Aer product series user manual

1. About Aer devices

Aer devices help you understand and improve indoor air quality in the spaces that matter most to you.

There are three models in the Aer family:

- **Aer** – VOC, temperature, humidity, atmospheric pressure
- **Aer Lite** – temperature, humidity, atmospheric pressure
- **Aer CO_2** – CO_2, VOC, temperature, humidity, atmospheric pressure

All models share the same casing, LED logic, and basic operation.

Your Aer device is fully battery-powered and does not require Wi-Fi. It includes a built-in SIM card that automatically connects to the mobile network. Simply remove the pull-tab and the device will begin operating and sending data to the cloud using its secure cellular connection.

Aer devices are intended for **monitoring indoor air quality** in homes, offices, logistic centers and other similar environments. The device measures and synchronizes data approximately every **30 minutes** to the cloud.

Use the device as an **indicator and decision-support tool**, not as the sole basis for any safety-critical decisions.

2. Safety & Important Information

- **Do not open the casing.** There are no user-serviceable parts inside. Opening the casing or attempting to replace the battery will void the warranty.
- **Indoor use only.** Do not expose the device to rain, dripping water or condensation.
- **Avoid heat sources.** Keep away from heaters, radiators, stoves, and direct sunlight.
- **Avoid chemicals and liquids.** Do not spray cleaners, perfumes or aerosols directly onto the device.
- **Keep out of reach of small children.** This is an electronic device, not a toy.
- **Use only as described** in this manual. Misuse can lead to inaccurate readings or damage.

Battery & environment

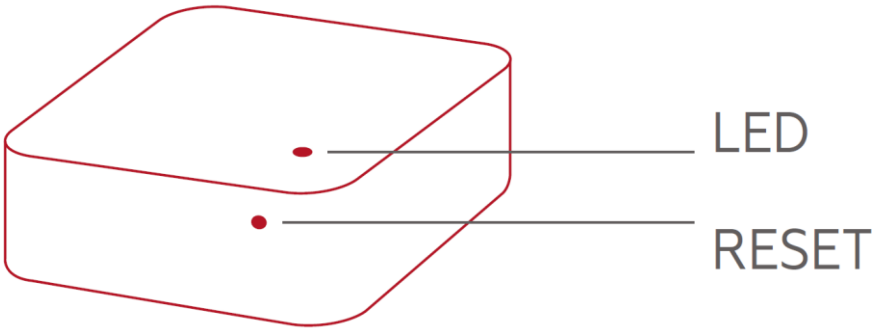
- Built-in battery, **not user-replaceable**.
- Do not puncture, incinerate or expose the device to temperatures above the specified range.
- If the casing is damaged, stop using the device.

Disposal & recycling

- Do not dispose of the device with household waste.
- Follow local regulations for electronic and battery recycling (WEEE).

3. Product Overview

3.1 Device layout (all models)



3.2 LED indicator codes

From the quick guide, expanded with actions:

LED pattern	Meaning	What you should do
1× purple blink	Device started successfully	No action needed
2× green blink	Device powered on and connected to network	No action needed
1× blue blink	Measurement data sent to cloud successfully	No action needed
2× red blink	Device unable to send data to cloud	Check coverage, wait, try moving the device
3× red blink	Generic error	Restart the device, then contact support if issue remains

Restarting the device

1. Locate the **Restart** pin-hole on the device housing (Illustration 1).
2. Using a paper clip or similar pin, **press and hold** for ~2 seconds.
3. Release when you see a **purple blink**, indicating restart.

4. Getting Started

4.1 In the box

- Aer device (Aer / Aer Lite / Aer CO_2)
- Quick Start Guide

4.2 Powering on

1. Remove the **pull tab** to activate the built-in battery.
2. Wait for the LED to **flash green twice** – this indicates the device has powered on and connected to the network.
3. The device will begin measuring air quality and periodically sending data to the cloud. *Note: The first data upload may take up to **5 minutes** to appear in the mobile application.*

4.3 Installing the Aer Living app

1. Download the **Aer Living** app from the App Store or Google Play, or scan the QR code in the Quick Start Guide.
2. Install and open the app.
3. Log in using the **phone number registered by your service provider, or** scan the QR code on your Aer device to register your phone number and create your login.

4.4 Connecting your device to the app

If this is your first device the Aer Living app will automatically guide you through the device setup during the onboarding process.

If you already use the app:

1. Open the **Aer Living** app.
2. Go to **Settings → New devices**.
3. Follow the on-screen instructions to complete the device setup.

The device includes a built-in, pre-activated SIM card and connects automatically via **LTE-M / NB-IoT**. **No Wi-Fi setup is required.**

4.5 Using multiple devices

- You can add **multiple Aer devices** to the same account.
- Each device can be assigned to a room (e.g., *"Living room"*, *"Office"*) to make it easy to identify it in the app.

5. Device measurements

Aer devices measure different parameters depending on the model.

Overview table

Parameter	Unit	Typical indoor range	Good / Optimal	Attention / Moderate	Poor / Action needed
CO_2 (Aer CO_2)	ppm	400–2000	**< 1000 ppm** - optimal	**1000–1400 ppm** (↓ cognitive ~15%)	**> 1400 ppm** (↓ cognitive ~50%) – ventilate strongly
IAQ index	IAQ	0–500 (index)	**< 100** – optimal	**100–200** – lightly polluted	**> 200** – heavily polluted, reduce sources
Temperature	°C	18–26	**18–24 °C** – comfort range	< 18 °C or 24–26 °C	< 16 °C or > 26 °C – may feel uncomfortable
Relative humidity	%	20–80	**40–60 %** – recommended range	30–40 % or 60–70 %	< 30 % (too dry) or > 70 % (risk of mould)
Pressure	hPa	~980–1040	**1000–1020 hPa** – normal	< 1000 hPa (unstable), > 1020 hPa (dry)	Extremely low/high – weather systems, may cause discomfort

5.1 CO_2 (Aer CO_2 device)

- **What it is:** Carbon dioxide produced by people breathing and combustion processes.
- **Why it matters:** Elevated CO_2 can cause headaches, drowsiness, reduced concentration and overall reduced cognitive performance.

How to react to CO_2 levels

- **< 1000 ppm** – No action needed. Ventilation is sufficient.
- **1000–1400 ppm** – Consider **opening a window**, increasing ventilation or reducing the number of people in the room.
- **> 1400 ppm** – Ventilate the room thoroughly; avoid staying for long periods without fresh air.

Situational tips

- **After a meeting in a small room** – expect CO_2 to rise quickly. Aer will help you decide when to air out before the next meeting.
- **During sleep in a closed bedroom** – CO_2 usually increases overnight. High morning values suggest you should sleep with a window slightly open or improve ventilation.
- **In classrooms** – CO_2 tends to build up over lessons. Use the values to schedule regular airing breaks.

5.2 IAQ index (Aer & Aer CO_2 devices)

- **What it is:** Volatile organic compounds from cleaning products, furniture, paints, perfumes, cooking, etc.
- The device uses a sensor that maps VOC levels to an **IAQ index** from 1–500.

Interpreting IAQ index

- **< 100** – Optimal air quality
- **100–200** – Lightly polluted (e.g. after light cooking, candles)
- **> 200** – Heavily polluted (strong smells, chemicals, smoke)

Situational tips

- **After cooking or frying** – Expect IAQ to worsen (index ↑). Turn on kitchen hood, open windows and wait until values return close to your usual baseline.
- **After cleaning or using sprays** – Many cleaning agents and air fresheners contain VOCs. Ventilate until the index returns to normal.
- **New furniture or renovation** – New materials can emit VOCs for days or weeks. Use Aer to track how air quality stabilizes over time.

5.3 Temperature & humidity (all Aer devices)

Use Aer to keep your environment comfortable and healthy:

- **Temperature 18–24 °C** – typical comfort range.
- **Humidity 40–60 %** – helps reduce risk of dry air symptoms and mold growth.

Situational tips

- **Very low humidity (< 30%)** – consider using a humidifier or drying laundry indoors.
- **High humidity (> 70%)** – ventilate more, reduce drying laundry indoors, check for leaks or condensation.

5.4 Atmospheric pressure (all Aer devices)

- **1000–1020 hPa** – normal pressure.
- **Below 1000 hPa** – may indicate unstable, cloudy or rainy weather and can be associated with headaches for sensitive people.
- **Above 1020 hPa** – calm, dry weather likely.

6. Using the Aer Living App

6.1 Home screen

In Home screen are showed:

- Overall measurement score (Good, Fair, Poor)
- Device status (online, last uplink time, signal strength)
- Latest CO_2 / IAQ / temperature / humidity / pressure values

Figure 1 Aer Living application Home screen

6.2 Measurement history

- View historical data up to **1 year**.
- Filter history by days, weeks, or months.

6.3 Alerts & thresholds

- Default thresholds for CO_2, IAQ, temperature and humidity.
- You can **adjust notification settings** according to your needs.

6.4 Predictive analytics & recommendations

The app includes predictive analytics feature that uses your historical data and trends to forecast expected air quality. You can enable or disable predictive notifications.

6.5 Account, data & privacy

- Your measurement data is stored in the **LMT IoT cloud**.
- Data is used to:
    - Show current & historical values.
    - Generate predictive insights & notifications.
    - Improve device and service performance.
- You can request **account deletion** and associated data removal via the app.

7. Placement Guidelines & Situational Use

Good placement is crucial for accurate readings.

Do:

- Place the device **at breathing height** (approx. 0.8–1.5 m above the floor).
- Place it on a stable surface with free air circulation.

Avoid:

- Direct sunlight or near heat sources (radiators, ovens).
- Direct airflow from vents, fans or open windows.
- Close to cooking areas, candles or heavy chemical use, unless you specifically want to monitor those sources.

8. Troubleshooting

Device shows 2× red blink (unable to send data)

- Move the device to another location.
- Wait several minutes to see if it reconnects (2× green / 1× blue blink).
- If the issue persists, restart the device.

Device shows 3× red blink (generic error)

- Restart via the pin-hole restart button.
- Check that the device is used indoors and within operating temperature range.
- If error continues, contact support.

No new data in the app

- Check that the device LED occasionally shows **1× blue blink** (data sent).
- Ensure you have mobile data/Wi-Fi on your phone to load latest cloud data.
- Refresh the app or log out and log in again.

Readings seem "stuck" or unrealistic

- Make sure the device is **not blocked** (e.g. covered by objects).
- Check placement (away from direct heat, vents, strong VOC sources).

9. FAQ

Q: How often does the device measure and send data?

A: The device measures and synchronizes data approximately every **30 minutes** to the cloud.

Q: Can I use Aer outdoors?

A: Aer is designed for **indoor use**. Short periods outdoors (e.g. for calibration) are fine, but continuous outdoor use is not recommended.

Q: Can I replace the battery?

A: No. The battery is built-in and not user replaceable. Opening the device will void the warranty.

Q: Does Aer devices need Wi-Fi?

A: No. Aer uses a built-in **LTE-M / NB-IoT** connection. You only need internet on your phone to access cloud data.

Q: How long will the device last?

A: The estimated lifetime is up to **5 years for Aer and Aer CO2, 7 years for Aer Lite**, depending on notification settings and network coverage.

10. Technical Specifications, Warranty & Regulatory

10.1 Technical specifications

Feature	Value
CO_2 measurement range	400–5000 ppm
CO_2 accuracy	±(50 ppm + 3% of reading)
VOC / IAQ index	0–500 (relative IAQ index, BME688 via BSEC)
Temperature range	–40 to +85 °C
Temperature accuracy	±0.5 °C at 25 °C
Humidity range	0–100 % RH
Humidity accuracy	±3 % RH (typical at 25 °C)
Pressure range	300–1100 hPa
Connectivity	LTE-M / NB-IoT
Power	Built-in primary Lithium battery (Li-$SOCl_2$)
Device operating temperature	10–40 °C
Device operating humidity	10–90 % RH, non-condensing
Protection rating	Indoor use only (no IP rating)

10.2 Warranty

- Warranty period: **1 year.**
- Covers defects in materials and workmanship under normal use.
- Does not cover:
    - damage from misuse, abuse, modification, or accidents
    - opening the casing or attempting repairs
    - exposure to water, extreme temperatures, or chemicals

Keep your **proof of purchase** for service or replacement.

10.3 Support

Support is available through your local provider or according to your service agreement.

10.4 Regulatory

This product complies with the essential requirements and other provisions of:

- RED 2014/53/EU
- RoHS 2011/65/EU
- EU Cybersecurity Regulation 2022/30

The full **EU Declaration of Conformity** is available at: lmt-iot.com/Aer_DoC