English

ProbeBOX 1.0

User manual

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Status LED

Colours of the LED

Green:	No electrode connected
Blue:	pH electrode connected
Yellow:	ORP electrode connected
Violett:	EC electrode connected
White:	Start-up mode
Red:	ERROR

The status LED is underneath the transparent spot of the cover.

Please note:

The ProbeBOX 1.0 has **NO** battery and **NO** wireless connection options (WiFi or Bluetooth®).

General notes

Please read the following notes carefully, because they need to be observed to ensure precise measurements:

- In order to perform calibrations and measurements, please remove the protective cap of the electrode.
- If necessary, remove any possible salt residues by rinsing the electrode with tap water.
- Remove any air bubbles that might have formed in the electrode body by shaking it carefully.
- Please perform a calibration on new or for long times unused electrodes before takeing a measure ment with them.
- Rinse the electrodes after every calibration or measurement with destilled water to prevent cross-contamination of the different solutions. Never wipe the membrane with paper towels.
- Ensure that the reference solution is ok to use (expiry date, date of opening).
- If you have referece solutions in bottles, do not calibrate in the bottles.
- Please do not reuse any used reference solutions.

Connect

Connecting an electrode

- Open the rubber cover.
- Insert the connecting piece of the electrode and pay attention to the orientation of the pins.
- Fasten the electrode by screwing the silver ring tight. Do not screw it too tight to prevent any damage on the parts.

Connect to a PrimeLab 2.0 or LabCOM® app via a USB Type-C cable

- Open the rubber cover.
- Insert the USB Type-C cable in the USB Type-C slot of the ProbeBOX 1.0.
- Insert the other end of the cable in the PrimeLab 2.0 or your Android® smartphone.
- Wait until the ProbeBOX 1.0 has automatically turned on.

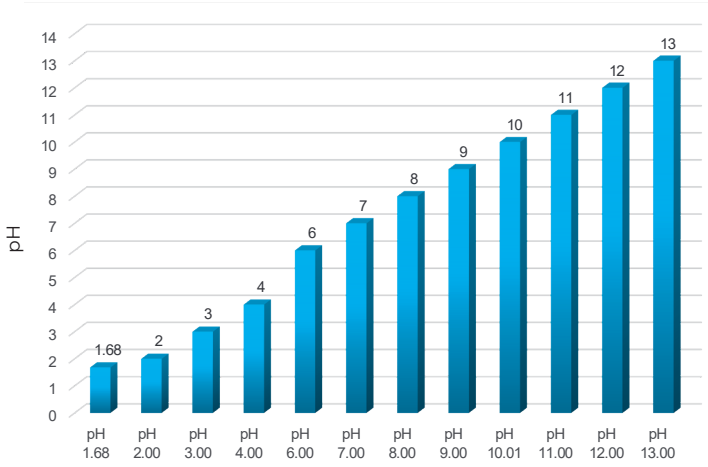
Calibration – pH electrode

Notes:

- When using a PrimeLab 2.0 a calibration **must** be carried out before each measurement.
- When using an Android® smartphone a calibration **must not** be carried out before each measurement but is recommended.
- When calibrating on an Android® smartphone, there is no 3 point calibration available.
- Use calibration solutions that are as close as possible to your expected measurement result to maximise the precision of the measurement.
  The following calibrating solutions are available in our range for this:

- pH 1.68
- pH 2.00
- pH 3.00
- pH 4.00
- pH 6.00
- pH 7.00
- pH 8.00
- pH 9.00
- pH 10.01
- pH 11.00
- pH 12.00
- pH 13.00

pH calibration solutions overview



Name of the solutions

Calibration – pH electrode

1. Connect the ProbeBOX 1.0 with the PrimeLab 2.0 or your Android® Smartphone via the USB Type-C cable.
2. Connect a pH electrode to the ProbeBOX 1.0 via the plug.
3. Tap on the *"ProbeBOX 1.0"* symbol in the PrimeLab 2.0 main menu, or tap on *"Connect to ProbeBOX"* under the USB tab in the LabCOM® app.
4. Tap on *"Calibrate"* on the PrimeLab 2.0, or tap on *"New Calibration"* in the LabCOM® app. (**Note:** A calibration is only available when the ProbeBOX 1.0 and the electrode have been recognised correctly.)
5. Select your prefered methode **(1-point / 2-point / 3-point calibration)**.

   Important: If you choose a 2-point or 3-point calibration, clean the electrode after each calibration step by rinsing it with destilled water. Otherwise the calibration might be incorrect.
6. Proceed with the instructions for your selected methode the following pages.

1-point calibration:

a. Select *"pH 7.00"* from the drop-down menu.

b. Rinse the electrode with distilled water and immerse it in the calibration solution. Ensure that the electrode tip is completely immersed in the calibration solution and stir it several times to remove any air bubbles that may be adhering to the electrode tip.

c. Tap on *"Set reference"*.

   The device in now calibrating.
   Wait until the display changes from *"Calibrating..."* to *"Done"*.
   Depending on the temperature, this may take up to 1 minute.

d. Tap on *"Save calibration"*.

Calibration – pH electrode

2-point calibration:

a. Select *"pH 7.00"* from the drop-down menu.

b. Rinse the electrode with distilled water and immerse it in the calibration solution. Ensure that the electrode tip is completely immersed in the calibration solution and stir it several times to remove any air bubbles that may be adhering to the electrode tip.

c. Tap on *"Set reference 1"*.

The device in now calibrating.
Wait until the display changes from *"Calibrating..."* to *"Done"*.
Depending on the temperature, this may take up to 1 minute.

d. Repeat steps a. – c. and this time select a calibration solution with pH < 7.00 (acidic) or pH > 7.00 (alkaline), depending on the expected measurement result.

e. Tap on *"Save calibration"*.

3-point calibration:

a. Select *"pH 7.00"* from the drop-down menu.

b. Rinse the electrode with distilled water and immerse it in the calibration solution. Ensure that the electrode tip is completely immersed in the calibration solution and stir it several times to remove any air bubbles that may be adhering to the electrode tip.

c. Tap on *"Set reference 1"*.

The device in now calibrating.
Wait until the display changes from *"Calibrating..."* to *"Done"*.
Depending on the temperature, this may take up to 1 minute.

d. Repeat steps a. – c. twice and select a calibration solution with pH < 7.00 for the first repetition and a calibration solution with pH > 7.00 for the second repetition.

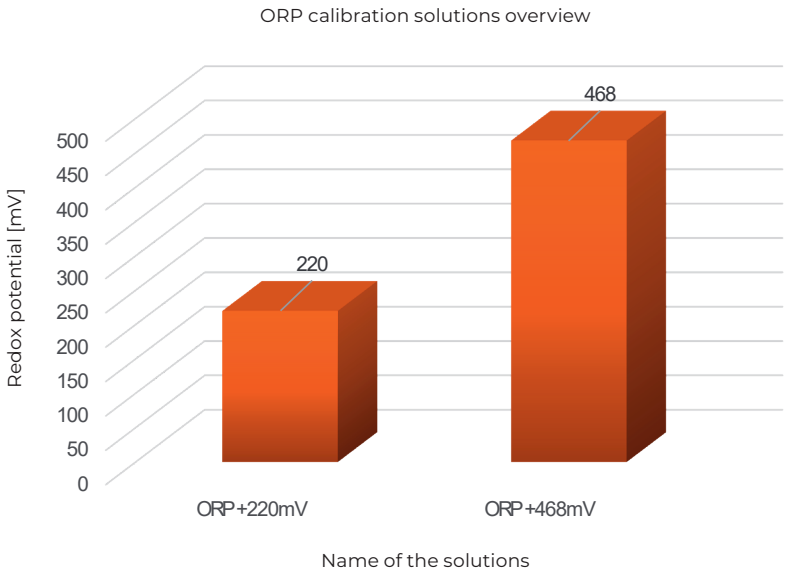
e. Tap on *"Save calibration"*.

Calibration – ORP electrode

Notes:

- Only a 1-point calibration is available for ORP electrodes.
- Use calibration solutions that are as close as possible to your expected measurement result to maximise the precision of the measurement.
  The following calibrating solutions are available in our range for this:

  - ORP +220 mV
  - ORP +468 mV



Calibration – ORP electrode

1. Connect the ProbeBOX 1.0 with the PrimeLab 2.0 or your Android® Smartphone via the USB Type-C cable.
2. Connect an ORP electrode to the ProbeBOX 1.0 via the plug.
3. Tap on the *"ProbeBOX 1.0"* symbol in the PrimeLab 2.0 main menu, or tap on *"Connect to ProbeBOX"* under the USB tab in the LabCOM® app.
4. Tap on *"Calibrate"* on the PrimeLab 2.0, or tap on *"New Calibration"* in the LabCOM® app. (**Note:** A calibration is only available when the ProbeBOX 1.0 and the electrode have been recognised correctly.)
5. Select a calibration solution from the drop-down menu that is as close as possible to the expected value.
6. Rinse the electrode with distilled water and immerse it in the calibration solution. Ensure that the electrode tip is completely immersed in the calibration solution and stir it several times to remove any air bubbles that may be adhering to the electrode tip.
7. Tap on *"Set reference"*.

   The device in now calibrating.
   Wait until the display changes from *"Calibrating..."* to *"Done"*.
   Depending on the temperature, this may take up to 1 minute.
8. Tap on *"Save calibration"*.

Calibration – EC electrode

Note:

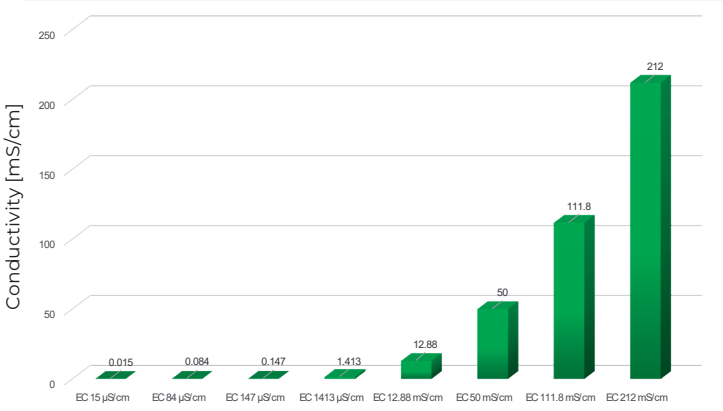
- When using a PrimeLab 2.0 a calibration **must** be carried out before each measurement.
- When using an Android® smartphone a calibration **must not** be carried out before each measurement but is recommended.
- When calibrating on an Android® smartphone, there is no 3 point calibration available.
- Use calibration solutions that are as close as possible to your expected measurement result to maximise the precision of the measurement.
  The following calibrating solutions are available in our range for this:

EC calibration solutions (K=0.1):
- EC 15 µS/cm
- EC 84 µS/cm
- EC 147 µS/cm

EC calibration solutions (K=1):
- EC 1413 µS/cm
- EC 12.88 mS/cm
- EC 50 mS/cm
- EC 111.8 mS/cm

EC calibration solutions (K=10):
- EC 50 mS/cm
- EC 111.8 mS/cm
- EC 212 mS/cm

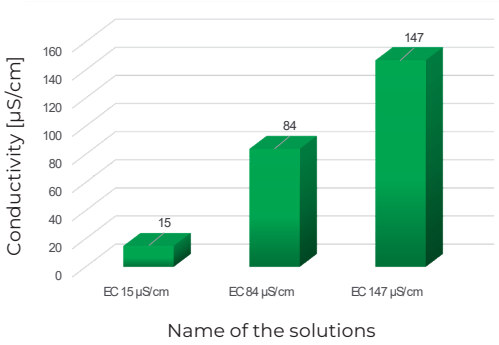
EC calibration solutions overview



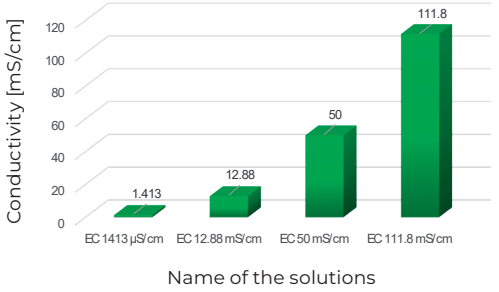
Name of the solutions

Calibration – EC electrode

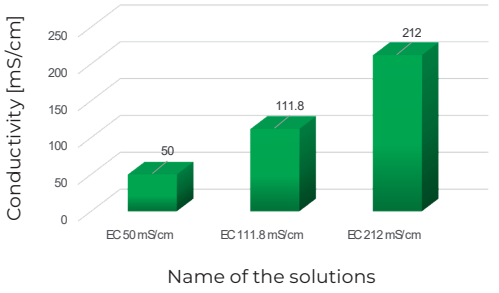
EC calibration solutions overview for K = 0.1



EC calibration solutions overview for K = 1



EC calibration solutions overview for K = 10



Calibration – EC electrode

1. Connect the ProbeBOX 1.0 with the PrimeLab 2.0 or your Android® Smartphone via the USB Type-C cable.
2. Connect a EC electrode to the ProbeBOX 1.0 via the plug.
3. Tap on the *"ProbeBOX 1.0"* symbol in the PrimeLab 2.0 main menu, or tap on *"Connect to ProbeBOX"* under the USB tab in the LabCOM® app.
4. Tap on *"Calibrate"* on the PrimeLab 2.0, or tap on *"New Calibration"* in the LabCOM® app. (**Note:** A calibration is only available when the ProbeBOX 1.0 and the electrode have been recognised correctly.)
5. Select your prefered methode **(1-point / 2-point / 3-point calibration)**.

   Important: If you choose a 2-point or 3-point calibration, clean the electrode after each calibration step by rinsing it with destilled water. Otherwise the calibration might be incorrect.
6. Proceed with the instructions for your selected methode the following pages.

1-point calibration:

a. Select a suitable calibration solution from the drop-down menu, depending on the cell constant (0.1 / 1 / 10), whose value is as close as possible to the expected value.

b. Rinse the electrode with distilled water and immerse it in the calibration solution. Ensure that the electrode tip is completely immersed in the calibration solution and stir it several times to remove any air bubbles that may be adhering to the electrode tip.

c. Tap on *"Set reference"*.

   The device in now calibrating.
   Wait until the display changes from *"Calibrating..."* to *"Done"*.
   Depending on the temperature, this may take up to 1 minute.

d. Tap on *"Save calibration"*.

Calibration – EC electrode

2-point calibration:

a. Select a suitable calibration solution from the drop-down menu, depending on the cell constant (0.1 / 1 / 10), whose value is as close as possible to the expected value.

b. Rinse the electrode with distilled water and immerse it in the calibration solution. Ensure that the electrode tip is completely immersed in the calibration solution and stir it several times to remove any air bubbles that may be adhering to the electrode tip.

c. Tap on *"Set reference"*.

The device in now calibrating.
Wait until the display changes from *"Calibrating..."* to *"Done"*.
Depending on the temperature, this may take up to 1 minute.

d. Repeat steps a. – c. and this time select a calibration solution for high or low conductivity, depending on the expected measurement result.

e. Tap on *"Save calibration"*.

3-point calibration:

a. Select a suitable calibration solution from the drop-down menu, depending on the cell constant (0.1 / 1 / 10), whose value is as close as possible to the expected value.

b. Rinse the electrode with distilled water and immerse it in the calibration solution. Ensure that the electrode tip is completely immersed in the calibration solution and stir it several times to remove any air bubbles that may be adhering to the electrode tip.

c. Tap on *"Set reference 1"*.

The device in now calibrating.
Wait until the display changes from *"Calibrating..."* to *"Done"*.
Depending on the temperature, this may take up to 1 minute.

d. Repeat steps a. – c. twice and select a calibration solution for high conductivity for the first repetition and a calibration solution for low conductivity for the second repetition.

e. Tap on "Save calibration".

Performing a measurement

1. Connect the ProbeBOX 1.0 with the PrimeLab 2.0 or your Android® Smartphone via the USB Type-C cable.
2. Connect a EC electrode to the ProbeBOX 1.0 via the plug.
3. Tap on the *"ProbeBOX 1.0"* symbol in the PrimeLab 2.0 main menu, or tap on *"Connect to ProbeBOX"* under the USB tab in the LabCOM® app.
4. Make sure that the electrode tip is completely covered with measuring water. Stir the electrode tip several times to remove any air bubbles that may be adhering to the electrode tip.
5. Tap on *"Start measurement"*
   (If this option is not available, you must carry out a calibration first – see page 6).
6. The device starts the measurement automatically. The result is shown in the circle that appears in the centre of the display.
7. Wait until the value shown on the display no longer changes.
   (Depending on the temperature and electrode, this may take up to 1 minute).
8. Tap on *"Hold"*.
9. If you want to continue the measurement, tap on *"Repeat"*. Tap on "Save" to save the measurement result.
10. A pop-up window appears in which you can compare the result with an associated measurement source.
    Tap on the PrimeLab 2.0 display outside the pop-up window or on the *"Cancel"* field in the LabCOM® app to cancel the process.
    Tap on *"Save"* if you want to save your data accordingly.

Notes – pH electrode

Condition of the electrode:

Check whether the electrode has been stored wet or dry.
If the electrode has dried out, soak the electrode in tap water or 3M KCl solution for at least 24 h before taking measurements.

Calibration interval:

For routine measurements, calibration should be carried out weekly.
For measurements with maximum accuracy, calibration directly before each measurement is recommended.
If the temperature of the water sample deviates by more than 5 °C from the temperature of the reference solution used during the last calibration, a new calibration is recommended.
If the pH electrode is used in strongly acidic (pH < 2) or strongly basic (pH > 12) solutions, more frequent calibration is recommended.

Storage:

pH electrodes must be stored ''wet'' in 3M KCl solution if they are not used for a longer period of time.
pH electrodes should never be stored in distilled water!

Cleaning:

If pH electrodes are used in heavily contaminated water samples, the glass bulb and the connection points of the electrode must be cleaned after the measurement. To do this, immerse the pH electrode in a suitable cleaning solution for 1 hour.

Notes – pH electrode

Refilling pH electrodes:

Refillable pH electrodes can be refilled with fresh 3M KCl solution
(not required for all gel-filled pH electrodes).

Refilling procedure:
Regularly check the electrolyte level of the refillable pH electrode.
The electrolyte level of the refillable pH electrode should never be more than 1 cm below the filling opening. Otherwise, incorrect measurements may occur (does not apply to gel-filled electrodes).
If the electrolyte level is too low or the electrolyte is contaminated, open the filler opening and top up the electrode sufficiently with the 3M KCl solution supplied.
Immerse refilled pH electrodes in a 3M KCl solution for 1 h or overnight.
Hold the pH electrode in a vertical position during the relaxation time.
Carry out a calibration after you have changed the liquid electrolyte.

Notes – ORP electrode

Condition of the electrode:

Check whether the electrode has been stored wet or dry.
If the electrode has been stored dry, immerse it in a suitable cleaning solution for 1 h.
If the electrode has been used for a longer period of time, the platinum surface will become dirty, resulting in inaccurate measurements and a slower response. Immerse the ORP electrode in a suitable cleaning solution for 30 minutes. Then rinse the electrode with distilled water and immerse it in a 3M KCl solution for 6 hours.

Calibration interval:

ORP probes do not need to be calibrated. If you are not sure about the quality or the measured value of the ORP probe, use the Water-i.d.® ORP +468mV standard solution "EMORPbuf468" to check whether the ORP electrode is still in perfect condition.

Storage:

ORP electrodes must be stored ''wet'' in 3M KCl solution if they are not used for a longer period of time.
Never store ORP electrodes in distilled water!

Cleaning:

If ORP electrodes are used in heavily contaminated samples, the glass bulb and the connection points of the electrode must be cleaned afterwards. Immerse the ORP electrode in a suitable cleaning solution for 1 hour.

Notes – EC electrode

Calibration interval:

For routine measurements, calibration should be carried out monthly. If the sample temperature deviates significantly from the reference temperature (25 °C) or if high measurement accuracy is required, calibration should be carried out once a week.

Temperature compensation / coefficient:

The default setting of the PrimeLab 2.0 for the reference temperature is 25 °C. The temperature compensation coefficient of the PrimeLab 2.0 is set to 2.0 %/°C by default, as this is valid for most aqueous solutions. The conductivity temperature coefficient can be different for different solutions and concentrations. In the table you will find the temperature compensation coefficient that can be set in PrimeLab 2.0 for some special solutions.

On the measurement screen, you will find a drop-down menu in which you can select the desired value:

Temperature compensation for special solutions	Temperature compensation coefficient
No compensation	0.00 %/°C
Standard	2.00 %/°C
NaCl solution	2.12 %/°C
5% NaOH solution	1.72 %/°C
Diluted ammonia solution	1.88 %/°C
10% hydrochloric acid solution	1.32 %/°C
5% sulphuric acid solution	0.96 %/°C

EC-TDS conversion:

EC measured values can be converted to TDS measured values by clicking the *"EC"* or *"TDS"* button on the measurement screen. You can also define the conversion factor yourself. Values between 0.40 and 1.00 can be selected, the default value is 0.5. The measured value is saved under the selected unit (EC or TDS).

Electrode overview

ProbeBOX electrodes are manufactured specifically for the ProbeBOX 1.0 and contain a controller in the BNC connector for easy identification by the PrimeLab 2.0 or the LabCOM® app and software.
This means that it is not possible to connect third-party electrodes.

Individual electrodes for the ProbeBOX 1.0

Product code	Product name	Measuring ranges	Temperature range	R_{25} NTC**
PL2Sp-ElpHPCATC	WID pH Lab/Field 312-1	pH 0 – 14	0 – 80 °C	30 kΩ
PL2Sp-ElpHGLATC	WID pH Lab/Field 822-1	pH 0 – 14	0 – 80 °C	30 kΩ
PL2Sp-ElpHGLrefATC	WID pH Lab 324-1	pH 0 – 14	0 – 100 °C	30 kΩ
PL2Sp-ElORPPCATC	WID ORP Lab/Field 422-1	±2000 mV	0– 80 °C	--
PL2Sp-ElECLRGL	WID CON 361-01-1	**K = 0.1** 0 – 200 µS/cm 0 – 100 mg/l (0 – 100 ppm)*	0 – 80 °C	30 kΩ
PL2Sp-ElECHRGLATC	WID CON 351-1-1	**K = 1.0** 0 – 200 mS/cm 0 – 100 g/l (0 – 100 ppt)*	0 – 80 °C	30 kΩ
PL2Sp-ElECLRPCATC	WID CON 341-1-1	**K = 1.0** 0 – 200 mS/cm 0 – 100 g/l (0 – 100 ppt)*	0 – 50 °C	30 kΩ
PL2Sp-ElECHRPCATC	WID CON 341-10-1	**K = 10** 20 – 2000 mS/cm 10 – 1000 g/l (10 – 1000 ppt)*	0 – 50 °C	30 kΩ

*If the TDS conversion factor in PrimeLab 2.0 is set to the default value of 0.5.

**Our electrodes measure the temperature using a thermistor (NTC), whose electrical resistance decreases with increasing temperature. The specified R_{25} value of 30 kΩ (at 25 °C) means high measurement accuracy in low temperature ranges and is optimally selected for the intended application.

ProbeBOX Kits

ProbeBOX 1.0 Electrode-Basic-Kit "pH"

Parameter:	pH
Measuring range:	0 – 14
Resolution:	0.01
Temperature range:	0 – 80 °C ATC

Product code	Description
PL2Sp-ElpHPCATC-Kit	1 x Grey carrying case with foam insert 1 x "PL2Sp-ElpHPCATC" Plastic Body pH Electrode. Designed for general water solutions' pH measurement in scientific research, environmental monitoring, and quality control. Ideal for both lab and in-field use. (Not suitable for solutions with pH > 12, corrosive solutions, or constant testing at temperatures of > 60 °C). Non refillable. 1 x "Pl2Sp-Pbox" A/D-Switch-Box with BNC-IN and USB Typ-C-OUT to connect a pH-probe to the PrimeLab 2.0 Photometer or an Android® smartphone. 1 x "PL2Sp-KCl3mol-10" dropper bottle with 10 ml KCl-electrode soaking solution.
EMPHbuf400-20 EMPHbuf700-20 EMPHbuf1000-20	1 x 20 ml "pH 4.00" calibration solution 1 x 20 ml "pH 7.00" calibration solution 1 x 20 ml "pH 10.01" calibration solution
PL2Sp-PboxCable --	1 x USB cable for the ProbeBOX 1.0. 1 metre. Type-C / Type-C. 1 x User manual

ProbeBOX Kits

ProbeBOX 1.0 Electrode-Basic-Kit "pH-Glass Electrode"

Parameter:	pH
Measuring range:	0 – 14
Resolution:	0.01
Temperature range:	0 – 80 °C ATC

Product code	Description
PL2Sp-ElpHGLATC-Kit	1 x Grey carrying case with foam insert 1 x "PL2Sp-ElpHGLATC" Routine Sealed Glass Body pH-Electrode. Designed for general water solutions' pH measurement in scientific research, environmental monitoring, and quality control. Ideal for both lab and in-field use. (Not suitable for solutions pH > 12, corrosive solutions, or constant testing at temperatures > 60 °C). Non refillable. 1 x "Pl2Sp-Pbox" A/D-Switch-Box with BNC-IN and USB Typ-C-OUT to connect a pH-probe to the PrimeLab 2.0 Photometer or an Android® smartphone. 1 x "PL2Sp-KCl3mol-10" dropper bottle with 10 ml KCl-electrode soaking solution.
EMPHbuf400-20 EMPHbuf700-20 EMPHbuf1000-20	1 x 20 ml "pH 4.00" calibration solution 1 x 20 ml "pH 7.00" calibration solution 1 x 20 ml "pH 10.01" calibration solution
PL2Sp-PboxCable --	1 x USB cable for the ProbeBOX 1.0. 1 metre. Type-C / Type-C. 1 x User manual

ProbeBOX Kits

ProbeBOX 1.0 Electrode-Kit "refillable pH-Glass Electrode"

Parameter:	pH
Measuring range:	0 – 14
Resolution:	0.01
Temperature range:	0 – 100 °C ATC

Product code	Description
PL2Sp-ElpHGLrefATC-Kit	1 x Grey carrying case with foam insert 1 x "PL2Sp-ElpHGLrefATC" Refillable Glass pH-Electrode. Designed for general water solutions TRIS Buffer compatible. Suitable applications: hydroponics, pools and spas, environmental monitoring, aquaculture, aquariums, education, general purpose labtest, body fluid, TRIS Buffer, beverage, wine, beer, salt water, high temperature solutions (up to 100 °C). 1 x "Pl2Sp-Pbox" A/D-Switch-Box with BNC-IN and USB Typ-C-OUT to connect a pH-probe to the PrimeLab 2.0 Photometer or an Android® smartphone. 1 x "PL2Sp-KCl3mol-10" dropper bottle with 10 ml KCl-electrode soaking solution.
EMPHbuf400-20 EMPHbuf700-20 EMPHbuf1000-20	1 x 20 ml "pH 4.00" calibration solution 1 x 20 ml "pH 7.00" calibration solution 1 x 20 ml "pH 10.01" calibration solution
PL2Sp-PboxCable --	1 x USB cable for the ProbeBOX 1.0. 1 metre. Type-C / Type-C. 1 x User manual

ProbeBOX Kits

ProbeBOX 1.0 Electrode-Basic-Kit "ORP"

Parameter:	ORP
Measuring range:	±2000 mV
Resolution:	1 mV
Temperature range:	0 – 80 °C

Product code	Description
PL2Sp-ElORPPCATC-Kit	1 x Grey carrying case with foam insert 1 x "PL2Sp-ElORPPCATC" Plastic Body ORP Electrode for faster respond. The gel inner reference solution does not need to be refilled. This electrode is designed for testing in general water solutions both in-lab or in-field. Comes with Φ 0.8×3 mm platinum disc. Non refillable. 1 x "Pl2Sp-Pbox" A/D-Switch-Box with BNC-IN and USB Typ-C-OUT to connect an ORP-probe to the PrimeLab 2.0 Photometer or an Android® smartphone. 1 x "PL2Sp-KCl3mol-10" dropper bottle with 10 ml KCl-electrode soaking solution.
EMORPbuf220-20	1 x 20 ml "ORP +220 mV" calibration solution
PL2Sp-PboxCable --	1 x USB cable for the ProbeBOX 1.0. 1 metre. Type-C / Type-C. 1 x User manual

ProbeBOX Kits

ProbeBOX 1.0 Electrode-Basic-Kit "EC"

Parameter:	EC/TDS
Measuring range:	0 – 200 mS/cm; 0 – 100 g/l (0 – 100 ppt)*
Resolution:	1 µS/cm
Temperature range:	0 – 50 °C ATC

*If the TDS conversion factor is set to the default value of 0.5.

Product code	Description
PL2Sp-EIECLRPCATC-Kit	1 x Grey carrying case with foam insert 1 x "PL2Sp-EIECLRPCATC" Plastic Body – Conductivity Electrode **(K = 1.0)**. Designed for high-accuracy in a wide range of conductivity measurement (0 – 200 mS/cm). 1 x "PI2Sp-Pbox" A/D-Switch-Box with BNC-IN and USB Typ-C-OUT to connect an EC-probe to the PrimeLab 2.0 Photometer or an Android® smartphone. 1 x "PL2Sp-KCl3mol-10" dropper bottle with 10 ml KCl-electrode soaking solution.
EMECbuf1118-50	1 x 50 ml "EC 111.8 mS/cm" calibration solution
PL2Sp-PboxCable --	1 x USB cable for the ProbeBOX 1.0. 1 metre. Type-C / Type-C. 1 x User manual

ProbeBOX Kits

ProbeBOX 1.0 Electrode-Kit "Purified Water EC Probe"

Parameter:	EC/TDS
Measuring range:	0 – 200 µS/cm
	0 – 100 mg/l (0 – 100 ppm)*
Resolution:	1 µS/cm
Temperature range:	0 – 50 °C ATC

*If the TDS conversion factor is set to the default value of 0.5.

Product code	Description
PL2Sp-EIECLRGL-Kit	1 x Grey carrying case with foam insert 1 x "PL2Sp-EIECLRGL" Glass Body – Pure Water Conductivity Electrode **(K = 0.1)**. Conductivity Electrode is designed for purified water and ultra-pure water conductivity measurements. Electrode size: 7×18 mm platinum. 1 x "PI2Sp-Pbox" A/D-Switch-Box with BNC-IN and USB Typ-C-OUT to connect an EC-probe to the PrimeLab 2.0 Photometer or an Android® smartphone. 1 x "PL2Sp-KCl3mol-10" dropper bottle with 10 ml KCl-electrode soaking solution.
EMECbuf84-250	1 x 250 ml "EC 84 µS/cm" calibration solution
PL2Sp-PboxCable --	1 x USB cable for the ProbeBOX 1.0. 1 metre. Type-C / Type-C. 1 x User manual

ProbeBOX Kits

ProbeBOX 1.0 Electrode-Kit "Glass EC Probe"

Parameter:	EC/TDS
Measuring range:	0 – 200 mS/cm
	0 – 100 g/l (0 – 100 ppt)*
Resolution:	1 µS/cm
Temperature range:	0 – 50 °C ATC

*If the TDS conversion factor is set to the default value of 0.5.

Product code	Description
PL2Sp-ElECHRGLATC-Kit	1 x Grey carrying case with foam insert 1 x "PL2Sp-ElECHRGLATC" Glass Body – Conductivity Electrode **(K = 1.0)**. Designed for high-accuracy laboratory conductivity measurements. Its cavity structure and platinum chip sensor design enhance the accuracy and stability of conductivity measurement in the range of 0 to 200 mS/cm. The glass body is resistant to all kinds of general chemical corrosion. Electrode size: 5×7 mm platinum plate / 2 pole. 1 x "Pl2Sp-Pbox" A/D-Switch-Box with BNC-IN and USB Typ-C-OUT to connect an EC-probe to the PrimeLab 2.0 Photometer or an Android® smartphone. 1 x "PL2Sp-KCl3mol-10" dropper bottle with 10 ml KCl-electrode soaking solution.
EMECbuf1118-50	1 x 50 ml "EC 111.8 mS/cm" calibration solution
PL2Sp-PboxCable --	1 x USB cable for the ProbeBOX 1.0. 1 metre. Type-C / Type-C. 1 x User manual

ProbeBOX Kits

ProbeBOX 1.0 Electrode-Kit "High Range EC Probe"

Parameter:	EC/TDS
Measuring range:	20 – 2000 mS/cm 10 – 1000 g/l (10 – 1000 ppt)*
Resolution:	1 µS/cm
Temperature range:	0 – 50 °C ATC

*If the TDS conversion factor is set to the default value of 0.5.

Product code	Description
PL2Sp-EIECHRPCATC-Kit	1 x Grey carrying case with foam insert 1 x "PL2Sp-EIECHRPCATC" Plastic Body – Conductivity Electrode **(K = 10)**. Designed for high-range conductivity measurement. Electrode size: 5×5 mm platinum ring / 2 pole. 1 x "PI2Sp-Pbox" A/D-Switch-Box with BNC-IN and USB Typ-C-OUT to connect an EC-probe to the PrimeLab 2.0 Photometer or an Android® smartphone. 1 x "PL2Sp-KCl3mol-10" dropper bottle with 10 ml KCl-electrode soaking solution.
EMECbuf212-50	1 x 50 ml "EC 212 mS/cm" calibration solution
PL2Sp-PboxCable --	1 x USB cable for the ProbeBOX 1.0. 1 metre. Type-C / Type-C. 1 x User manual

Calibration/electrode solutions

Calibration solutions

Product code*	Description	20 ml	50 ml	100 ml	250 ml	500 ml	1 l	3 l	10 l
EMPHbuf168	pH 1.68		•	•	•	•	•	•	•
EMPHbuf200	pH 2.00		•	•	•	•	•	•	•
EMPHbuf300	pH 3.00		•	•	•	•	•	•	•
EMPHbuf400	pH 4.00	•	•	•	•	•	•	•	•
EMPHbuf600	pH 6.00		•	•	•	•	•	•	•
EMPHbuf700	pH 7.00	•	•	•	•	•	•	•	•
EMPHbuf800	pH 8.00		•	•	•	•	•	•	•
EMPHbuf900	pH 9.00		•	•	•	•	•	•	•
EMPHbuf1000	pH 10.01	•	•	•	•	•	•	•	•
EMPHbuf110	pH 11.00		•	•	•	•	•	•	•
EMPHbuf120	pH 12.00		•	•	•	•	•	•	•
EMPHbuf130	pH 13.00		•	•	•	•	•	•	•
EMORPbuf220	ORP +220 mV				•				
EMORPbuf468	ORP +468 mV	•	•	•	•	•	•	•	•
EMECbuf15	EC 15 µS/cm				•				
EMECbuf84	EC 84 µS/cm				•				
EMECbuf147	EC 147 µS/cm				•				
EMECbuf1413	EC 1413 µS/cm	•	•	•	•	•	•	•	•
EMECbuf1288	EC 12.88 mS/cm (KCl 0.1 mol/l)	•	•	•	•	•	•	•	•
EMECbuf50	EC 50 mS/cm		•	•	•	•	•	•	•
EMECbuf1118	EC 111.8 mS/cm		•	•	•	•	•	•	•
EMECbuf212	EC 212 mS/cm		•	•	•	•	•	•	•

*The item-code varies, depending on the volume (e.g. 20 ml of pH 7.00 calibration solution = EMPHbuf700-20)

Electrode solutions

Product code*	Description	20 ml	50 ml	100 ml	250 ml	500 ml	1 l	3 l	10 l
EMKCL3Mbuf	Electrolyte solution "KCl 3 mol/l"	•	•	•	•	•	•	•	•

*The item-code varies, depending on the volume (e.g. 20 ml of KCl 3 mol/l electrolyte solution = EMKCL3Mbuf-20)

Accessories

Product code	Decription
Pl2Sp-Pbox	**ProbeBOX 1.0 (Device)** A/D switch box with BNC IN and USB Type-C OUT for connecting all electronic probes to PrimeLab 2.0 and/or LabCOM® app. (Included in all kits)
PL2Sp-Probe-Holder	**ProbeBOX 1.0 Electrode holder** For 3 electrodes (16 mm), with cable duct. Additional opening for temperature sensor. Three joints for high flexibility and adjustment options.
PL2Sp-Probe-Stirrer	**Magnetic stirrer** For mixing quantities of up to 1 litre. Stepless adjustable speed from 0 - 2500 rpm. White cover plate for observing colour reactions. 110/220 V power supply unit with plugs for EU/CH/UK/USA.
PL2Sp-PboxCable	**USB cable for the ProbeBOX 1.0** 1 metre long with USB-C connection.

Technical data

Dimensions	104 mm × 60 mm × 29.2 mm
Weight	167 g
Operating temperature	5 – 45 °C
Input and output voltage	5 V
IP protection class	IPX5 (Protected against water jets)

Developed in Germany and Turkey, assembled in China.

Certifications

RoHS Declaration of Conformity / Safety Instrucions

RoHS Declaration of Conformity
"Directive 2011/65/EU (the RoHS Directive) OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment" superseding "Directive 2002/95/EC (the RoHS Directive) OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003. The Certificate of Compliance includes Directive 2015/863 published in 2015 by the EU (often referred as RoHS 3) and Directive 2017/2102/EU published by the EU November 17, 2015.

Based on the information provided by our supply lines, and our certain knowledge pertaining to our own processes, products supplied by Water-i.d.® GmbH are RoHS compliant for orders placed on or after the January 1, 2006. Products supplied on or after January 3, 2013 are also RoHS compliant according the Directive 2011/65/EU, Directive 2015/863 and Directive 2017/2102/EU from the moment the respected directive came into force.

The confirmation of compliance status by our supply lines is granted for products which do not contain any of the restricted substances referred to in Annex VI in the RoHS Directive 2011/65/EU & Directive 2015/863 with a higher than maximum concentration values tolerated by weight in homogeneous materials.

Water-i.d.® GmbH has taken all reasonable steps to verify the supply line information regarding the absence of restricted substances.

Safety Instructions
This equipment is not suitable for use in areas where children may be present.
Cet équipment ne convient pas à une utilisation dans des lieux susceptibles d'accueillir des enfants.

CAUTION:
Battery abuse or mishandling can cause overheat, liquid leakage, or an explosion. To avoid possible injury, do the following:
· Install batteries according to the battery model and polarity information in the battery compartment.
· Do not disassemble, or service any battery.
· Do not crush or puncture the battery.
· Do not short-circuit the battery, or expose it to water or other liquids.

ATTENTION:
L'abus ou la mauvaise manipulation de la batterie peut provoquer une surchauffe, une fuite de liquide ou une explosion. Pour éviter tout risque de blessure, procédez comme suit:
· Installez les piles conformément au modèle de pile et aux informations sur la polarité figurant dans le compartiment à piles.
· Ne démontez pas et ne réparez pas les piles.
· N'écrasez pas et ne percez pas la batterie.
· Ne court-circuitez pas la batterie et ne l'exposez pas à l'eau ou à d'autres liquides.

Certifications

CE compliance statement (EG/EU/ECC)

According to directive 2014/30/EU of the European Parliament and European Council of February 26, 2014.

The contracted manufacturer

EDA
No.6, Maan 2nd Road
Chashan Town, Dongguan City, Duanddong Province,
China

herewith declares as follows:

The product "ProbeBOX 1.0" complies with the requirements of the following standards for:

Electro-Magnetic-Compatibility (EMC) standards for radio equipment and services:
EN 55032:2015/A11:2020
EN 55035:2017/A11:2020

Safety standard:
EN IEC 62368-1:2020+A11:2020

Hereby, Water-i.d.® GmbH, Daimlerstr. 20, D-76344 Eggenstein-Leopoldshafen, Germany, declares that this device is in compliance with essential requirements and other relevant provisions of Directive 2014/30/EU and the Radio Equipment Regulations 2017 (S.I. 2017/1206).
A copy of the Declaration of conformity can be downloaded from www.poollab.org

Certifications

UKCA Conformity Assessment

We, Water-i.d.® GmbH Germany, hereby certify our responsibility, that the product ProbeBOX 1.0 is tested to and conforms with the essential test suites included in the following standards, which are in force within the EEA:

Standards	**Legislation Number**
BS EN 55032:2015+A11:2020 BS EN 55035:2017+A11:2020	Regulations 2016 (S.I. 2016/1091)
BS EN IEC 62368-1:2020+A11:2020	Regulations 2016 (S.I. 2016/1101)
BS EN 62321-3-1:2014 BS EN 62321-4:2014+A1:2017 BS EN 62321-5:2014 BS EN 62321-6:2015 BS EN 62321-7-1:2015 BS EN 62321-7-2:2017 BS EN 62321-8:2017	Regulations 2012 (S.I. 2016/3032)

And therefore complies with the essential requirements of the following directives:

Legislation Name	**Legislation Number**	**Further identification**
Electromagnetic Compatibility Regulations	Regulations 2016 (S.I. 2016/1091)	Electromagnetic Compatibility (EMC)
Electrical Equipment (Safety) Regulations	Regulations 2016 (S.I. 2016/1101)	Safety
Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations Regulations 2012	RoHS (S.I. 2012/3032)	

The technical documentation as required by the conformity assessment procedure is kept at the following address for a period ending at least 10 years after the last product has been manufactured at the disposal of the relevant national authorities of any Member State for inspection:

Water-i.d.® GmbH (Germany)
Daimlerstr. 20 · D-76344 Eggenstein-Leopoldshafen · Germany

The product is UKCA-marked in:

Certifications

FCC Part 15 Compliance Statement / ICES

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s).Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la partie 15 des règles de la FCC et aux normes RSS exemptées de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes:

(1) Cet appareil ne doit pas causer d'interférences nuisibles, et
(2) cet appareil doit accepter toute interférence reçue, y compris les interferences pouvant entraîner un fonctionnement indés.

This device corresponds to CAN ICES-003(B) / NMB-003(B)

Disposal

Disposal instructions according to
EU Directive of the European Parliament and of the Council: 2012/19/EU

Information on environmental protection
Raw materials had to be extracted and processed for the manufacture of your device.
The product may therefore contain hazardous substances that have a negative impact on the environment if the appliance is not disposed of properly.

Information on disposal and recycling
The crossed-out wheeled garbage can symbol on your product, battery, documentation or packaging reminds you that all electronic products and batteries must be taken to separate collection at the end of their life and must not be disposed of with household waste. It is the user's responsibility to dispose of the equipment at a designated collection point or service for the separate recycling of waste electrical and electronic equipment (WEEE) and batteries in accordance with local legislation. Proper collection and recycling of your equipment will help to ensure that waste electrical and electronic equipment (WEEE) is recycled in a way that conserves valuable materials and protects human health and the environment. For more information on where and how to dispose of your WEEE, please contact your local authority, retailer or waste disposal company.

Device
In accordance with EC Directive 2002/96/EC, electronic devices may not be disposed of with normal household waste. The manufacturer of this device,
Water-i.d.® GmbH, Daimlerstr. 20, D-76344 Eggenstein-Leopoldshafen,
will dispose of your ProbeBOX 1.0 free of charge (excluding the cost of shipping the device to us). Send your ProbeBOX 1.0 for disposal - carriage paid - to the above address.

Water-i.d.® GmbH
Daimlerstrasse 20
D-76344 Eggenstein-Leopoldshafen
Germany

Warranty

Note on the statutory warranty:
Please note that membranes installed in electrodes are considered wearing parts. This special component is not replaceable and is subject to unavoidable natural wear and tear, even with proper use and handling. For these reasons, the statutory warranty in the country in which the dealer concluding the purchase contract with the end user is based does not necessarily cover such electrodes in full, but only for a maximum of the first 6 months after handover to the end customer.

Manufacturer's Warranty
Water-i.d.® GmbH grants a 24-month manufacturer's warranty on this product (six months on electrodes). The manufacturer's warranty begins from the date of first purchase by the first end customer (invoice date). The manufacturer's warranty covers the fault-free function of the device. If, during the manufacturer's warranty period, the product is found to be defective due to manufacturing or processing faults, Water-i.d. GmbH will repair or (at its discretion) replace the product or the defective part free of charge. Excluded from the manufacturer's warranty are in particular damages caused by improper use, disregard of the operating instructions, unauthorized repairs and modifications as well as wear and tear. In addition, batteries are not covered by the manufacturer's warranty.

Declaration of Conformity

We hereby certify that the device

ProbeBOX 1.0

with it's serial number as stated below,
has passed intensive visual and techincal checks
as part of our QM documentation. We confirm
the device got factory-calibrated.

Water-i.d.® GmbH (Germany)

Andreas Hock, Managing Director
Water-i.d.® GmbH | Daimlerstr. 20
D-76344 Eggenstein-Leopoldshafen | Germany

S/N
Manufacturing date

Water-i.d.® is certified according to ISO 9001:2015