



Replacement Electrode Warranty Card

Model	Part Number	Ideal Salinity @ 25°C	Domestic Installation	Commercial Installation
PLECO-R	55544	5600 ppm	1 Year	No Warranty
PL25-R	55541	3000 ppm	2 Years	No Warranty
PL35-R	55542	3000 ppm	2 Years	No Warranty
* PL45-R	55543	3000 ppm	2 Years	1 Year

** For PL HYBRID models PL-LT and PL-COMM use PL45-R electrodes*

Proof of purchase in the form of original purchase receipt must be provided to claim warranty. Always ensure electrodes are cleaned as per the instructions in the owner's manual before submitting to Poolpower for warranty inspection, even if the electrode appears to be clean visually.

Terms and Conditions of Warranty

- a) Proof of purchase in the form of original purchase receipt should be provided to claim warranty. Where proof of purchase cannot be provided it will be assumed that the warranty period begins at the original date of manufacture.
- b) Removal or alteration to factory markings such as serial numbers or date of manufacture may void warranty.
- c) Products replaced under warranty do not carry a new warranty. The warranty period begins from the date of purchase of the original product, or date of manufacture where proof of purchase cannot be provided.
- d) Freight charges are the responsibility of the end user.
- e) Under no circumstances shall the manufacturer be liable for incidental or consequential damages, inconveniences or expenses in connection with the removal, installation or replacement of equipment.
- f) Under no circumstances shall the manufacturer be liable for damage caused to persons or property as a result of the use of this equipment.
- g) Use with bore water may void warranty.
- h) Warranty extending beyond 1 year is not transferable.
- i) Use of domestic models in commercial or semi-commercial application may void warranty. Domestic warranty applies only to equipment used on domestic pools and spas.

The following situations may void warranty

- Incorrect installation or misuse
- Excessive calcification or failure to clean the electrode regularly where required, and as specified in the owner's manual
- Water in excess of 40°C (113°F) passing through the cell
- Water pressure exceeding 350 kpa (50 psi)
- Use for a purpose other than described in the owner's manual
- Operation at salt levels more than 1000 ppm higher or lower than the recommended salt level
- Damage due to frozen water in the cell housing
- Operating on a pool volume larger than the maximum specified for a tropical climate in sales literature

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FAULTY ELECTRODE DIAGNOSIS

Diagnostic messages shown on the display during normal operation may be triggered due to several reasons, including a faulty electrode, an electrode that requires cleaning, an inappropriate salt level or extreme water temperatures. These messages are as follows:

CHECK SALT – indicates electrode current is low, and the system is not able to produce 100% of the rated chlorine output. This may be due to several factors such as cold water, low salt level, an electrode that requires cleaning, or a faulty or worn electrode.

CHECK SALT (OFF) – indicates electrode current is critically low, and the system cannot produce chlorine. This usually indicates a very low salt level, an electrode that requires cleaning, or a faulty or worn electrode.

HIGH SALT – This is a warning only, and the system is operating normally. This message can appear if the salt level is too high, or if the water flowing through the cell is warmer than usual. For example this message may appear while a gas heater is operating, as the chlorine cell is located on the outlet side of the heater. This is generally not an indication of a faulty electrode, however it may appear if excessive salt has been added to the water to compensate for a worn electrode.

HIGH SALT (OFF) – is an indication that the electrode current exceeded the maximum allowed, and output to the cell has been turned off in order to protect the power supply. This is usually due to a very high salt levels, or a combination of high salt levels and warm water. In rare cases may indicate a damaged cell lead or a short circuit in the electrode.

If you believe your electrode may be faulty, avoid any unnecessary cost and inconvenience by checking a few things before replacing it or submitting for a warranty claim.

1. Clean the electrode in a diluted hydrochloric acid solution as per instructions in the owner's manual, and remove any loose debris from the electrode plates. This should be done even if the electrode appears to be clean, as there may be a translucent scale layer that is very difficult to see.
2. Reinstall the electrode in the cell housing, and ensure flow control valves are set for pool filtration.
3. Check that the salt level in the water is at or near the recommended level.
4. Check the water temperature. The recommended salt level assumes an average water temperature of 25°C. Colder water will require a slightly higher salt level to achieve 100% chlorine output, for example at 20°C the ideal salt level is approximately +500ppm higher.
5. If you have a Pool Lab ASP connected, turn off power to the system and disconnect the ASP cable from the socket at the bottom panel of the Pool Lab Chlorinator. Turn power back ON.
(This will the chlorine output to be set manually for the purpose of testing)
6. Set your Pool Lab Chlorinator to manual ON mode (mode button), and ensure that output is set to 100% (press the UP button to change the output setting, and press VIEW to save the setting)
7. Press and hold the BACK button until the DIAGNOSTIC VIEW appears.
8. Take note of the VOLTS and AMPS shown. The AMPS may cycle on and off to regulate the chlorine output, therefore you may need to wait for up to 3 minutes. Record the highest stable value.
9. Press and hold the VIEW button until the +/- symbol changes to "R". This will force a polarity reversal.
10. Repeat step 8 and record the highest stable value for the opposite polarity.
11. Compare the AMPS with values in the table below. The AMPS should be similar for both + and – electrode polarity. If the difference is greater than 10% this may indicate a worn or faulty electrode.
Colder water and lower salt levels will result in lower AMPS
Warmer water and higher salt levels will result in higher AMPS

Model	Volts	Low Salt (CELL OFF) Threshold	Low Salt (WARNING) Threshold	Ideal Current Range	High Salt (WARNING) Threshold	High Salt (CELL OFF) Threshold
PL25 / ECO	23 – 25 V	< 2.08 A	< 3.125 A	4.0 – 5.0 A	> 6.0 A	> 8.4 A
PL35	23 – 25 V	< 2.91 A	< 4.375 A	6.0 - 7.5 A	> 9.0 A	> 13.4 A
PL45	23 – 25 V	< 3.75 A	< 5.625 A	8.0 – 10.0 A	> 12.0 A	> 13.4 A

REGULAR CELL MAINTENANCE

Where calcium hardness is below approximately 200ppm, the mineral content is low and the water is correctly balanced, little or no maintenance to the cell is normally required. Automatic reversal of the electrode polarity will be sufficient to dissolve calcium scale formed during chlorine production.

Periodic inspection is however crucial to ensure the electrode is free from any calcium scale buildup and/or debris.

- If calcium scale has formed it must be removed by cleaning in an acid solution as per instructions in the owner's manual.
- Regular buildup of calcium scale may indicate a water balance problem. Where calcium hardness is higher than 200ppm, always use the Langelier saturation index to calculate the ideal pH level for your water.
- Loose debris can usually be removed by simply dunking the lower part of the electrode rapidly up and down in a bucket of water, taking care not to submerge the electrode cap and socket.
- Debris such as small seed pods caught between the electrode plates can be more difficult to remove. Avoid using any metallic objects that may damage the electrode plating. A long zip tie can be fashioned into a useful tool by cutting a small notch near the end to create a hook shape for picking these out.
- Regular buildup of debris may indicate a filtration problem.
- Other factors that may increase or contribute to calcium scale formation are:
High water temperatures, high mineral content, low water velocity, poor water balance, excessive salt or a worn electrode.
- Never add chemicals directly to the pool skimmer as this can cause rapid calcification of the electrode and void the warranty.

Higher than recommended calcium hardness is sometimes unavoidable due to either your water supply, or calcium leeching from your pool surfaces. In this situation you should always use the Langelier Index of Saturation to determine the ideal pH level for your water. With high calcium hardness in the water the ideal pH level will be lower than what is usually recommended for your pool. This is generally acceptable so long as the ideal pH level is not lower than 7.2, in which case you may need to seek professional advice on your options.

Try our free online Langelier Saturation Index calculator at:
<http://poollab.poolpower.com.au/langelier>

***For measuring your salt level and water temperature
Poolpower recommends using***

Pool Lab PL103 – SALT METER
Temperature Compensated Salt Meter and Thermometer



ELECTRODE INSPECTION AND CLEANING

- Turn off power to chlorinator and filtration pumps.
- If the chlorinator cell housing is below the water level, close valves on both the inlet and return side of the filtration system.
- Unplug the cell lead, and loosen the large cell nut at the top of the cell housing.
- Remove the electrode from the cell housing by lifting straight up.
Note: If the cell housing is above water level there may be a vacuum in the cell housing that can make the electrode difficult to remove. This can often be relieved by opening the air relief valve on the top of cartridge filters, or by pressing down on the multi-port valve handle of sand filters.
- Place the electrode upright in a 10 Litre (or greater) bucket tall enough so that it can be filled to just above the electrode plate bundle.
- In a well ventilated area, away from surfaces that may be damaged by an acid spill half fill the bucket with plain tap or tank water – do not use pool water.
- **Always wear appropriate Gloves, Safety goggles, boots, and respirator when handling hydrochloric acid.**
- Add approximately 1 litre of 33% hydrochloric acid - (or 2 liters of 16%). Take care to avoid acid splashing on the electrical connector (cover with plastic wrap if necessary)
- Continue filling the bucket with water until the electrode plate bundle is just submerged. Do not submerge the electrode cap or electrical connector.
- The acid will react with any calcium scale in the electrode bundle, and this can be observed by gassing and bubbles of carbon dioxide coming from the electrode bundle. This process can take up to 15 minutes to complete.
- If the reaction stops and calcium scale is still visible you may need to repeat the process until the all calcium scale has been removed from the electrode
- Once cleaned, rinse the electrode bundle with fresh water and ensure it is clear from any debris. Inspect between the electrode plates for small seed pods etc. A long zip tie with a notch cut near the end can be used as a hook to remove these. Avoid using any metallic tools as this may damage the electrode coating.
- Re-install the electrode into the cell housing and replace the large cell nut. Tighten hand tight only, and reconnect the cell lead.
- Open any valves that were closed for this procedure.
- Turn power back on to the chlorinator and filtration pumps.



If the time taken to remove all calcium scale from the electrode is longer than 15 minutes, then the electrode may require more frequent cleaning. Have your water balance checked, in particular for the Langelier Saturation Index (LSI), this should be between -0.2 to +0.2. If the LSI is greater than +0.2, then you may need to reduce the pH level in the water to reduce the potential for scale formation.