

# Helium leak detector



## Instruction for use

**PRODUCT REFERENCE:**

Helium Leak Detector, with USB charger

C-HLD



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## 1. Introduction

This portable, highly sensitive helium leak detector for TD–GC systems provides the accurate, sensitive and rapid detection of carrier gas leaks that is essential for TD–GC troubleshooting.

Through a dual system consisting of an LCD display and an audible alarm, this qualitative device clearly indicates gas leaks, and is powered by rechargeable batteries for ease of portability.

The detector is suitable for analytical equipment that utilizes helium as a carrier gas and is capable of detecting gases that have a different thermal conductivity than air.

### 1.1 Important safety warnings

Make sure you follow the precautionary notices presented in this manual. Safety and other special notices appear in boxes and include the following.

**WARNING** This is the general warning safety symbol and safety alert word to prevent actions that could cause personal injury.

**CAUTION** Highlights actions that may cause product damage. We use it to highlight information necessary to prevent damage to hardware, software, invalid test results, or to information that is critical for optimal system performance.

**NOTES** Emphasizes important information about a specific task.

### 1.2 Warnings

**WARNING** This detector is not explosion-proof equipment. Do not use the detector in areas at risk of fire, explosion or large flammable gas leaks.

**WARNING** The device is not a safety guard against hazardous or flammable gases.

**WARNING** Do not open the detector's body except when replacing a battery.

**WARNING** Do not use the supplied recharge micro USB cable for other equipment.

**CAUTION** When removing or attaching the recharger to the detector, ensure the power of the detector is OFF.

### 1.3 Operational notices

**WARNING** **DO NOT** use the detector to detect corrosive gases.

**WARNING** **DO NOT** use the detector in environments that are contaminated with dust or combustible fumes.

**WARNING** **DO NOT** use the detector outside of the specified temperature range (10 to 40°C)

**WARNING** **DO NOT** expose the detector to shock.

**WARNING** Ensure the device is in a stable condition during operation.

**WARNING** **DO NOT** aspirate liquid samples. The detector has a sample gas line and reference gas line; both have filters fitted but these are not effective for liquid samples.

**CAUTION** When using the detector for flammable gas leakages, make sure there is sufficient ventilation in the room.

**CAUTION** **DO NOT** block the tip of the sample probe and reference port. Please take extra care not to press the sample probe against the object.

**NOTES** The sensitivity of the detector decreases when the surrounding contains the leaking gas.

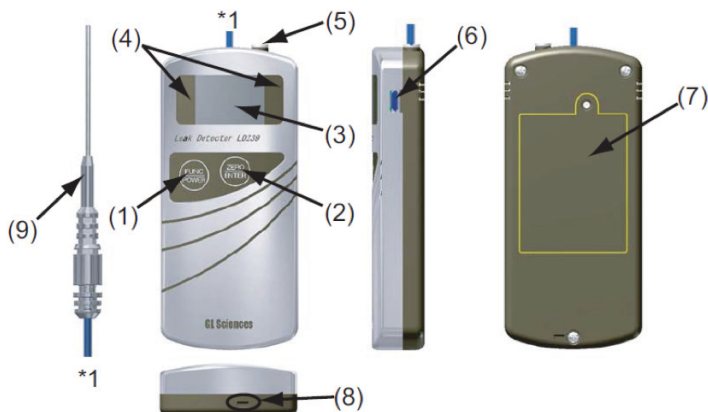
**NOTES** Wind can affect the sensitivity of the detector, so please be careful when using outdoors.

**NOTES** The detector is not a quantitative device and therefore does not require calibration. It was designed to detect leaks associated with laboratory equipment.

**NOTES** Decrease of sensitivity can be a result of filter clogging. If this occurs, please replace the filter on the sample or reference line. (Refer to instruction below).

**NOTES** The detector gives a positive response to water vapour. Skin vapour or soapy water can therefore incorrectly be detected as gas leakage.

## 2. Components



- [1] FUNC/POWER key**  
Turning the power ON/OFF and selecting setting contents.
- [2] ZERO/ENTER key**  
Adjusting zero balance and entering setting contents.
- [3] LCD display**
- [4] LED indicators**  
Indicating leak level and battery level
- [5] Reference Port**  
Inlet to aspirate ambient air
- [6] Charging terminal**  
Connecting the charging terminal to a PC with supplied micro USB charging cable to charge
- [7] Battery Cover**
- [8] Strap eyelet**  
For attaching the supplied strap
- [9] Sampling probe (with internal filter)**  
For aspirating sample gas

### 3. Preparation

Prior to first use, or before using the product following an extended period of disuse, ensure the device battery is fully charged.

**WARNING** **DO NOT** turn on the power of the detector while the battery is being recharged.

After recharging, allow the detector 30 minutes to stabilize its temperature before use. The charging terminal cap should be attached, except for when charging.

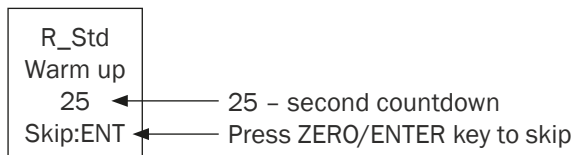
**NOTES** The detector may become warm during charging. This is normal and does not indicate a malfunction.

**NOTES** Use of the LED in addition to LCD display will deplete the battery.

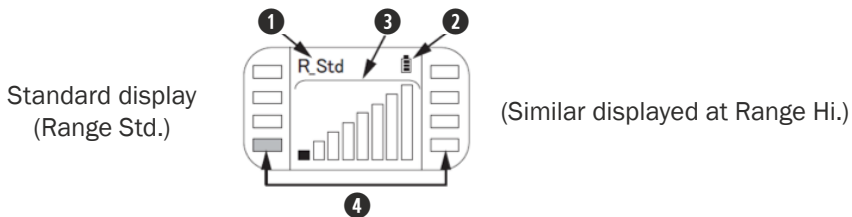
### 4. Detector operation

- [1] To power on, press the FUNC/POWER key for approximately 1 second. The detector takes approximately 25 seconds to warm up at standard range (Std) and 90 seconds at high range (Hi).

Warming-up display  
(Range Std.)



[2] After warm-up, the standard display is shown.



**1 Range**

R\_Std: Standard Sensitivity Range

R\_Hi: High Sensitivity Range (10 times more sensitive than standard range)

**2 Battery indicator**

Battery indicator shows the battery charge levels in 3 levels:

Battery level 3: Full charge (more than 50% is left)

Battery level 2: Low charge (about 20–30% left)

Battery level 1: Very low charge, charging is required (battery survival time is about 10 min.)

**3 Leak indicator (LCD display)**

When a leak is detected, the detector displays bar graphs. The number of bar graphs indicated the level of gas leak. (Max. 8 high intensity of bar graphs).

ZERO point display: Blinking bar, 1st to the left.

- Leak display:
- Indicates the gas leak, which has higher thermal conductivity than air
  - Indicates the gas leak, which has lower thermal conductivity than air

**4 Leak indicator (LED indicator)**

When a gas leak is detected, the LED lights from the bottom left to top and then from the bottom right to top (maximum 8 blocks).

The LED can be used in addition to the LCD display. This can be selected by setting parameters.

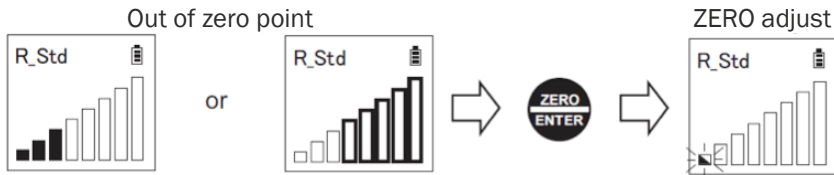
ZERO point display: The green or red LED blinks when the detector becomes stable near Zero point.

Leak display: Red light: Indicates the gas leak, which has higher thermal conductivity than air

Green light: Indicates the gas leak, which has lower thermal conductivity than air

- [3]** First, check the stability at zero point.

■ & □ on the left will be blinking alternately when the detector becomes stable. When the leak indicator is displayed without leakage, press ZERO/ENTER key to adjust the zero balance. Under conditions such as fluctuation of temperature or humidity, the detector needs zero point adjustment for both the LED and LCD display.



- [4]** Place the sample probe tip near the gas connection to leak check.

One gas leak mark indicates there may or may not be gas leaks, especially on a high range.

Two or more gas leak marks indicate there is a gas leak.

More than three gas leak marks are indicated, and the audible alarm sounds when the buzzer function is ON.

- [5]** Turn off the detector after use.

Auto Power Off function ON: The detector is automatically turned off 10min. after use.

Auto Power Off function OFF: Hold down FUNC/POWER key for 3 seconds to turn the power OFF.

## 5. Storage

The detector should be kept in a clean/dry environment.



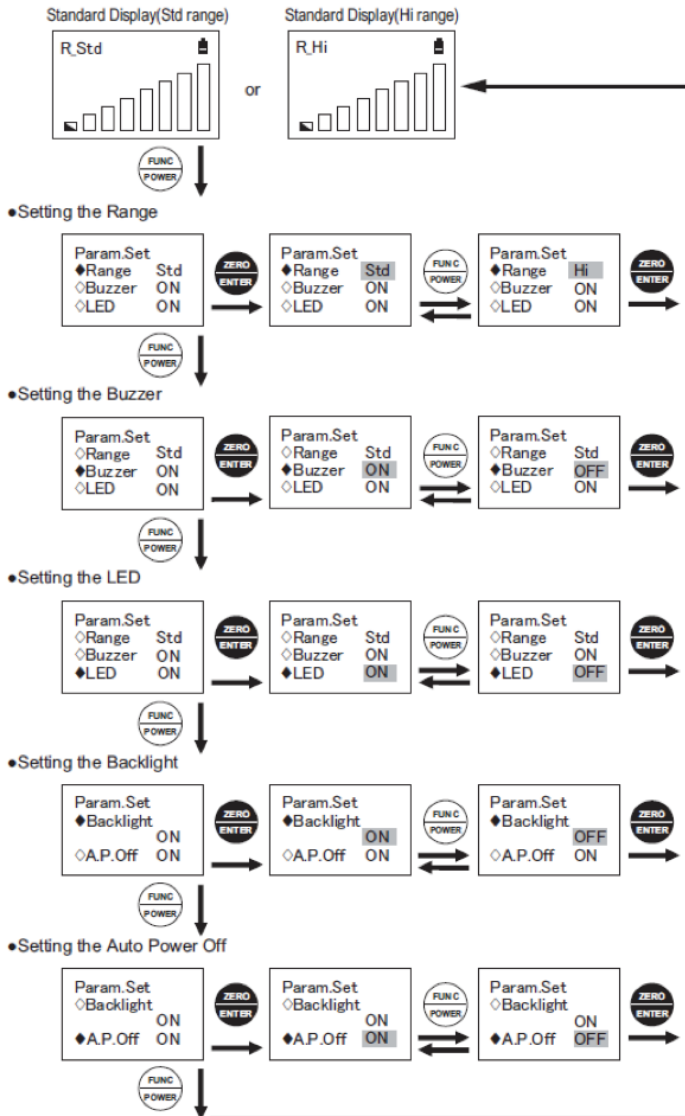
## 6. Setting parameters

### 6.1 Parameter setting items and contents

Parameter setting item	Content
Range	Sets range Std: Standard sensitivity range Hi: High sensitivity range
Buzzer	Sets the buzzer to alarm ON: Use (More than 3 gas leak marks) OFF: Not use
LED	Sets LED in combination with LCD display ON: Use OFF: Not use
Backlight	Sets LCD backlight ON: Use OFF: Not use
A.P .Off	Sets auto power off ON: Use OFF: Not use

## 6.2 Flow diagram of parameter settings

◻ : At blinking (Selecting) condition



## 7. Specifications

### Part number

- C-HLD: Helium leak detector, with USB charger

### Detector

- Thermistor-actuated thermal conductivity cell
- Thermal conductivity of gases
- He, CO<sub>2</sub>, Ar, Ne, etc.
- Not available under flammable or corrosive atmosphere

### Sensitivity

Selectable from 2 range:

- Standard Range: Helium 0.005 mL/min in atm.
- High Range: Helium 0.0005 mL/min in atm.

### Display

- Leakage display: LCD or LED
- Parameter setting display: LCD

### Electrical rating

- Battery: Built-in rechargeable Li-ion battery
- Run time: Approx. 5 hours
- Charging time: Max. 2.5 hours

### Operating temperature range

- 10°C to 40°C (non-condensing)

### Dimensions

- Width: 50 mm
- Height: 19.5 mm
- Length: 111 mm

### Weight

- Approx. 95 g

## 8. Contact details

For technical support, please contact your supplier in the first instance. If they are unable to resolve your query, please contact Markes International's service department:

**E:** [support@markes.com](mailto:support@markes.com)

**T:** +44 (0)1443 230935

**W:** [www.markes.com](http://www.markes.com)

