

Bluelab OnePen™ User Manual



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1.0 Introduction & Overview

1.1 Features

Replaceable pH, Conductivity (EC) and Temperature probe.	Made with durable and reliable materials. Titanium electrodes and a double-junction pH probe.	
IP68 waterproof rating.	Automatic Temperature Compensation	
Measure both EC (Conductivity) and pH at the same time.	Bluetooth connectivity, when using the Edenic by Bluelab app.	

When Connected to Edenic by Bluelab app

One click connection.	Real-time data sharing.
History reporting to enable data-driven decision making.	Software updates.

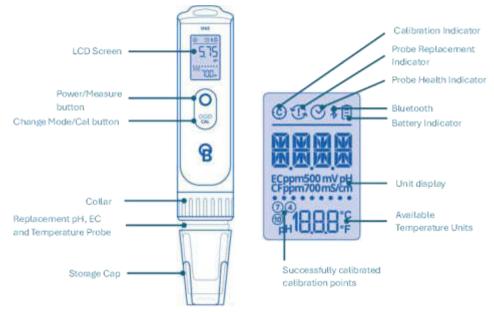
1.2 What's in the box?

1x Bluelab OnePen[™] with Replaceable pH, Conductivity (EC), & Temperature Probe 2x 18 ml / 0.6 fl.oz Bluelab pH Calibration solution sachets 1x 18 ml / 0.6 fl.oz Bluelab KCI Storage Solution Sachet 1x Bluelab Sensor Cleaning Brush

1.3 Description

The Bluelab OnePen[™] is a portable pH, Conductivity (EC) and Temperature measuring device. With built-in Bluetooth capability, the Bluelab OnePen[™] connects to Edenic (visit <u>Edenic.io</u> for more information), allowing growers to share data in real time and link their measurements to their Bluelab control system, at any time from their phone.

2.0 Bluelab OnePen[™] 2.1 Overview



2.2 Power

1. Press "O" button to power the Bluelab OnePen[™] ON.



2. Hold the "O" button to power off the Bluelab OnePen[™]. Release once backlight has turned off.

Note: The Backlight will automatically turn off after 1 minute and the pen will automatically turn off after 4 minutes to conserve battery power.

2.3 Set/Change Units

Conductivity

1. Press and hold both "O" and "CAL" buttons together.



- 2. After 3 seconds, it will enter units' mode. Use the "CAL" button to cycle through available units: EC, CF, PPM500, PPM700, and mS/cm. The selected unit will flash on the screen.
- 3. Press "O" when desired unit is flashing to save and move onto Temperature unit selection.

Temperature

- 1. Use the "CAL" button to cycle through available units: °C, and °F. The selected unit will be flashing on the screen.
- 2. Press "O" when desired unit is flashing to save and exit units' mode.

2.4 Change Modes

Press the "CAL" button to cycle through the measurement modes. Available modes are pH/Temp, EC/Temp, EC/pH, and mV/Temp (if enabled from Edenic). The current measurement mode is indicated by the units displayed on the screen.



2.5 pH Calibration

pH calibration is important before first use to ensure accurate readings.

Note: It is recommended to hydrate the pH bulb in Bluelab KCl storage solution for 24hours before initial pH Calibration, to ensure that the glass bulb is active.

To calibrate the pH

Excluding first use, gently clean the OnePen[™] Probe with Bluelab Probe Cleaner and rinse well in fresh tap water.

See section 3.2 on how to clean the probe (the probe does not require cleaning before the first use but may require 24-hour hydration in KCl).

In several separate plastic containers, prepare a small amount of:

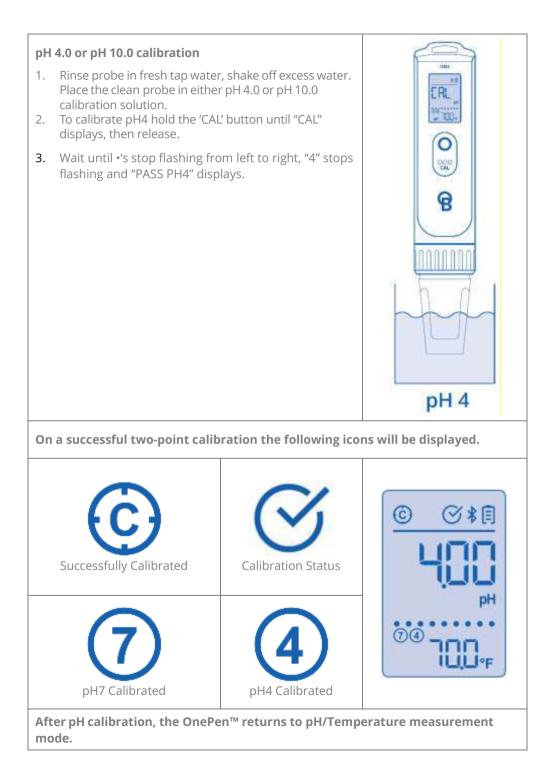
- fresh tap water
- pH 7.0 calibration solution.
- pH 4.0 or pH 10.0 calibration solution.

pH 7.0 calibration

- 1. Press "O" to turn on.
- 2. Select pH/Temp measurement mode via the "CAL" button. Make sure pH reading is displayed on the main display.
- 3. Place the probe in the pH 7.0 calibration solution. **Always** calibrate pH7 first!
- 4. Wait a few minutes for the probe to come to the same temperature as the solution.
- 5. To calibrate pH7 hold the "CAL" button until "CAL" displays, then release.
- Wait until •'s stop flashing from left to right, "7" stops flashing and "PASS PH7" displays.
- 7. Now you can calibrate to pH 4.0 or pH 10.0







2.6 Take Measurement

- 1. Select the desired measurement mode via the "CAL" Button.
- 2. Press the "O" button to save a measurement. The measurement will be held on the screen for 10 seconds.
- 3. Press the "CAL" button to cycle through measurement screens while in hold.
- Either wait 10 seconds for the OnePen[™] to auto exit hold or press the "O" button again to exit.

Note: All three parameters are saved to the pen and can be synced to Edenic if desired.

3.0 Probe Maintenance

Your Bluelab OnePen[™] Replacement Probe needs to be cleaned, kept hydrated, and pH calibrated regularly to extend its life and continue to provide accurate measurements.

3.1 How to hydrate your Bluelab OnePen[™] probe

Hydration is essential for accurate pH readings.

Without proper hydration, your readings may drift, and the probe may break. To ensure the probe glass bulb and porous wick are properly maintained, hydrate the Bluelab OnePen[™] glass bulb in Bluelab Probe KCl solution.

Bluelab OnePen[™] hydration

To hydrate your OnePen[™], follow the steps below.

- Make sure the glass bulb is clean and free from contamination. See section
 3.2 for cleaning instructions
- 2. Place a few drops of KCl Storage Solution on the sponge in the storage cap.
- 3. Leave to soak for 24 hours.
- 4. After hydration, rise the probe tip in fresh water, then follow the instructions to calibrate.

IMPORTANT: Never use RO (reverse osmosis), deionised, or distilled water, as these can permanently damage the probe.

IMPORTANT: Do not soak the titanium electrodes in KCl solution for any length of time.

IMPORTANT: Never let your pH bulb dry out. If you accidently let it dry read our OnePen[™] FAQ and troubleshooting guide.

3.2 How to clean your OnePen™ probe

Cleaning is essential for accurate pH and EC readings. Without proper cleaning, your readings may drift.

To clean your OnePen[™] probe, follow the steps below.

- 1. Rinse in fresh tap water.
- 2. Mix some Bluelab pH probe cleaner in a small container of fresh water.
- 3. Dip the provided brush in this solution and gently scrub the EC electrodes and rinse under running tap water.
- 4. Then gently stir the probe in the solution, taking care not to break the glass bulb before leaving to soak for 5 minutes in the cleaning solution.
- 5. Rinse again under running tap water.

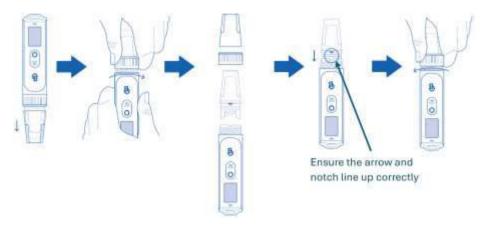
After cleaning perform a pH calibration and 2.77EC check.

Note: For heavily soiled probes, soak the probe in solution of 10% citric acid or white vinegar and pH probe cleaner overnight. For stubborn deposits use a Q-tip to remove them.

IMPORTANT: Do not user abrasive cleaners to clean the EC electrodes or pH bulb.

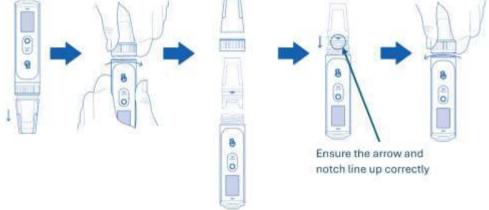
3.3 Replacing your OnePen[™] Probe:

- 1. Carefully remove the storage cap.
- 2. Turn the pen upside down to ensure the batteries remain in place.
- 3. Unscrew the threaded collar and remove the old probe from the pen body.
- 4. Remove the protective cap on the new probe.
- 5. Carefully replace the probe in the pen, lining up the arrow on the top side of the probe with the corresponding notch on the pen body.
- 6. Push the probe all the way in. The arrow should sit perfectly into the notch.
- 7. Secure probe with the threaded collar. Twist to ensure fully tightened.



4.0 Replacing your batteries

- 1. Carefully remove the storage cap.
- 2. Turn the pen upside down to ensure the batteries remain in place.
- 3. Unscrew the threaded collar and remove the probe from the pen body and place the probe back in the storage cap.
- 4. Tip batteries out of the OnePen[™].
- 5. Insert two new AAA batteries, negative end first.
- 6. Carefully replace the probe in the pen, lining up the arrow on the top side of the probe with the corresponding notch on the pen body.
- 7. Push the probe all the way in. The arrow should sit perfectly into the notch.
- 8. Secure probe with the threaded collar. Twist to ensure fully tightened.



5.0 Bluetooth Connection (optional)

- 1. Download the Edenic app on your mobile device. Create an account and log in.
- Ensure your Bluelab OnePen[™] is turned on, Press "O" button to power Bluelab OnePen[™] ON.
- 3. In the devices page of the Edenic app, select the green Add Device button and follow the instructions for handhelds. The 4-digit key-code to identify the OnePen[™] is found on the back of the device.

6.0 pH calibration Tips

For best pH calibration

pH reading accuracy is dependent on the accuracy and age of the calibration solutions used and the use and cleanliness of the pH probe tip.

- Ensure the pH probe has been cleaned and rinse 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 probe with pH 7.0 then to pH 4.0 or pH 10.0.
- Ensure both the pH bulb and temperature probe are submerged in the calibration solution.

Storage and use of calibration solutions

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



7.0 Troubleshooting & FAQ

7.1 Understanding Error Messages

Error	Reason Correction		
"pH UR" pH under range	The solution being measured is outside of the measurable pH range of pH0.0-pH14.0 for the OnePen™.	Dilute the solution to be measured.	
"pH OR"	Probe has been allowed to dry out or not clean.	Follow the cleaning and hydration steps in this guide.	
pH over range	Probe may be damaged.	Check the probe for damage and replace if damaged.	
	Calibration solutions maybe contaminated.	Always use fresh calibration solutions.	
"FAIL OFST" displayed	Calibration sequence incorrect.	Always calibrate pH7 first then either pH4 or pH10.	
when	Probe has been allowed to dry out or not clean.	Follow the cleaning and hydration steps in this guide.	
calibrating pH7	Glassware has aged or maybe damaged.	Check the probe for damage and replace if damaged.	
	Calibration solutions maybe contaminated.	Always use fresh calibration solutions.	
"FAIL GAIN" displayed	Calibration sequence incorrect.	Always calibrate pH7 first the either pH4 or pH10.	
when calibrating	Probe has been allowed to dry out or not clean.	Follow the cleaning and hydration steps in this guide.	
pH4 or pH10	Glassware has aged or maybe damaged.	Check the probe for damage and replace if damaged.	
"FAIL UNST"	Calibration solutions maybe contaminated.	Always use fresh calibration solutions.	
displayed when	Probe still coming up to solution temperature.	Soak the probe in the calibration solution to allow it to reach the same temperature as the solution.	
calibrating pH4 or pH10	Probe has been allowed to dry out or not clean.	Follow the cleaning and hydration steps in this guide	
r - r -	Glassware has aged or maybe damaged.	Check the probe for damage and replace if damaged.	
"EC UR" EC under range	The solution being measured is outside of the measurable conductivity range of 0.0EC-10.0EC for the OnePen™.	Dilute the solution to be measured.	
"EC OR" EC over	The EC electrodes maybe dirty.	Follow the cleaning steps in this guide.	
range	Probe maybe damage.	Check the probe for damage and replace if damaged.	
"UR °C/°F" Temperature under range	The solution being measured is outside of the working temperature range 0.0°C – 50.0°C (32°F – 122°F) for the OnePen™.	Dilute the solution to be measured.	
"OR °C/°F" Temperature over range	Probe maybe damage.	Check the probe for damage and replace if damaged.	

*8	Temperature sensor is damaged.	Replace the probe.
Displayed		
on Screen		

7.2 Troubleshooting guide

Trouble	Reason	Correction
© ⊘	Your probe is currently in excellent condition and has been successful calibrated for pH.	N/A
(Flashing)	lt has been 30 days since the last successful pH calibration	Perform a pH calibration.
(Flashing)	Last calibration was okay but not excellent. Contaminated calibration solutions Dirty probe Aging glassware 	Clean the probe and re-calibrate in fresh calibration solutions. Still occurring then consider replacing the probe.
(Flashing)	Last calibration was unsuccessful. Contaminated calibration solutions Dirty probe Damaged probe Aged glassware Incorrectly performing calibration	Check for damage before cleaning and re- calibrating in fresh calibration solutions. Still occurring then the Probe needs replacing.
(Flashing)	Available to connect to Bluetooth	Will stop flashing when paired and used with Edenic.
"LOW BAT OFF"	Batteries are low.	Replace batteries.
pH reading	Using factory default calibration.	Calibrate pH.
inaccurate	Contaminated pH probe / glassware not clean.	Clean probe, hydrate pH bulb, then calibrate.

	Wick contaminated or blocked.	Soak probe in KCl storage solution for 24 hours and retest. Don't measure proteins or oils with the OnePen [™] . You may need to replace the probe.	
	Glassware aged or damaged.	Replace probe.	
	pH calibrated with contaminated calibration solutions.	Re-calibrate in fresh calibration solutions.	
Noisy – readings jumping around	Contact zone not immersed correctly.	Lower pen into solution at least 3cm/1".	
Scrolling text: "PROBE INVALID FAKE OFF"	Incorrect probe has been connected.	Only use official Bluelab OnePen™ Replacement Probes.	
Pen won't turn on	Batteries are flat.	Replace batteries.	
	Probe not fully inserted.	Make sure the probe is fully inserted, and that the collar is tightened all the way.	

7.3 Frequently asked questions

Question	Answer	
My Bluelab OnePen™ product won't calibrate, what should I do?	See sections 2.1 and 2.2	
My pH reading is stuck on 7 pH, what should I do?	Inspect the glassware for damage. If the pen reading is stuck on 7 pH (or close to that), it is likely the glassware is damaged. The replacement probe likely needs replacing.	
My pH probe has accidentally dried out, what should I do?	The probe must be rehydrated for 24 hours in KCl storage solution (never use RO, distilled or de-ionised water). Rinse the probe in fresh tap water add fresh KCl Storage Solution to the sponge in the storage cap before replacing the cap. Leave for 24 hours before calibrating the probe to two points following the calibration instruction in section 2.5 of this guide.	
There is a salt crust on my probe – why?	Both the pH probe and the storage cap contain KCl (Potassium Chloride) solution. The result of a small level of evaporation of KCl is the formation of a salt crust as KCl is a type of salt. This salt crust is normal and will not harm the probe or meter. Gently wash the salt off under fresh running water. It is essential to ensure that your probe always has sufficient KCl in the storage cap to remain hydrated.	
How long will my Bluelab OnePen™ Replacement Probe last?	Bluelab's pH products are charged with reference material which expends over time and use. The average life span of a OnePen [™] Replacement Probe is approximately 18 months. Good care will help to maintain your pen. Follow our instructions to proper hydration, and regular cleaning, sections 3.1 and 3.2 in this guide. The OnePen [™] probe has a 6-month warranty so if you encounter any issues with your current unit, please feel free to reach out to us for support.	
What is KCI Storage Solution?	Our Bluelab pH Probe KCl (Potassium Chloride) Storage Solution is a storage solution designed specifically for use with Bluelab Replacement Probes or pH Probes. Storage solution is used to ensure a pH probe is kept in <i>ideal conditions</i> during storage, while the probe is not in use.	
My Bluelab OnePen™ won't pair with Edenic?	t Make sure you have Bluetooth switched on, on your mobile device. Ensure permission for Edenic to use Bluetooth has been allowed. Confirm that your OnePen [™] is not currently paired with another mobile device, the Bluetooth icon should be flashing. When pairing make sure both OnePen [™] and mobile device are within 10 meters of each another and the OnePen [™] is turned on.	

8.0 Specifications

8.1 Technical specifications

	рН	Conductivity	Temperature
Units	рН	EC, CF, ppm 500 (TDS), ppm 700, mS/cm	°C, °F
Measurement range	0.0 – 14.0 pH	0 - 10.0 EC, 0 - 100 CF, 0 - 5000 ppm 500 (TDS), 0 - 7000 ppm (ECx700), 0 - 10.0 mS/cm	0 - 50 °C, 32 - 122 °F
Resolution	0.01 pH	0.01 EC, 0.1 CF, 10 ppm 500 (TDS), 10 ppm 700, 0.01 mS/cm	0.1
Accuracy at 25°C/77°F	±0.05 pH	±0.1 EC, ±1 CF, ±50 ppm 500 (TDS), ±70 ppm 700, ±0.1 mS/cm	±1
Calibration	Two-point (pH 7.0 and pH 4.0 or pH 10.0)	Factory Calibrated	Not Required (factory calibrated)
Temperature Compensation	Yes	Yes	n/a
Operating Environment	0 – 50 °C / 32 – 122°F (Do not use or store outside of this temperature range), IP68 water and dust ingress rated		
Power Source	2 x AAA Alkaline Batteries		
Certifications	CE, FCC, IC, UKCA. Contains Bluetooth Module IC: 8017A-MDBT50Q, FCC ID: SH6MDBT50Q		
Signal Range	Indoor / Urban: 10 meters / 33 feet Outdoor: 10 meters / 33 feet		
Radio Signals	Bluetooth: 5 (Low Energy)		
System Requirements (Edenic)	Android (8.0 or later) or iOS (12 or later)		

8.2 Firmware Update

The Bluelab OnePen[™] can receive firmware updates via Edenic. To update to the latest firmware the OnePen[™] must be paired to Edenic. Steps to update firmware.

- 1. Open Edenic on a mobile device with an internet connection.
- 2. If already paired with Edenic select the OnePen[™] from the Device Index, if not add the OnePen[™] via the add devices button in the app.
- 3. A Firmware update message will be displayed if one is available.
- 4. If one is available select update icon
- 5. On the Firmware Updates screen select the "Update" button for it to download and then apply the firmware update to your OnePen[™].

IMPORTANT: During firmware update <u>**do not**</u> turn off either device.

To manually check for a firmware update, follow these steps:

- 1. Open Edenic on a mobile device with an internet connection.
- 2. If already paired with Edenic select the OnePen[™] from the Device Index.
- 3. Select the "cog" icon to navigate to Settings
- 4. Select the Firmware Updates tab
- 5. On loading it will automatically check for an update, otherwise select "Check for updates". Both the current firmware on the OnePen[™] and available firmware will be displayed on this screen.
- 6. If an update is available select the "Update" button for it to download and then apply the firmware update to your OnePen[™].

IMPORTANT: During firmware update <u>**do not**</u> turn off either device.

9.0 Accessories & Warranty

9.1 OnePen[™] Probe replacement

OnePen[™] Replacement Probes do not last forever.

They age through normal use and will eventually fail to calibrate.

To get the most life out of your OnePen[™] probe, please read the instructions provided with it.

9.2 pH Probe KCl Storage Solution

The best solution to store and hydrate your Bluelab pH products. Bluelab pH Probe KCl Storage Solution increases response time and maximizes the life of Bluelab pH probes. Use the KCl solution monthly to hydrate the pH probe after use.

9.3 Bluelab limited warranty



The Bluelab OnePen[™] comes with a 2-year limited written warranty (6 months for the OnePen[™] Replacement Probe). Proof of purchase required.

Bluelab Corporation Limited (Bluelab) provides a limited warranty under the following terms and conditions:

How Long Does Coverage Last?

Bluelab warrants the Bluelab OnePen[™] (Product) for a period of 24-months from date of purchase by original purchaser or consumer. Proof of purchase, to Bluelab 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 to 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, components, or parts that were 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). 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, INCIDENTIAL 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.

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SOME JURISDICTIONS (STATES OR COUNTRIES) DO NOT ALLOW EXCLUSION OR LIMITATION FOR INCIDENTIAL 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 product online at bluelab.com/product-registration

10. Get in touch



If you need assistance or advice - we're here to help you. Email: support@bluelab.com



Looking for specifications or technical advice? Visit us online at bluelab.com, instagram.com/bluelab_official or facebook.com/bluelabofficial



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