

# Leak Detector LD229

## Operation Manual (1-3)



GL Sciences Leak Detector is a portable, highly sensitive instrument designed to detect helium gas leaks in gas chromatographs and GC accessories such as purge & trap systems. The detector indicates leaks through a dual system that consists of an indicating LCD and an audible alarm. The detector is more reliable and convenient to use than soap solutions and is capable of detecting even the smallest, hard to reach gas leaks.

### 1. Caution

For safety reasons, GL Sciences Leak Detector should not be used under the following conditions.

- Do not open the body.
- Do not use the detector where there is a risk of fire, explosion or large flammable gas leaks.
- Do not use the detector in an area where there is insufficient ventilation to safely detect small leaks of flammable gases.
- Do not use the detector to detect corrosive gases.
- Do not use the detector in environments that are contaminated with dust or combustible fumes.
- The sensitivity of the detector comes to be extremely worse when the surrounding contains the leaking gas. At the top of the body, there is a fresh air inlet. Do not block the inlet.
- The detector should not be exposed to shock.
- Do not use the detector outside of its specified temperature range.
- Do not use the detector in a wet environment or come into contact with any solvents.
- Do not use the detector to detect gas leak while recharging the batteries.
- Do not use any devices other than the one supplied with the detector for recharge of the batteries.
- The socket-outlet shall be installed near the equipment and shall be easily accessible to the disconnecting plug of adapter.
- If the battery lifetime appears to be unusually short, the batteries may require replacement. Please contact GL Sciences Inc.

### 2. Operation Guide

- The detector should only be used for gases. Never allow liquids or particles to enter the probe under any circumstances.
- The sample probe must be placed near the suspected gas leak in order to be detected.
- The sample probe must remain open during leak detection. Do not place the probe tip against the connection or fitting being leak checked.
- During leak detection, the battery should not be recharged and the detector should not be subjected to vibration.
- The detector gives a positive response to skin vapor or to fittings that were recently leak checked with soap solution.
- Periodically replace the Inlet Filter attached at the inlet of the sample probe.
- Do not use the detector for 30 minutes to stabilize its temperature after recharging.
- When removing or attaching the recharger to the detector, make sure that the power of the detector is OFF.

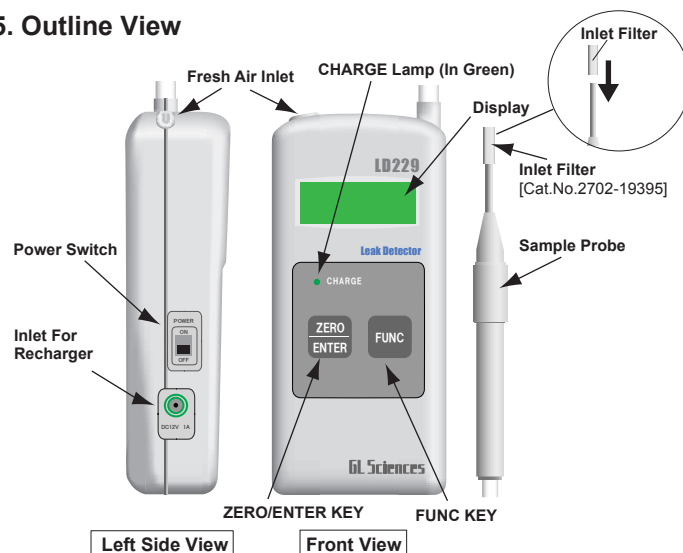
### 3. Power Supply

GL Sciences Leak Detector is powered by rechargeable nickel hydride batteries. When the detector is shipped from the factory, batteries are not fully charged. When the battery mark is blinking or "Low Battery Error" is indicated, the batteries are low and must be recharged with the attached recharger. When fully charged, the batteries will provide approx. 5 hours of continuous service. It takes approx. 3 hours to fully recharge the batteries. When starting the recharging, the CHARGE lamp will blink. When the recharging is completed, the lamp will light. After the completion of recharging, make sure to disconnect the recharger from the LD229. Do not use the LD229 with the recharger connected. This will deteriorate the battery fast and make the LD229 unstable.

### 4. Battery

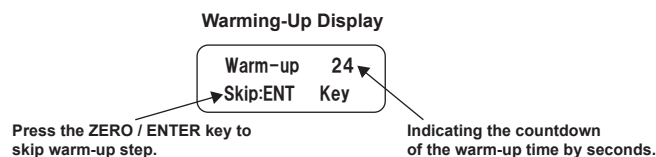
The replacement of a battery must be serviced only by qualified service personnel. Contact our agent to replace a battery.

### 5. Outline View

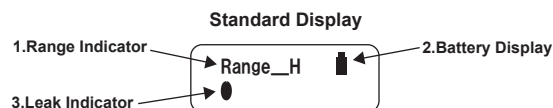


### 6. Operation

- When the detector is shipped from the factory, the batteries are not fully charged. Recharge the battery prior to use. Wait for 30 min. after recharging to stabilize its temperature. Turn the power switch to the ON position. Allow the detector to warm up for approx. 25 seconds. During the period of the time, the buzzer may sound. Press the ZERO / ENTER key to skip it.

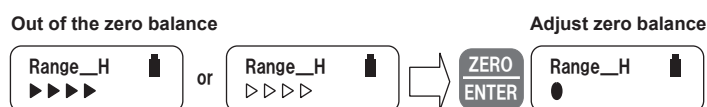


- When LCD shows the following display (Standard Display), press the ZERO/ENTER key. Now the detector is ready to use. When the battery mark is blinking, the batteries must be recharged.



- Range indicator  
Range\_H :High sensitivity  
Range\_L :Low sensitivity
- Battery Mark  
lighting :The batteries are charged enough  
blinking :The batteries need to be charged with the attached recharger.
- Leak indicator  
● :Zero Leak Mark :Indicates there are no gas leaks  
▶ :Gas Leak Mark :Indicates the gas leak, which has the □ □ □ higher thermal conductivity than air.  
▷ :Gas Leak Mark :Indicates the gas leak which has the lower thermal conductivity than air.

- will be blinking when the detector becomes stable. When the leak indicator is displayed without leakage, press ZERO / ENTER key to adjust the zero balance.



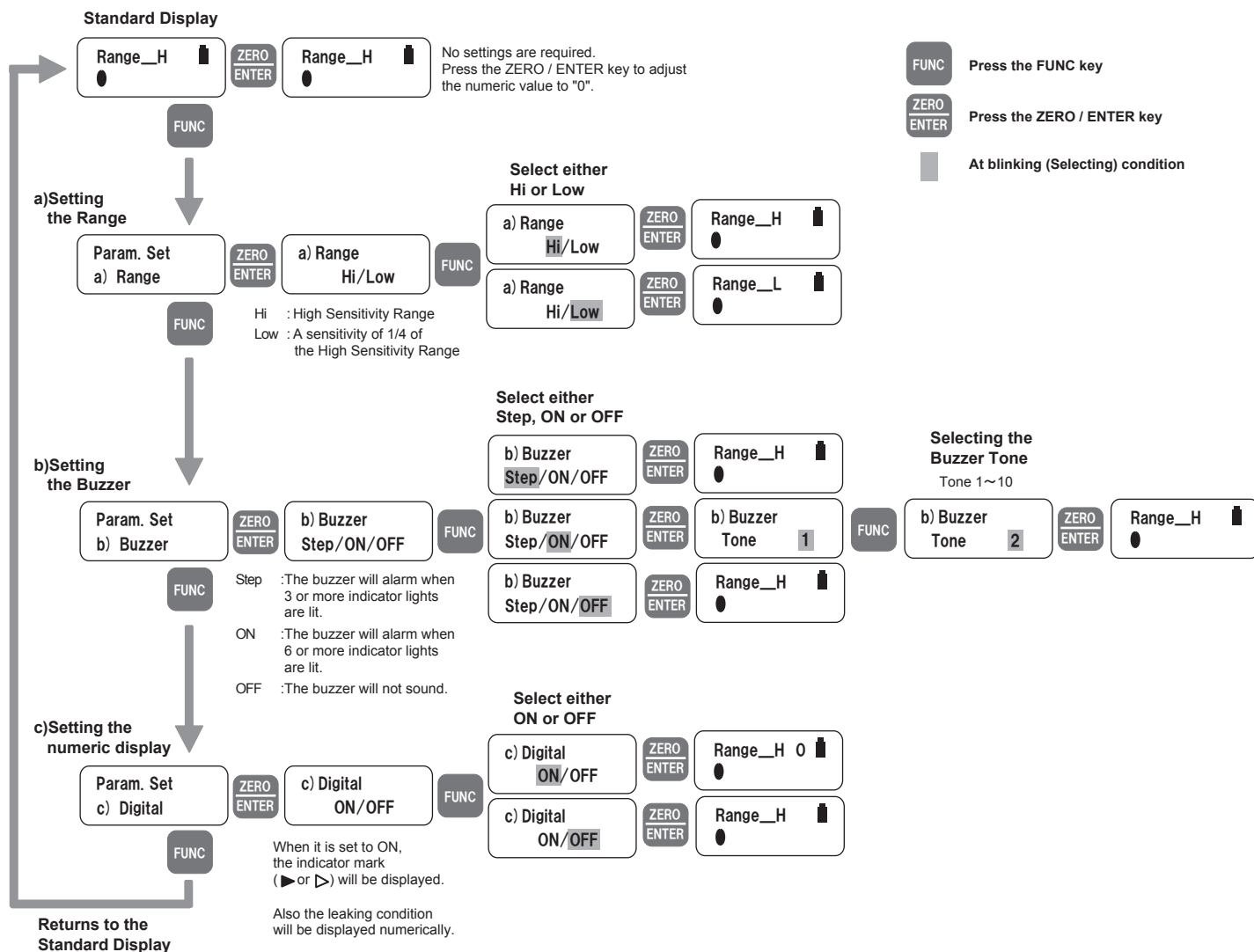
- Place the sample probe tip near the gas connection to leak checked. Wait approx. three seconds and look for one of the above displays on the LCD. One Gas Leak Mark indicates there may or may not be gas leaks. Two or more Gas Leak Marks indicate there is a gas leak. When the buzzer function, ON or STEP is selected, the audible alarm sounds according to the TONE level selected.

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## 7.Function Setting

Please set the range, buzzer and the numeric display as follows:



## Specifications

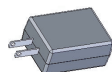
**Detector :** Thermistor actuated thermal conductivity cell  
**Thermal conductivity of gases :**  
 Lower than  $48 \times 10^{-6}$  cal/cm.s.°C (at 0°C, 1 atm)  
 or higher than  $68 \times 10^{-6}$  cal/cm.s.°C (at 0°C, 1 atm)  
**Sensitivity\* :** Helium 0.01ml/min. in atmosphere  
**Battery :** Rechargeable Ni-MH batteries  
**Consecutive operation :** 6.5 hours (with new, fully charged batteries)  
**Display :** LCD (12 X 2)  
**Recharger :** AC100 - 240V 50 - 60Hz 0.3A

**Operating temperature range :** 10 to 35 deg.C.  
**Indoor use**  
**Altitude :** up to 2000m  
**Humidity :** 85% maximum (no condensation)  
**Supply voltage fluctuation :** ± 10%  
**Overvoltage category :** category II  
**Pollution degree :** degree 2  
**Overall size :** 65mm(W) X 37mm(D) X 143mm(H)  
**Net weight :** 350grams

## Spare parts



Inlet Filter  
Cat.No. 2702-19395



Switch Mode Power Supply, LD229 GL STD PLUG  
Cat.No. 2702-19497



Switch Mode Power Supply, LD229 EU STD PLUG  
Cat.No. 2702-19499

\*The sensitivity should be dependent on the difference between the thermal conductivities of gas and air, and a large difference results in a high sensitivity. Also, the kinds of gas and humidity should influence the sensitivity.

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