Elitech®

Innovation Preceding All

Inframate D Infrared & Heated Dioded Refrigerant Leak Detector

⚠ Warning!

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

Please do NOT disassemble the detector by yourself.

Please ONLY install clean filter before detection or it may damages the sensor.

Do NOT using the probe to touch or detect any charged objects.

Do not let water enter the air inlet of the probe.

Please charge the detector promptly to ensure sufficient battery level for the detection*.

Please protect your eyes and skin while using the UV LED accessory during detection.

Never look directly to the UV ray.

Please avoid breathing the refrigerant vapors,or may cause unconsciousness or death.

When replacing the battery, ensure that the polarity of the battery is installed correctly, otherwise it will cause irreversible damage.

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 abvoid danger or harm to environment.

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

* The detector has a built-in two 18650 rechargeable lithium batteries, please do no change to other battery types.

Overview

Inframate D is a hand-held two-in-one leak detector that are independently developed by Elitech®. This new product combines infrared and heated diode sensor which can easily switch between two modes. 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. this new genreation product updated with two 18650 detachable lithium batteries, double the usage time. Also with exclusive ergonomic design and innovated large TFT LCD display screen, the detector optimizes the user experience and presents the detection results more intuitively and diversely.

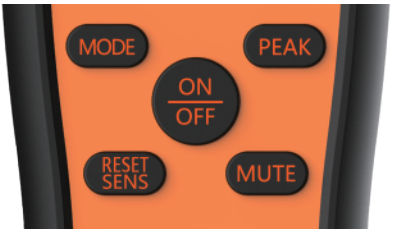
1. Flexible Probe	5. USB Port (Type-C)
2. UV LED	6. Display Screen
3. Filter Components	7. Buttons
4. Headphone Jack	8. Buzzer

Specifications

Sensor life	Infrared Sensor 10 years Heated Diode 2 years
Sensitivity	Infrared Sensor Max 4g/yr Heated Diode Mode Max 13g/yr
Sensor Principle	Infrared (IR) absorption spectroscopy And Heated Diode
Detectable Gases	CFCs, HFCs, HCFC Blends and HFO-1234YF
Alarm Mode	Audible and visual alarm; TFT indication
Auto OFF	After 10 minutes of inactivity
Working Hour	8h continuous use on a single charge
Operating Environment	Temperature: -10°C~ 52°C; Humidity: Maximum 90%RH (non-condensing)
Storage Temperature	-20°C~60°C(-4°F~140°F)
Certifications	CE, EN14624:2012, RoHS, SAE_J1627, SAE_J2791, SAE_J2913
Charging Voltage/Current	DC 5V， 1A
Charging Time	Approx 4h
Battery	2 x 18650 lithium battery (see Battery Replacement Diagram)
Dimensions	201 x 72 x 35mm (7.9″ x 2.8″ x 1.4″)
Weight	450g (15.9oz)

Button & Display

Button Functions



ON OFF : Press and hold for 2 seconds to turn on the detector; press again to turn it off.

REST SENS : **(Infrared Interface)** Press to select preferred sensitivity level.

Sensitivity Level: HIGH 4g/a

MEDIUM 7g/a

LOW 14g/a

(Heated Diode Interface) it programs the circuit to ignore the level of refrigerant

MUTE : Press to turn on/off the buzzer.

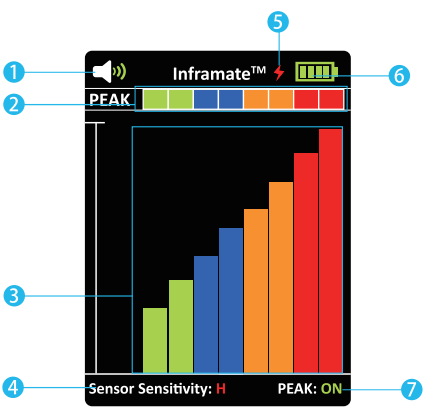
PEAK : **(Infrared Interface)** Press and release to mark or unmark the maximum leak. If unmarked, the peak value will be cleared.

(Heated Diode Interface) Press to record the numerical concentration of refrigerant leak.

MODE : Press to switch between infrared and heated diode modes.

Display

Infrared Interface



❶ **Buzzer:** Indicates buzzer status. Red icon: disabled; Green icon: enabled.

❷ **Peak value:** Indicates the maximum detected leakage.

Note: PEAK functions must be ON or it will not show peak value.

❸ **Leak value:** Indicates the current detected leakage. Higher leak concentration, higher the bars.

❹ **Sensitivity level:** Displays current sensitivity level. 3 levels are available for different needs.

H: high sensitivity; M: medium sensitivity; L: low sensitivity.

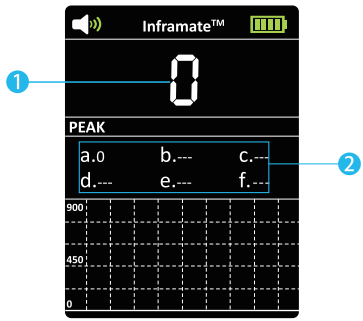
❺ Battery charging status.

❻ **Battery level:** Displays current battery level.

Green: Full battery; Yellow: Low battery; Red: Extreme-low battery, please charge ASAP.

❼ **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).

Heated Diode Interface



❶ Numerical refrigerant concentrations in current environment.

❷ Record the number of refrigerant concentrations.

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!

- Before start, please confirm the battery is sufficient for this detection (it normally takes about 30 minutes for one detection).
- Please ensure the system pressure is at least above 340Kpa (50psi) before detection as many refrigerant leaks can't be detected at low pressure.
- (Infrared Mode) Please keep moving the detector during the detection. As infrared sensor is 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.(Heated Diode Mode) Please move slowly during the detection.
- Do not place the detector close to organic solvents, detergents or high voltage power supplies. Please wipe up the detectors with a clean towel.

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. If the leakage area is uncertain, press the mode key to switch to the Heated Diode mode in the air clean place to find the suspected leakage area. When moving to the area containing refrigerant, the LCD screen value will change. Press the peak key to record the leakage value, which can store up to six groups of data. After the completion of the screening, the places with large leakage value shall be accurately searched.

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. When the suspected leakage area is found, it is recommended to switch to infrared sensor mode,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.

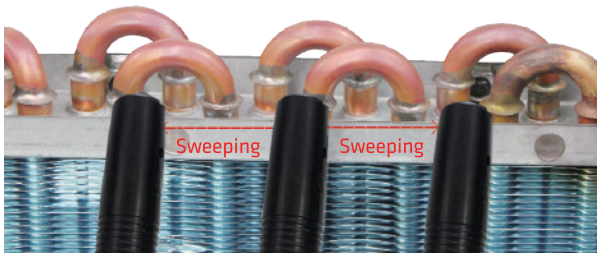
   The faster the buzzer beeps, the higher the leak has been detected.

   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 dissemble the built-in rechargeable lithium battery.
- If the detector will not be used for a long time, please pre-charge it 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;

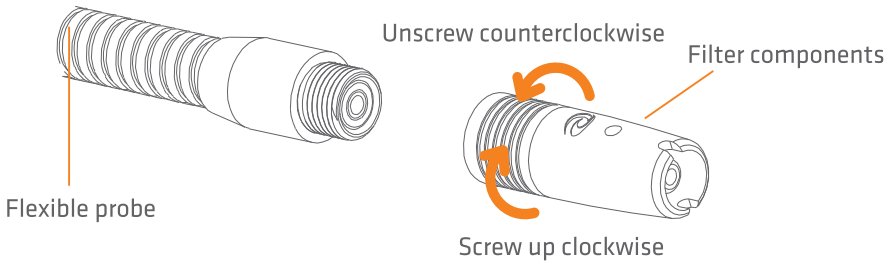
  Charging indicator in Green: the battery is fully charged.

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.



Batteries Replacement

Battery Replacement Diagram

Follow the steps below:

1. Remove the battery cover.
2. Install the battery according to the polarity.

What's Included

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

Warranty Periods

One year since the date of original purchase.

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V1.2