

# Inframate S Infrared Leak Detector User Manual



## **Warning!**

Please read and understand this manual thoroughly before operation and maintenance.

Please do NOT disassemble the detector by yourself.

If you have any technical questions, please feel free to contact us.

1. Please ONLY install clean filter before detection or it may damage the sensor.
2. Please charge the detector promptly to ensure sufficient battery level for the detection\*.
3. Do NOT use the probe to touch or detect any charged objects.
4. Do not let water enter the air inlet of the probe.
5. Please protect your eyes and skin while using the UV LED during detection.

Never look directly to the UV ray.

6. Please avoid breathing the refrigerant vapors. Inhalation of high concentration refrigerant is harmful and may cause unconsciousness or death.
7. The battery is hazardous. Be extra careful when using it. Never dispose of used batteries in regular trash can (but in the battery recycle box) to avoid danger or harm to environment.

\* The detector has a built-in rechargeable lithium battery, please do not change to other battery types.

# Overview

The Inframate series are hand-held infrared refrigerant leak detectors that are independently developed by Elitech® based on infrared detection principle. Compared with traditional corona or heated diode detectors, this series feature a sensor which has higher accuracy and much longer service life, detects more types of refrigerants and avoids damage by high concentration of refrigerants. Also with exclusive ergonomic design and innovative large TFT LCD display screen, the detector optimizes the user experience and presents the detection results more intuitively and diversely.



1. Flexible Probe	5. USB Port (Type-C)
2. UV LED	6. Display Screen
3. Filter Components	7. Buttons
4. Headphone Jack	8. Buzzer

# Specifications

Sensor life	10 years	Charging Time	Approx. 4h
Sensitivity	Maximum 4g/yr	Weight	450g (15.9oz)
Sensor Principle	Infrared (IR) absorption spectroscopy		
Alarm Mode	Audible and visual alarm; TFT indication		
Auto OFF	After 10 minutes of inactivity		
Battery	2 x 18650 lithium battery (see Battery Replacement Diagram)		
Working Hour	8h continuous use on a single charge		
Storage Temperature	-20°C~60°C(-4°F~140°F)		
Operating Environment	Temperature: -10°C~ 52°C; Humidity: Maximum 90%RH (non-condensing)		
Dimensions	201 x 72 x 35mm (7.9" x 2.8" x 1.4")		
Compliance	CE, EN14624:2012, RoHS, SAE_J1627, SAE_J2791, SAE_J2913		
Detectable Gases	CFCs, HFCs, HCFC Blends and HFO-1234YF		
Charging Voltage/Current	DC 5V, 1A		



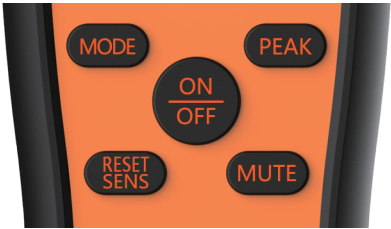
Battery Replacement Diagram

# Functions

Function \ Model	Inframate S
Leak indication	✓
Sensitivity levels	✓
Buzzer ON/OFF	✓
Peak function	✓
UV LED	✓

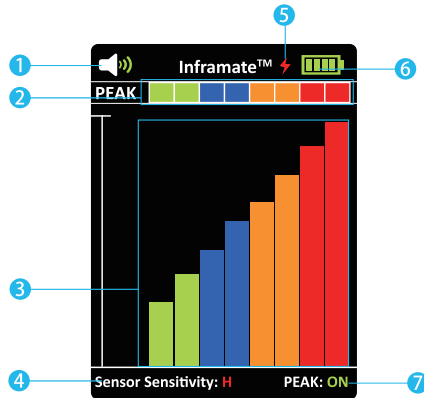
## Button & Display

### Button Functions



- ON / OFF** : Press and hold for 2 seconds to turn on the detector; press again to turn it off.
- RESET SENS** : Press to select preferred sensitivity level among Low, Medium and High.
- MUTE** : Press to turn on/off the buzzer.
- PEAK** : Press and release to mark or unmark the maximum leak. If unmarked, the peak value will be cleared.
- MODE** : Release soon

## Display



- 1 Buzzer:** Indicates buzzer status. Red icon: disabled; Green icon: enabled.
- 2 Peak value:** Indicates the maximum detected leak.  
*Note: PEAK function must be ON or it will not show peak value.*
- 3 Leak value:** Indicates the current detected leak. Higher leak concentration, higher the bars.
- 4 Sensitivity level:** Displays current sensitivity level. 3 levels are available for different needs.  
*H: high sensitivity; M: medium sensitivity; L: low sensitivity.*
- 5** Battery charging status.
- 6 Battery level:** Displays current battery level.  
Green: Full battery; Yellow: Low battery; Red: Extreme-low battery, please charge ASAP.
- 7 PEAK ON/OFF:** Indicates PEAK function status. The display shows ON or OFF to indicate the peak function is enabled or disabled (To turn off PEAK will clear all recorded peak values).

### Others

**Alert:** If the sensor is faulty, the display will pop up alert info: “Error: Sensor” .

**Warm-up countdown:** Please wait for about 30 seconds after the detector is turned on until the warm-up finishes.

# Operation

## **Warning!**

- ◆ Please keep moving the detector during the detection. As Inframate series are designed to detect the relative concentration of gases, if the detected concentration remains unchanged in the stationary environment, it will not be able to pinpoint the leakages.
- ◆ Please ensure the system pressure is at least above 340Kpa (50psi) before detection as many refrigerant leaks can't be detected at low pressure.
- ◆ Do not place the detector close to organic solvents, detergents or high voltage power supplies. Please wipe up the detectors with a clean towel.
- ◆ Before start, please confirm the battery is sufficient for this detection (it normally takes about 30 minutes for one detection).

## Steps

1. Turn on the detector. Wait for the warm-up countdown in order to reach the optimal detection status. It takes about 30 seconds before it enters the main interface.
2. Press button to adjust to your preferred sensitivity level (default level is High).
3. Locate places that refrigerant leaks are most likely to occur, such as:
  - ◆ Joints in refrigerant lines
  - ◆ Points that have changes in cross section
  - ◆ Points that have changes in vertical section
  - ◆ Visually trace the entire refrigerant system for all lines, hoses, fittings, couplings, service valves, etc. and signs of lubricant leak, damage and corrosion as the likely leak points.
4. Move the probe slowly (about 3ft/s or 75mm/s) at these suspicious places, move back and forth but no more than 0.25"/6mm away from the leak areas.

**Note:** A closer probe position and slower "sweeping" movement usually improves the possibility of finding a leak.

5. The buzzer and LCD display will indicate the detected leak at the same time:

Buzzer: The sound will increase in proportion to the leak intensity.

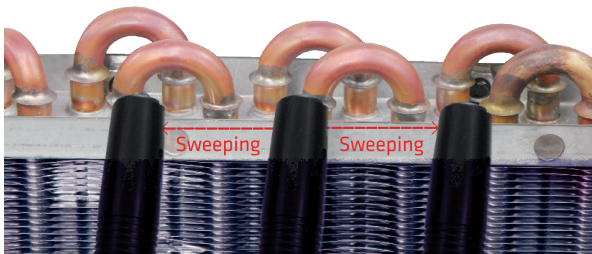
The faster the buzzer beeps, the higher the leak has been detected.

LCD display: The bar graph will increase from bottom to top in proportion to leak intensity.

The higher the bar graph rises, the higher the leak has been detected.

6. Follow the operations above to detect the entire refrigerant system and mark every leak that has been found.

See the illustration below for visualized detection method:



## Battery & Filter

### Battery Charging & Maintenance

#### **Warning!**

- ◆ Avoid complete discharging and frequent charging or it may affect battery life.
  - ◆ Do not disassemble the built-in rechargeable lithium battery.
  - ◆ If the detector will not be used for a long time, please charge it beforehand to prevent battery life reduction due to self-discharging. Do not store it for more than 6 months.
  - ◆ Use DC 5V/1A power adapter to charge the detector.
- Charging indicator in Orange: the battery is charging now;  
Charging indicator in Green: the battery is fully charged.

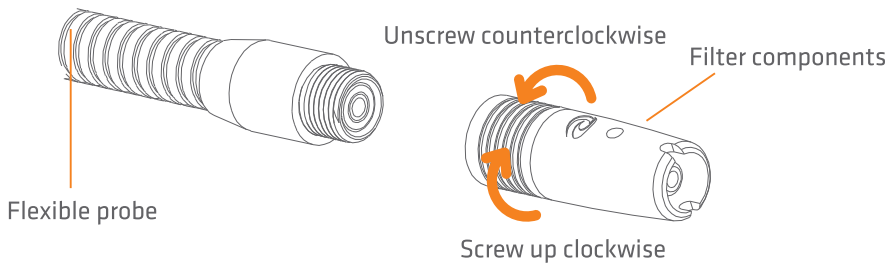


## Filter Replacement

The filter can block large particle contaminants and moisture to reduce false alarms caused by excessive humidity. Please replace the filter in time when it is seriously polluted (black and clogged).

Follow the steps below:

1. Unscrew the filter components counterclockwise.
2. Screw filter components clockwise.



# What's Included

Infrared Leak Detector	x 1
UV LED	x 1
User Manual	x 1
Plastic Case	x 1
Charging Cable	x 1
Filter Components	x 5

# Warranty Periods

One year since the date of original purchase.

**Elitech<sup>®</sup>**

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