



Probe cables length:  
2 metres / 6.6 feet

## Contents page

---

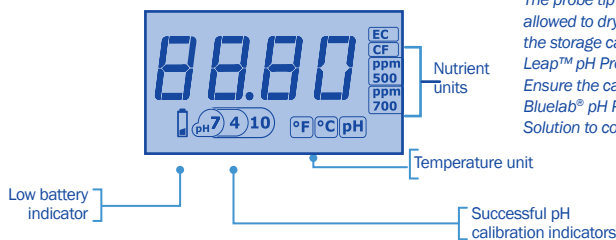
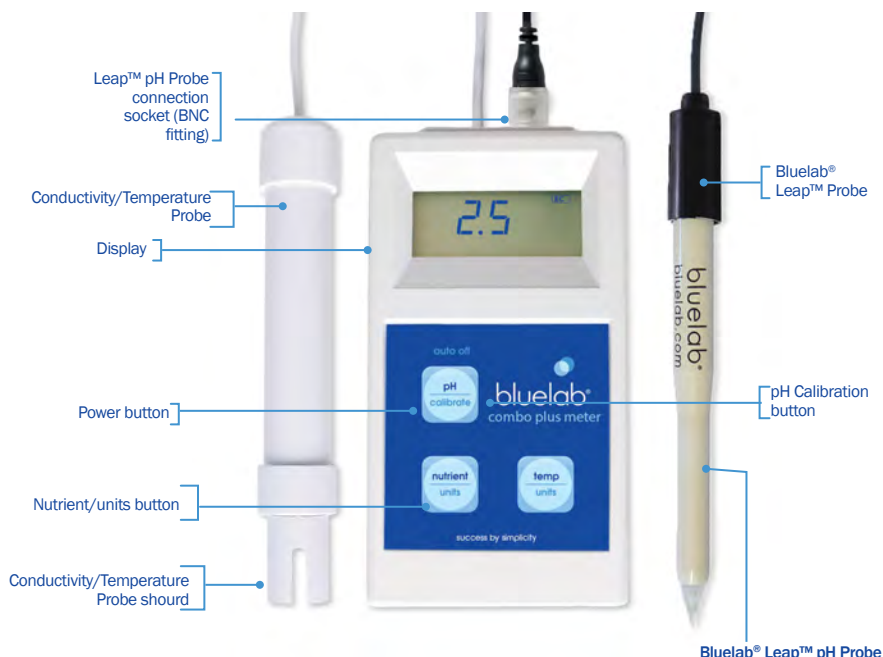
Features	2
Bluelab® Combo Meter Plus	2
Introduction	3
Preparing for use	3
Calibration	4
Changing nutrient and temperature display units	6
Measuring elements in solution	7
Measuring the pH value in media	8
Measuring soil solution pH value	8
Information about measuring the pH of soils/media	9
Cleaning the conductivity/temperature probe	11
Hydrating the Leap™ pH Probe	12
Storing the Bluelab® Combo Meter Plus	12
Cleaning the Bluelab Leap™ pH Probe	13
Battery replacement	13
Error messages	14
Technical specifications	14
Troubleshooting guide	15
Bluelab® Leap™ pH Probe replacement	16
Bluelab® Leap™ pH Probe Care	16
Bluelab® limited warranty	17
Contact details	18

## Features

Measures pH, conductivity / nutrient (EC, CF, ppm 500 and ppm 700) and temperature (°C, °F) in nutrition solution and pH in medias

Lightweight and portable	Toughened spear tip for direct root-zone measurement
Large easy to read display	Over range and under range indicators
Simple push button pH calibration	Low battery indicator- Auto off function
Successful pH calibration indicator	2 x AAA alkaline batteries included
No calibration required for conductivity or temperature	Multimedia friendly, for measurement across a range of environments

# Bluelab® Combo Meter Plus



The probe tip must not be allowed to dry out. Always place the storage cap back onto the Leap™ pH Probe after each use. Ensure the cap contains enough Bluelab® pH Probe KCl Storage Solution to cover the probe tip.



**Keep your pH probe tip wet**  
at all times to avoid permanent damage



# 1.0 Introduction

The Bluelab® Combo Meter Plus has two press buttons; 'calibrate' and power. The power button requires a short press; release in less than a second. The 'calibrate' button requires a long press; hold for at least three seconds and release when the display starts flashing.

## Turning the Bluelab® Combo Meter Plus on and off

- 1 A short press of the power button will turn the Bluelab® Combo Meter Plus on. The Bluelab® Combo Meter Plus automatically turns off after approximately four minutes if no buttons are pressed. If the Bluelab® Combo Meter Plus turns off before the reading is taken, short press the power button to turn the meter on again.

# 2.0 Preparing for use

The following tasks must be performed before the Bluelab® Combo Meter Plus and Bluelab® Leap™ Probe are used for the first time.

**IMPORTANT:** The Bluelab® Leap™ pH Probe must be preconditioned to your intended grow media before calibration. The bridge between the glass tip of the probe and the body of the probe may change colour/look dirty (this is especially obvious with soils with higher clay contents). This is normal.

### 1 Insert batteries.

See section 13.0.

### 2 Connect Leap™ pH Probe

Connect the Leap™ pH Probe to the Bluelab® Combo Meter Plus via the BNC fittings.

### 3 Remove the storage cap

Crip the top of the cap and gently twist the base one rotation clockwise to loosen slightly. Next slowly slide the cap off the pH probe. DO NOT completely remove the base of the cap from the top of the cap.

*CAUTION: When the Leap™ pH Probe is not in use, add enough Bluelab® pH Probe KCl Storage Solution to the storage cap so the probe tip is covered. Then replace the cap and store in a secure place.*

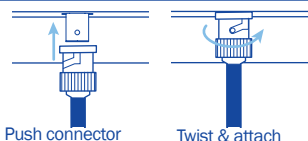
**DO NOT use RO (Reverse Osmosis), Distilled or Deionized water. Pure water changes the chemistry in the reference, causing the probe to die.**

- 4 Insert the probe 3-5 times into the media you are going to be measuring to pre condition, clean following section 12.0 cleaning instructions.

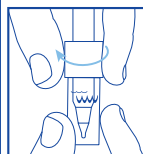
### 5 Calibrate the pH

Calibrate the Bluelab® Combo Meter Plus by following the instructions in section 3.0 of this manual.

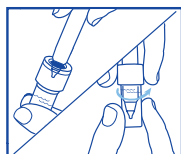
**This must be done before the Bluelab® Combo Meter Plus is used for the first time.**



Attaching the Bluelab® Leap™ pH Probe to the Meter



Removing Leap™ pH Probe storage cap



Ensure probe tip is covered by the KCl storage solution in cap



Before



After

Leap™ pH Probe bridge before and stained after preconditioning in soil. This is normal.

See section 3.0 for calibration steps



## 3.0 Calibration

pH calibration is required before first use and then at least monthly to ensure readings are accurate. BlueLab® recommend more frequent calibration with high use EC does not need to be calibrated.

### The BlueLab® Leap™ pH Probe should be cleaned and recalibrated when:

- The reading is different to what you were expecting.
- The batteries have been removed or changed.
- The BlueLab® Leap™ pH Probe is replaced with a new one or is disconnected from the BlueLab® Combo Meter Plus.
- The pH calibration indicators have disappeared.

When calibrating the pH after first use the BlueLab® Leap™ pH Probe needs to be cleaned. See Leap™ pH Probe cleaning in section 12.0. The BlueLab® Leap™ pH Probe does not need to be cleaned for initial calibration unless you have pre-conditioned the probe in media.

When to calibrate	Light user (Up to 50 insertions a week)	Heavy user (More than 50 insertions a week)
Solution		
Low Abrasive Media (eg Rockwool, CocoCoir)	Calibrate at least once a month	Calibrate at least once a week
Highly Abrasive Media (eg Soil, potting mix)		

### For best pH calibration

#### pH reading accuracy is dependant on the accuracy and age of the calibration solutions used, and use and cleanliness of the BlueLab® Leap™ pH Probe tip.

- Ensure the BlueLab® Leap™ pH Probe has been cleaned and rinse the Leap™ pH Probe tip with clean water between calibration solutions to reduce contamination of the pH solutions.
- Only fresh uncontaminated solutions should be used.
- Calibrate the pH at the same temperature as the solution to be measured.
- ALWAYS calibrate the BlueLab® Leap™ pH Probe with pH 7.0 then pH 4.0 or pH 10.0.
- If you are changing media (including using new media) you should pre-condition the probe by inserting it in the media 3-5 times and cleaning before calibrating

#### The pH calibration involves cleaning the BlueLab® Leap™ pH Probe tip and then calibrating in TWO SOLUTIONS.

If a reading below pH 7.0 is expected, use pH 7.0 and pH 4.0 calibration solutions. If a reading above pH 7.0 is expected, use pH 7.0 and pH 10.0 calibration solutions. Follow the steps below for Combo Meter Plus calibration.

### Storage and use of calibration solutions

- Always place the lid back onto the bottle after use or evaporation will occur rendering the solution useless.
- DO NOT measure directly into the bottle. Tip a small amount into a clean container and discard after use.
- Store in a cool place.
- Never add water to solutions.



## 3.0 Calibration cont.

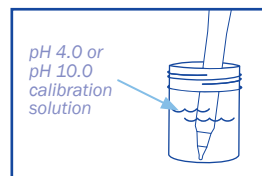
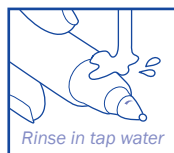
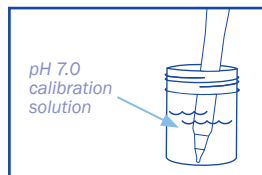
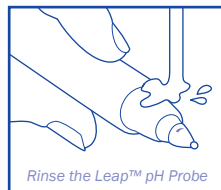
### To calibrate the pH

#### 1 Clean pH probe tip.

See section 12.0 (the BlueLab® Leap™ pH Probe does not require cleaning before the first use, unless it has been preconditioned).

#### 2 pH 7.0 calibration

- Press any button to turn the BlueLab® Combo Meter Plus ON.
- Loosen and remove cap from probe.
- Rinse probe tip in fresh water, then place in pH 7 solution.
- Press the CAL button until CAL appears on the screen and release.
- A series of flashing '□' s will appear. Once calibration is complete, PH7 will be displayed.
- If Err appears during the calibration process see Section 14.0.
- The Combo Meter Plus must be calibrated to two points. If after an hour the meter has not been calibrated with a second calibration point the calibration indicators disappear and the Combo Meter Plus reverts to an uncalibrated state. Calibration is required.

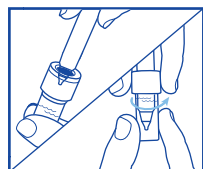


#### 3 pH 4.0 / 10.0 calibration

- Rinse pH probe tip in fresh water, then place in either pH 4 or pH 10 solution.
- Press the CAL button until CAL appears on the screen and release.
- A series of flashing '□' s will appear. Once calibration is complete, pH 4 or pH 10 will be displayed.
- Rinse pH probe tip in fresh water.
- The Combo Meter Plus is now calibrated and ready for use.
- The successful calibration indicator '(pH 7) 4' or '(pH 7) 10' will appear on screen.
- Probes require cleaning and calibrating at least every 30 days, more frequent with high use.



Successful pH 7 and pH 4 calibration



#### 4 Store the Leap™ pH Probe

Add enough BlueLab pH Probe KCl Storage Solution into the probe storage cap to fully submerge the Leap™ pH Probe tip. Place storage cap on probe.





## 4.0 Changing nutrient and temperature display units

Nutrient and temperature can be displayed in different units. The units available are shown in the tables below.

### Changing nutrient units displayed

#### 1 To select unit

- Press and hold the 'nutrient/units' button until the display starts flashing.  
Release, then short button press the same button to scroll through the available units.  
Release when the required unit is displayed.
- The display flashes four times after the last button press then returns back to a normal display, showing the selected unit.



Display	Conductivity/nutrient units
	Electrical conductivity
	Conductivity factor
	Parts per million (TDS) EC x 500
	Parts per million EC x 700



### Changing temperature units displayed

#### 1 To select unit

- Press and hold the 'temp/units' button until the display starts flashing.  
Release, then short button press the same button to scroll through the available units.  
Release when the required unit is displayed.
- The display flashes four times after the last button press then returns back to a normal display, showing the selected unit.

Display	Temperature units
	°C (degrees Celsius)
	°F (degrees Fahrenheit)





## 5.0 Measuring elements in solution

*The values measured in a hydroponic solution by the Bluelab Combo Meter Plus include nutrient (conductivity), temperature and pH levels.*

### **Taking a conductivity/nutrient reading**

Short press the 'nutrient/units' button to select conductivity.

Insert the conductivity/temperature probe into solution where there is strong movement of the solution, or stir the solution with the conductivity/temperature probe.

Wait 1-2 minutes or longer for the conductivity/temperature probe to reach solution temperature. The conductivity reading will stabilize to a constant value.

If the solution you are measuring is outside the measurement range of the Combo Meter Plus, an 'Or' (over range) will be displayed.

NOTE: The conductivity/temperature probe tip should be cleaned at least once a month to remove salt build-up ensuring accurate readings. If oily additives are being used the conductivity/temperature probe tip should be cleaned after each use. See Section 9.0.

### **Taking a temperature reading**

Short press the 'temp/units' button to select temperature.

Insert conductivity/temperature probe into the solution.

Wait 1-2 minutes or longer for conductivity/temperature probe to reach solution temperature. The temperature reading will stabilize to a constant value.

If the solution you are measuring is outside the measurement range of the Combo Meter, a 'Ur' (under range) or 'Or' (over range) will be displayed

NOTE: For very cold or very hot temperatures it will take 4-5 minutes for the conductivity/temperature probe to reach solution temperature. To help decrease time taken to reach the solution temperature, place the conductivity/temperature probe in an area where there is strong movement of solution, or stir solution with the conductivity/temperature probe.

### **Taking a pH reading**

Short press the 'pH/calibrate' button to select pH.

Remove the storage cap from the Bluelab® Leap™ pH Probe and place the Bluelab® Leap™ pH Probe into the solution.

Wait 1-2 minutes or longer for reading to stabilize to a constant value. The pH reading is displayed.

If the solution you are measuring is outside the measurement range of the Combo Meter Plus, a 'Ur' (under range) or 'Or' (over range) will be displayed.

NOTE: If taking readings of more than one solution, rinse the Bluelab® Leap™ pH Probe tip thoroughly in fresh water between solutions to avoid cross contamination.



## 6.0 Measuring the pH value in Media

Once the BlueLab<sup>®</sup> Combo Meter Plus has been set up and calibrated, using it to measure a pH value involves using the BlueLab<sup>®</sup> Leap<sup>™</sup> pH Probe, the dibber/auger for coarse soil and button functions. NOTE: The pH probe tip must not have dried out. If it has dried, soak the BlueLab<sup>®</sup> Leap<sup>™</sup> pH Probe in KCl for at least one hour prior to taking a measurement.

- 1 If measuring outside of solution, rockwool or small/shallow pots, remove the top 5cm / 2in. from the surface of the sample area.
- 2 If the soil/media is dry, moisten with a small amount of distilled water.
- 3 Turn the Combo Meter Plus on.
- 4 Remove the storage cap and insert the Leap<sup>™</sup> pH Probe into the grow media, if using dibber ensure probe is in contact with soil
- 5 Wait for the reading displayed on the Combo Meter Plus to stabilize to a constant value. This can take up to four minutes. Record the reading.
- 6 Remove the Leap<sup>™</sup> pH Probe from the soil/media and wash the Leap<sup>™</sup> pH Probe tip under fresh running water (not distilled) to remove any remaining soil residue.
- 7 Repeat the procedure in different locations and take the average of the measured data as the pH level is representative of the sample area.
- 8 If the Combo Meter Plus turns off while taking a measurement, simply press the power button to turn the Combo Meter Plus back on and continue with your measurement.
- 9 Store the Leap<sup>™</sup> pH Probe between measurements. See section 10.0.

## 7.0 Measuring soil solution pH value

The greatest source of error in soil analysis comes during sample collection. An effort should be made to ensure each sample properly represents the area being sampled.

- The readings taken with this method could be higher than those taken by other methods
- Consistency of the method used is important to be able to compare sets of results
- The accuracy of this method cannot be guaranteed because of the variables involved
- The results should be viewed as 'indicative' rather than 'absolute'

### Collection of sample

- 1 Sample in a zig-zag pattern across the required area.
- 2 Remove 15 mm / 5/8 in. of top soil before sampling at a depth of 150 mm / 6 in.
- 3 Mix all collected samples together thoroughly.
- 4 Allow to dry in the air or in an oven at 40 °C / 104 °F.
- 5 Weigh out 20 g / 0.7 oz of the collected soil into a 150 ml / 5 fl oz plastic sample jar.

### Sample preparation

- 1 Add 100 ml / 3 fl oz of distilled or deionized water, screw lid on tightly.
- 2 Shake continuously for 5 minutes. Leave overnight and shake again the next morning.
- 3 Allow to settle for 15 minutes after shaking and strain sample into clean measuring cup.

### Take pH readings as follows:

- 1 Remove the storage cap and insert the Leap<sup>™</sup> pH Probe tip into the soil solution sample.
- 2 Turn the Combo Meter Plus on.
- 3 Wait for the reading displayed on the Combo Meter Plus to stabilize to a constant value. This can take up to four minutes. Record the reading.
- 4 Remove the Leap<sup>™</sup> pH Probe from the soil solution and wash the Leap<sup>™</sup> pH Probe tip under fresh running water (not distilled) to remove any possible soil residue.
- 5 If the Combo Meter Plus turns off while taking a measurement, simply press the power button to turn the Combo Meter Plus back on and continue with your measurement.
- 6 Rinse the probe in fresh running water when finished and return to the storage cap ensuring enough BlueLab pH Probe KCl Storage Solution is in the storage cap to cover the probes glass tip.





## 8.0 Information about measuring the pH of soil/media

pH is the measurement of the hydrogen ion concentration (H<sup>+</sup>) - acidity and its opposite, alkalinity. Neutral pH is 7.0 pH. Acidity measures below seven pH (7.0 pH) with alkalinity measuring above it (7.0 pH). See chart below.

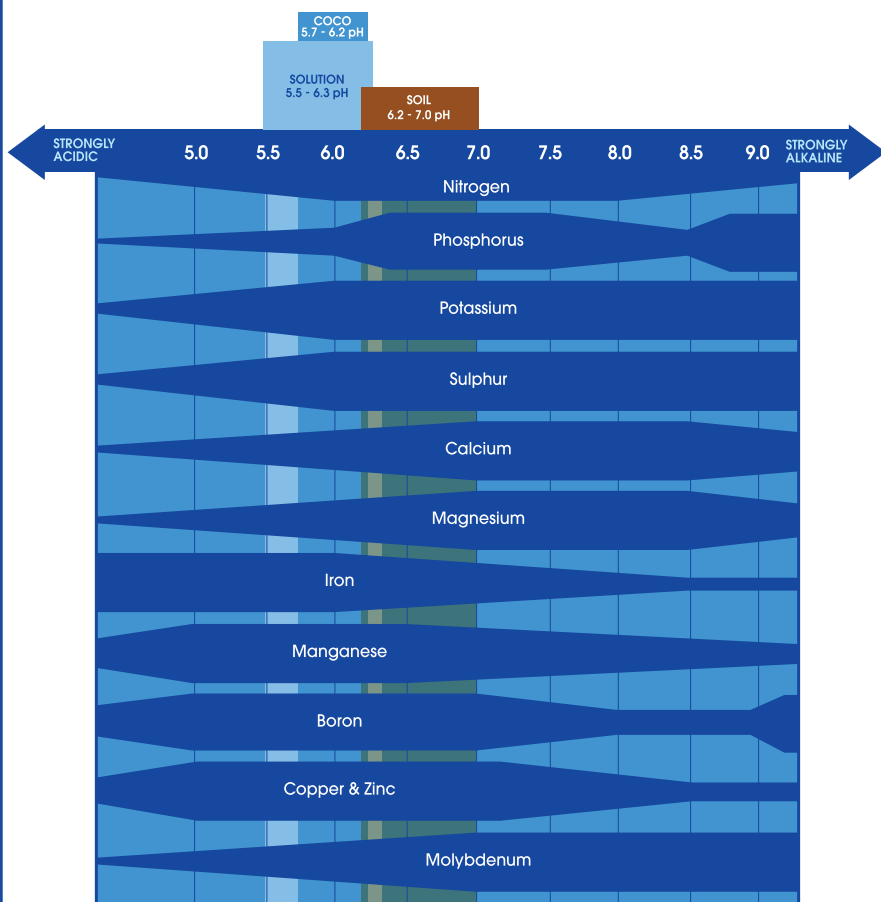
### In soil or growing media, pH strongly influences the availability of nutrients to the plant and the presence of microorganisms in the soil.

Certain plants require a particular pH range to enable the required nutrients to be consistently available to the plant. If the solution is too acidic or too alkaline it can cause “lock up” – a situation which restricts certain elements essential for growth from being absorbed by the root structure. This in turn reduces plant health and performance. Deficiencies in the required elements become apparent in plant growth and can lead to crop failure.

Low soil pH causes aluminium and manganese toxicity in plants and reduces the availability of soil phosphorus. High soil pH also reduces soil phosphorus availability and reduces micro nutrients such as zinc and boron to plants.

The chart below shows how nutrient pH levels influence the uptake of certain elements.

Recommended pH range for plants grown in:





## 8.0 Information about measuring the pH of soil/media cont.

Taking pH measurements of soil with an electronic meter is indicative rather than absolute.

The following factors are outside the control of any Combo Meter Plus, so to minimise their effect on the accuracy of the pH measurement you should consider the following precautions:

### Moisture level/raw water

If the sample you are wishing to measure is dry, add RO water or distilled water to moisten. Ideally wait 24 hours before you take a measurement.

**NOTE:** If you add tap water, you will influence the soil pH reading based on the pH of the tap water.

### Calibration of the Combo Meter Plus and cleanliness and age of the probe

Calibrating the Combo Meter Plus at least monthly will help ensure accurate readings. Cleaning the soil residue from the probe tip and storing in a clean moist state will help provide reliable readings as well as prolonging the probes life.

### Sample selection

For open field testing, remove the top 5 - 10 cm / 2 - 4" of the top of the soil. Samples are taken approximately 15 - 20 cm / 6 - 8" down into the soil and from various areas in the field, then an average of the readings is used.

For container grown plants, it is recommended to check the pH level of the grow media prior to planting.

## Factors affecting pH in the soil or media:

### Soil type

Soils formed under high rainfall conditions (e.g. Eastern USA) are more acidic than those formed under dry conditions (e.g. Western USA).

### Growth stage of the plant

Uptake and requirements of particular elements change as the plant progresses through it's growing cycle. Recording pH level data to create a history is valuable.

### Applications and types of fertilizers

Applications and types of fertilizers can alter the pH level significantly. The time at which you take the reading is important. Evaluate the brand of fertilizer to see if it is altering the pH in the wrong direction.

### Applications of sprays

As sprays can soak into the soil/media, it can change the pH levels.

### Soil/media temperature

High temperature soils may have a high concentration of CO<sub>2</sub>. The higher the concentration of carbon dioxide, the more carbonic acid there is which lowers pH.

### pH range for soil crops

The recommended pH range for soil crops is 6.2 - 7.2, but this is plant specific.



## 9.0 Cleaning the conductivity/temperature probe

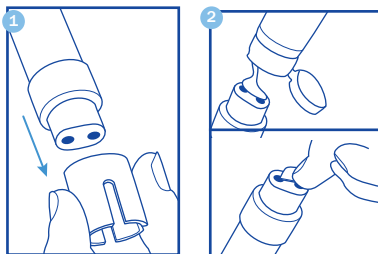
*Cleaning the conductivity/temperature probe periodically ensures accurate readings.*

The conductivity/temperature probe is cleaned using the Bluelab Conductivity Probe Cleaner, or “Jif” a trade name for a liquid scourer cream used in home bathrooms and kitchens. Similar products are called “Liquid Vim”, “Soft Scrub”, “Cif cream”, or “Viss”. *Never use scented varieties as they contain oils that contaminate the conductivity/temperature probe.*

Follow the steps below to clean the conductivity/temperature probe.

### 1 Remove shroud.

Warm the shroud in your hand for a few seconds to help with removal. Hold the body and pull the shroud off.



### 2 Clean the conductivity probe face.

Place one or two drops of Bluelab Conductivity Probe Cleaner onto the probe face and rub with the Bluelab Chamois or your finger firmly and vigorously.



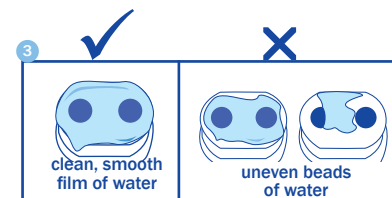
### 3 Rinse the conductivity probe face.

Rinse off all traces of cleaner under running tap water while scrubbing the probe face with the other side of the Bluelab Chamois or the same finger.



### 4 Check that the water forms a smooth film on the probe face. Ensure you have a clean, smooth film without any beads of water.

If you have beads of water, repeat steps 2 and 3.



### 5 Refit the shroud and test in 2.77 EC Conductivity Standard Solution to ensure adequate cleaning.

Place the probe tip into the solution, wait for the reading to stabilize to a constant value. This can take a few minutes while the probe adjusts to the temperature of the solution.

Repeat the cleaning process if the reading given is not within 0.1 EC, 1 CF, 50 ppm or 70 ppm of the values in the table below.



## Testing the Bluelab Conductivity/Temperature Probe

*The conductivity/temperature probe is tested in either 2.77EC/27.7CF/1385 ppm or 1940 ppm solution depending on the unit of conductivity chosen.*

Use the standard solutions in the table to the right. Bluelab solutions are recommended.

Unit chosen	EC	CF	ppm 500	ppm 700
Solution required	2.77	27.7	1385	1940

NOTE: The shroud **MUST** be left on the probe when taking readings.



## 10.0 Hydrating the Leap™ pH Probe

Hydrate the Leap™ pH Probe in Bluelab® pH Probe KCl Storage Solution when:

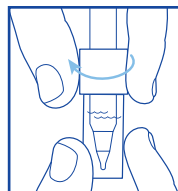
- the probe tip has not always been stored in KCl storage solution, to improve the reading response speed.
- the probe tip has been accidentally allowed to dry out

Never use RO (Reverse Osmosis), Deionized or Distilled water.

Pure water changes the chemistry in the reference, causing the probe to die.

### 1 Loosen, then remove the storage cap.

Place the Bluelab® Leap™ pH Probe upright in a plastic container.



### 2 Clean the Bluelab® Leap™ pH Probe.

Ensure the probe tip is cleaned before hydrating. See section 12.0 for instructions.



### 3 Add enough Bluelab® pH Probe KCl Storage Solution to a plastic container to submerge the probe tip.

If the KCL is dirty due to soil flakes, use fresh KCL solution.

### 4 Leave to soak for at least 24 hours.

After hydration, always calibrate the pH probe to ensure accuracy, see section 3.0.



## 11.0 Storing the Bluelab® Combo Meter Plus

### 1 Store the Bluelab® Combo Meter Plus in a cool, dry and clean place when not in use.

### 2 Keep out of direct sunlight.

Keep Bluelab® Combo Meter Plus out of direct sunlight to prevent irreparable damage to the LCD reading display.

### 3 The Bluelab® Combo Meter Plus is not waterproof but will withstand occasional water splashes.

If the meter is splashed, wipe dry as soon as possible.

### 4 Remove batteries if the meter is to be stored for a prolonged period.

### 5 Remove Leap™ pH Probe if storing the Combo Meter Plus without use for longer than two to three weeks and check regularly that the Leap™ pH Probe tip has not dried out.

**When storing the Bluelab® Leap™ pH Probe, the probe tip must be kept submerged in KCl solution in the storage cap.**

DO NOT use RO (Reverse Osmosis), Distilled or Deionized water. Pure water changes the chemistry in the reference, causing the probe to die.



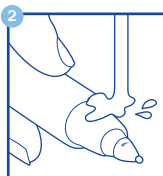
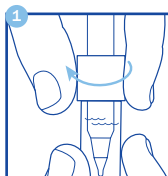
## 12.0 Cleaning the Bluelab® Leap™ pH Probe

To ensure accurate readings the Bluelab® Leap™ pH Probe needs to be rinsed in water after each use and cleaned prior to calibration using the following instructions.

The storage cap must always be put back on after cleaning. Always ensure it contains enough Bluelab® pH Probe KCl Storage Solution to cover the probe tip.

### 1 Remove storage cap from Leap™ pH Probe.

Hold the top of the storage cap, twist the cap to loosen then remove.



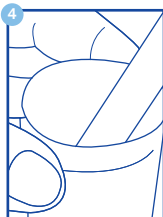
### 2 Rinse Leap™ pH Probe tip under fresh tap water. Never use RO (Reverse Osmosis), Distilled or Deionized water. Note the bridge on the tip gets discoloured by grow media.

### 3 Fill a small plastic container with clean tap water. Add a small amount of Bluelab® pH Probe Cleaner or mild detergent (dishwashing liquid).

### 4 Gently stir the probe tip in the mixture.

Ensure that you do not 'knock' the Leap™ pH Probe on the side of the container as this may cause damage to the probe.

Rinse well under fresh running water to remove all traces of the detergent mixture.



### 5 If the probe tip requires removal of heavy contamination: Gently brush around the glassware, **do not touch the glassware**, with a few drops of Bluelab® pH Probe Cleaner or mild detergent (dishwashing liquid) and a soft toothbrush.

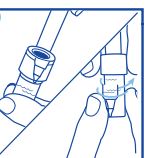
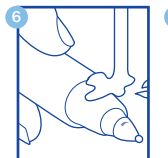
**Note:** Rubbing the glassware with the toothbrush can change the charge on the glass tip.

### Do not brush the glassware



### 6 Rinse well under fresh running tap water to remove all traces of the detergent mixture.

### 7 Calibrate Leap™ pH Probe after cleaning, see section 3.0 After calibration, store Leap™ pH Probe in the storage cap, ensuring there is enough KCl Storage Solution to cover the tip.



## 13.0 Battery replacement

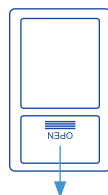


Batteries are replaced in the Bluelab® Combo Meter Plus when the low battery indicator appears on screen. The low battery indicator remains on and the Bluelab® Combo Meter Plus continues to operate until the batteries die or are replaced.

### 1 Open battery compartment by sliding the back cover down and insert 2 x AAA batteries as shown on the battery holder. Slide cover back on. NOTE: Alkaline batteries are recommended.

### 2 **IMPORTANT: Check the batteries at least once every six months for signs of deterioration, rusting or swelling.**

If signs of deterioration are found, clean battery holder contacts and replace batteries.



Battery cover



## 14.0 Error messages

An error message will only appear following pH calibration failure.

'Err' will be displayed for a few seconds then the display will show the previous reading. Successful pH calibration indicators will disappear. The BlueLab Combo Meter Plus is in an uncalibrated state, therefore recalibration is required. See causes of Error messages below.

### Possible causes for an 'Err' message:


- Calibration solutions contaminated
- Wrong solutions used
- pH probe contaminated
- pH probe not properly attached
- pH probe worn out or damaged
- Calibrate to pH 7.0 FIRST then to pH 4.0/10.0

## 15.0 Technical specifications

	pH	Conductivity	Temperature
<b>Measurement range</b>	0.0 - 14.0 pH	0 - 9.9 EC 0 - 99 CF 0 - 4950 ppm 500 (TDS) 0 - 6930 ppm 700	0 - 50 °C 32 - 122 °F
<b>Resolution</b>	0.1 pH	0.1 EC 1 CF 10 ppm 500 (TDS) 10 ppm 700	1 °C 1 °F
<b>Accuracy (at 25 °C / 77 °F)</b>	±0.1 pH	±0.1 EC ±1 CF ±50 ppm ±70 ppm	±1 °C ±2 °F
<b>Calibration</b>	Two point pH 7.0 and pH 4.0 or pH 10.0	Not required (factory calibrated)	Not required (factory calibrated)
<b>Temperature compensation</b>	Not applicable	Automatic temperature compensation	Not applicable
<b>Operating environment</b>	0 - 50 °C / 32 - 122 °F		
<b>Power source</b>	2 x AAA alkaline batteries		



## 16.0 Troubleshooting guide

Trouble	Reason	Correction
Nutrient reading low	Contaminated conductivity/temperature probe.	Clean conductivity/temperature probe (see Section 7.0).
	Solution temperature low/high.	Wait 5 to 10 minutes for reading to stabilize to a constant value.
Temperature reading inaccurate	Temperature of conductivity/temperature probe different to solution temperature.	Wait 5 to 10 minutes for conductivity/temperature probe to reach solution temperature.
pH reading inaccurate	Contaminated Leap™ pH probe / glassware not hydrated.	Clean pH probe (see Section 8.0); then calibrate (see Section 3.0).
	Wick contaminated, blocked or dry.	Hydrate probe in KCl storage solution for 24 hours, see Section 10.0. Do not measure proteins or oils with this unit. Replace unit.
	Incorrect pH calibration.	Ensure calibration solutions are accurate. Replace if in doubt. Wait longer for readings to stabilize before calibrating to a constant value.
	Leap™ pH Probe calibration unreliable.	Calibrate pH probe (see Section 3.0).
	Leap™ pH Probe damaged	Replace pH probe.
pH reading does not change from solution to solution	Broken glass bulb, tube or connector.	Check pH probe for damage. Replace probe.
 Displays low battery indicator	Insufficient power to take a reliable reading.	Replace the batteries. DO NOT use rechargeable batteries.
No display	Batteries dead or inserted incorrectly.	Check batteries are inserted correctly. Replace if necessary.
Display shows 'Err'	Problem with pH calibration.	See error message descriptions in Section 14.0 of this document.
Or Ur While in pH mode	Over range pH. Under range pH.	Solution > 14.0 pH. Solution < 0.0 pH. Check pH probe connection. pH probe could be faulty. Combo Meter Plus could be wet inside.
Or Ur While in temp mode	Over range temperature. Under range temperature.	Solution >51 °C / 122 °F. Solution <0 °C / 32 °F. Conductivity/temperature probe or Combo Meter Plus faulty.
Or While in conductivity/nutrient mode	Over range conductivity/nutrient.	Over range conductivity >9.9 EC, 99 CF, 4950 ppm 500, 6930 ppm 700. Conductivity/temperature probe or Combo Meter Plus faulty.



# Bluelab® Leap™ pH Probe replacement

Direct multimedia pH measurement for nutrient solution and root-zone.

Reliably measure the pH level across a wide range of media.

The Bluelab® Leap™ pH Probe can be used by everybody from the home enthusiast through to more robust commercial applications. Team with Bluelab® Solutions.



## Bluelab pH & Conductivity Probe Care Kit

The instrument is only as accurate as the probe is clean!

Probe cleaning is one of the most important parts of owning and operating any Bluelab meter, monitor or controller.

If the probe is contaminated (dirty) it affects the accuracy of the reading displayed.



### Bluelab pH & Conductivity Probe Care Kit contains:

Probe care instructions	Bluelab pH & Conductivity Probe Cleaner
3 x plastic cups	Toothbrush (pH probe cleaning Instrument)
20ml single-use Bluelab Solution Sachets 2 each of: pH 7.0 & pH 4.0, 2.77 EC, KCl	Chamois (Conductivity probe cleaning instrument )

## Bluelab pH Probe KCl Storage Solution

The perfect solution to store and hydrate your Bluelab pH products.

Bluelab pH Probe KCl Storage Solution is designed to increase response time and maximize the life of Bluelab pH pens and pH probes.

For best results, use the KCl solution to store the pH pen/ probe after use and hydrate monthly.

Instructions are on the label of the bottle.



### Use Bluelab pH Probe KCl Storage Solution with:

Bluelab pH Pen	Bluelab pH Probe
Bluelab Soil pH Pen	Bluelab Leap™ pH Probe





# Bluelab® Limited Warranty

Bluelab® Corporation Limited (Bluelab®) provides a warranty on its products (Bluelab® Combo Meter Plus) under the following terms and conditions:

### How Long Does Coverage Last?

Bluelab® warrants the Bluelab® Combo Meter Plus (Product) for a period of 60-months from date of purchase by original purchaser or consumer. Proof of purchase, to Bluelab's sole satisfaction, is required for the warranty to be effective (store sales receipt for Product showing model number, payment and date of purchase). This warranty is non-transferable and terminates if the original purchaser/consumer sells or transfers the Product a third party.

### What is Covered?

Bluelab® warrants the Product against defects in material and workmanship when used in a normal manner, in accordance with Bluelab® instruction manuals. If Bluelab® is provided with valid proof of purchase (as defined above) and determines the Product is defective, Bluelab® may, in its sole discretion either (a) repair the Product with new or refurbished parts, or (b) replace the Product with a new or refurbished Product.

Any part or Product that is replaced by Bluelab® shall become its property. Further, if a replacement part or Product is no longer available or is no longer being manufactured, Bluelab® may at its sole discretion replace it with a functionally-equivalent replacement part or product, as an accommodation in full satisfaction of the warranty.

### What is NOT covered?

This warranty does not apply to equipment, component or part that was not manufactured or sold by Bluelab®, and shall be void if any such item is installed on a Product. Further, this warranty does not apply to replacement of items subject to normal use, wear and tear and expressly excludes:

- Cosmetic damage such as stains, scratches and dents
- Damage due to accident, improper use, negligence, neglect and careless operation or handling of Product not in accordance with Bluelab® instruction manuals, or failure to maintain or care for Product as recommended by Bluelab®
- Damage caused by use of parts not assembled/installed as per Bluelab® instructions
- Damage caused by use of parts or accessories not produced or recommended by Bluelab®
- Damage due to transportation or shipment of Product
- Product repaired or altered by parties other than Bluelab® or its authorised agents
- Product with defaced, missing or illegible serial numbers
- Products not purchased from Bluelab® or a Bluelab®-authorised distributor or reseller.

### How Do You Get Service?

To begin a warranty claim you must return the Product to the point of purchase with valid proof of purchase (as defined above). In California, you can also return the Product to any Bluelab-authorised distributor or reseller, with valid proof of purchase.

### Limitation of Liability & Acknowledgments

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS WARRANTY AND THE REMEDIES SET OUT ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES AND REMEDIES (ORAL OR WRITTEN, EXPRESS OR IMPLIED).

EXCEPT AS PROVIDED IN THIS WARRANTY AND TO THE MAXIMUM EXTENT PERMITTED BY LAW, BLUELAB IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGES, OR ANY OTHER LOSS OR DAMAGES RESULTING FROM SALE OR USE OF THE PRODUCT, OR BREACH OF WARRANTY, HOWEVER CAUSED, INCLUDING DAMAGES FOR LOST PROFITS, PERSONAL INJURY OR PROPERTY DAMAGE.

IT IS UNDERSTOOD AND AGREED BY CONSUMER UPON PURCHASE OF A PRODUCT THAT, EXCEPT AS STATED IN THIS WARRANTY, BLUELAB IS NOT MAKING AND HAS NOT MADE ANY EXPRESS OR IMPLIED WARRANTY OR OTHER REPRESENTATION REGARDING THE PRODUCT, AND DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE TO THE EXTENT PERMITTED BY LAW. ANY WARRANTIES WHICH ARE IMPOSED BY LAW AND CANNOT BE DISCLAIMED ARE HEREBY LIMITED IN DURATION TO THE PERIOD AND REMEDIES PROVIDED IN THIS WARRANTY.

SOME JURISDICTIONS (STATES OR COUNTRIES) DO NOT ALLOW EXCLUSION OR LIMITATION FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT BE APPLICABLE.

IF ANY PROVISION OF THIS WARRANTY IS JUDGED TO BE ILLEGAL, INVALID OR UNENFORCEABLE, THE REMAINING PROVISIONS OF THE WARRANTY SHALL REMAIN IN FULL FORCE AND EFFECT.

### Governing Law; Authority

This warranty is governed by the laws of the state of country where Product is purchased, without regard to its choice of law principles. Except as allowed by law, Bluelab® does not limit or exclude other rights a consumer may have with regard to the Product. No Bluelab® distributor, employee or agent is authorised to modify, extend or otherwise change the terms of this warranty.

Register your guarantee online at [bluelab.com](http://bluelab.com)

## Let's Talk

If you need assistance or advice, we're here to help.



**P** North America +1-855-525-8352

**P** Asia Pacific +64 7 578 0849

**P** Europe + 31 (0) 85 05 16 848

**E** support@bluelab.com

**f** facebook.com/bluelabofficial



## Limited Written Guarantee

The Bluelab® Combo Meter Plus comes with a 5 year limited written guarantee, 6 months for the Bluelab® Leap™ pH Probe. Proof of purchase required.



## Post

**Bluelab® Corporation Limited**

8 Whiore Avenue

Tauriko

Tauranga 3110

New Zealand



Instruction Manual English METCOMPLUS\_V2\_280421

© Copyright 2018, all rights reserved, Bluelab® Corporation Limited

