of crops.



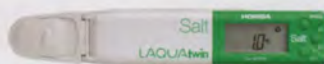
## Calcium Ion Meter B-751

### Feature

Unique compact meter for quick, on-site and reliable measurement of ionized calcium using ion selective electrode (ISE).

### Applications include

Soil testing; food quality control; cultivation management; health management; food quality control; breeding water of coral; water hardness measurement



## Salt Meter B-721

### Feature

Unique compact meter using a sodium ion electrode to measure salt content (NaCl) when conventional meters generally convert the conductivity value.

### Applications include

Health management; food quality control; Dietary instruction

Nitrate Ion (NO <sub>3</sub> <sup>-</sup> )	Calcium Ion (Ca <sup>2+</sup> )	Salt (NaCl)
B-743*2 (for general use)	B-751	B-721
Ion electrode method		
0.05 mL*3, 0.3 mL or more		
NO <sub>3</sub> <sup>-</sup> : 62 to 6200 ppm (mg/L) (10 <sup>-3</sup> to 10 <sup>-1</sup> mol/L)	40 to 4000 ppm (mg/L) (10 <sup>-3</sup> to 10 <sup>-1</sup> mol/L)	0.1 to 10% by weight
NO <sub>3</sub> -N: 14 to 1400 ppm (mg/L)		
0 to 9900 ppm (mg/L)		0.00 to 25% by weight
ppm		① 0.00 to 0.99%: 0.01% by weight
ppm		② 1.0 to 9.9%: 0.1% by weight
10 ppm		③ 10 to 25%: 1% by weight
Resolution: 100 ppm		
Two-point*6		
	±20% of reading value	±10% of reading value
IP67 Water/Dust proof*9 • Auto hold • Automatic power off (30 minutes)		
Batteries, B-771 approx. 45 g)		
Storage case		
Standard solution (300 ppm & 2000 ppm) (14 mL), 5 pieces of Sampling sheet	Standard solution (150 ppm & 2000 ppm) (14 mL), 5 pieces of Sampling sheet	Standard solution (0.5%, 5%) (14 mL), 5 pieces of Sampling sheet

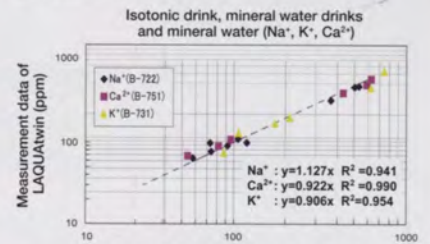
### Interfering ion influence

	Sodium Ion (Na <sup>+</sup> )	Potassium Ion (K <sup>+</sup> )	Nitrate Ion (NO <sub>3</sub> <sup>-</sup> )	Calcium Ion (Ca <sup>2+</sup> )
Interference coefficient	K <sup>+</sup> , Rb <sup>+</sup> = 1 x 10 <sup>-2</sup> Ba <sup>2+</sup> , Sr <sup>2+</sup> , Ca <sup>2+</sup> , Mg <sup>2+</sup> = 1 x 10 <sup>-4</sup> Li <sup>+</sup> = 1 x 10 <sup>-3</sup> Cs <sup>+</sup> = 3 x 10 <sup>-3</sup> NH <sub>4</sub> <sup>+</sup> = 6 x 10 <sup>-3</sup>	Rb <sup>+</sup> = 1 x 10 <sup>-1</sup> Mg <sup>2+</sup> = 1 x 10 <sup>-5</sup> NH <sub>4</sub> <sup>+</sup> = 7 x 10 <sup>-3</sup> Ca <sup>2+</sup> = 7 x 10 <sup>-7</sup> Cs <sup>+</sup> = 4 x 10 <sup>-3</sup> Na <sup>+</sup> = 3 x 10 <sup>-4</sup>	I <sup>-</sup> = 10 Cl <sup>-</sup> = 4 x 10 <sup>-2</sup> Br <sup>-</sup> = 9 x 10 <sup>-1</sup> ClO <sub>4</sub> <sup>-</sup> = 30 NO <sub>2</sub> <sup>-</sup> = 7 x 10 <sup>-1</sup>	Na <sup>+</sup> , K <sup>+</sup> , Mg <sup>2+</sup> = 1 x 10 <sup>-3</sup> Fe <sup>3+</sup> , Zn <sup>2+</sup> = 1 Fe <sup>3+</sup> = 10 Cu <sup>2+</sup> = 1 x 10 <sup>-2</sup>
pH range	pH 3-9 (at 10 <sup>-3</sup> mol/L Na <sup>+</sup> )	pH 2-9 (at 10 <sup>-3</sup> mol/L K <sup>+</sup> )	pH 2-9 (at 10 <sup>-3</sup> mol/L NO <sub>3</sub> <sup>-</sup> )	pH 4-12 (at 10 <sup>-3</sup> mol/L Ca <sup>2+</sup> )

Interference coefficient is a concentration ratio of the interfering ion against the target ion, which affects the target ion measurement value. For example, the interference coefficient of potassium ion against sodium ion is 1x10<sup>-2</sup>, which means for the same concentration of potassium ion and sodium ion coexisting in a sample, the sodium measurement shows approximately 1x10<sup>-2</sup>(1%) higher result.

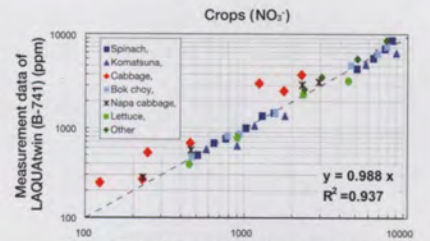
### Examples for Ion measurement

The graph below depicts the correlation between LAQUAtwin and ion chromatography.



Measurement data of ion chromatography (ppm)

\* When measuring Ca<sup>2+</sup>, we are pretreated in order to match the conditions of the ion chromatography.



Measurement data of ion chromatography (ppm)

### Nitrate Ion Meter for crop B-741



Measurement range: 100~9,900 ppm (NO<sub>3</sub><sup>-</sup>),  
23~2,200 ppm (NO<sub>3</sub><sup>-</sup>-N)

#### [Accessories included]

Standard solution for crops(300 ppm & 5000 ppm) (14 mL),  
 2 CR2032 batteries/Instruction manual/5 Pipettes,  
 Cleaning solution bottle (250 mL),  
 Crop sample press, 3 Medical cups, Quick manual,  
 Carrying case

### Nitrate Ion Meter for soil B-742



Measurement range: 30~600 ppm (NO<sub>3</sub><sup>-</sup>),  
6.8~140 ppm (NO<sub>3</sub><sup>-</sup>-N),  
3.4~68 kg/10a (NO<sub>3</sub><sup>-</sup>-N)

#### [Accessories included]

Standard solution for soil (30 ppm, 300 ppm) (14 mL),  
 2 CR2032 batteries, Instruction manual/5 Pipettes,  
 Cleaning solution bottle (250 mL),  
 3 Extraction bottles (100 mL),  
 2 sets of spoon for soil sampling, Tweezers,  
 Sampling sheet, 2 Sampling sheet holders,  
 Quick manual, Carrying case

## Unique measurement variation by LAQUAtwin

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



### Drops

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



### 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 for example from a river. Vertically scoop is available with a unique sensor guard.



### 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.



### Powders

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



### 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 drop on a define amount of pure water.

\* All methods applicable to pH measurement \* B-771 (conductivity) cannot be tested in solids, powders, and sheet-like samples.  
\* These pictures are for image purpose

## Easy measurement for all users

**IP67 rated waterproof and dustproof. Sensor is easily replaceable.**

**Meter**  
IP67 rated waterproof and dustproof.

**Strap hole**  
You can attach a strap or tag here.

**Measurement button**  
Press when ready to measure and for auto-hold.

**On/Off button**

**Calibration button**  
Automatic calibration is easy with this button.

**Sensor guard (light shield)**  
Sensor guard protects sensor. Integrated slide cap opens for scooping water samples. Open the whole sensor guard when placing water or solid samples directly on the sensor.

**Battery alarm**

**Calibration mark**  
Calibration is complete when it stops flashing.

**Measurement mark**  
Measurement is complete when it stops flashing. (Measurement result will be on hold)

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

**Stability mark**  
Lights up when measurement is complete.

**Temperature alarm**  
Flashes when the temperature is out of range.

**Voltage measurement mode**  
Displays sensor voltage (except for B-771).

**Slide cap**

Open  
Close

\* Picture shows B-712/B-713

Standard solution

Part Number	Model	Name	Description	Applicable model
3200457725	Y017	Standard solution (pH 6.86)	pH 6.86 14 mL 6 bottles	B-711, B-712
3200457726	Y014	Standard solution (pH 4.01)	pH 4.01 14 mL 6 bottles	B-712, B-713
3200457721	Y021H	Standard solution (NaCl 5.0%)	NaCl 5.0% 14 mL 6 bottles	B-721
3200457722	Y021L	Standard solution (NaCl 0.5%)	NaCl 0.5% 14 mL 6 bottles	B-721
3200457723	Y022H	Standard solution (Sodium Ion 2000 ppm)	Sodium Ion 2000 ppm 14 mL 6 bottles	B-722
3200457724	Y022L	Standard solution (Sodium Ion 150 ppm)	Sodium Ion 150 ppm 14 mL 6 bottles	B-722
3200457719	Y031H	Standard solution (Potassium Ion 2000 ppm)	Potassium Ion 2000 ppm 14 mL 6 bottles	B-731
3200457720	Y031L	Standard solution (Potassium Ion 150 ppm)	Potassium Ion 150 ppm 14 mL 6 bottles	B-731
3200053433	Y041	Standard solution (Nitrate Ion 5000 ppm)	Nitrate Ion 5000 ppm 14 mL 6 bottles	B-741
3200053514	Y042	Standard solution (Nitrate Ion 300 ppm)	Nitrate Ion 300 ppm 14 mL 6 bottles	B-741, B-742
3200053532	Y043	Standard solution (Nitrate Ion 2000 ppm)	Nitrate Ion 2000 ppm 14 mL 6 bottles	B-743
3200053535	Y044	Standard solution (Nitrate Ion 30 ppm)	Nitrate Ion 30 ppm 14 mL 6 bottles	B-742
3200053536	Y045	Standard solution (Nitrate Ion 150 ppm)	Nitrate Ion 150 ppm 14 mL 6 bottles	B-743
3200457727	Y051H	Standard solution (Calcium Ion 2000 ppm)	Calcium Ion 2000 ppm 14 mL 6 bottles	B-751
3200457728	Y051L	Standard solution (Calcium Ion 150 ppm)	Calcium Ion 150 ppm 14 mL 6 bottles	B-751
3200457718	Y071H	Standard solution (Conductivity 12.9 mS/cm)	Conductivity 12.9 mS/cm 14 mL 6 bottles	B-771
3200457717	Y071L	Standard solution (Conductivity 1.41 mS/cm)	Conductivity 1.41 mS/cm 14 mL 6 bottles	B-771

Sensor

Part Number	Model	Name	Description	Applicable model
3200459834	S010	pH Sensor	Replacement sensor	B-711, B-712, B-713
3200459866	S021	Salt Sensor	Replacement sensor	B-721
3200459867	S022	Sodium Ion Sensor	Replacement sensor	B-722
3200459868	S030	Potassium Ion Sensor	Replacement sensor	B-731
3200459870	S040	Nitrate Ion Sensor	Replacement sensor	B-741, B-742, B-743
3200459869	S050	Calcium Ion Sensor	Replacement sensor	B-751
3200459672	S070	Conductivity Sensor	Replacement sensor	B-771

Accessories

Part Number	Model	Name	Description	Applicable model
3200053858	Y046	Sampling sheet B	100 pieces	Except B-771
3200459736	Y048	Sampling sheet holder ( for LAQUAtwin)		Except B-771

WEB HORIBA Water Quality Analyzers

Compact Water Quality Meter

LAQUAtwin

<http://www.horiba.com/laquatwin>

Benchtop pH/Water Quality Analyzer

LAQUA

<http://www.horiba.com/laqua>

WATER QUALITY ANALYZERS

LAQUA

<http://www.horiba-water.com>

**RHS COMPLIANT** Applying to the EU RoHS Directive : This products is compliant with the restriction of the designated 6 hazardous substances(\*). (\* ) lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE)  
**Using lead-free soldering : Lead-free soldering is used for mounting components of printed circuit boards.**  
 - Many countries consider the reinforcement of regulations concerning the risk caused by lead to human body and the environment

**⚠ Please read the operation manual before using this product to assure safe and proper handling of the product.**

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