Operational Manual

Labotronics

Handheld Air Sampler

LB-10HAS

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1. Introduction

Handheld Air Sampler LB-10HAS offers a precise flow rate of 100 L/min ± 5%, with an adjustable volume range from 0.01 to 9999 L. It operates with a 17 m/s sampling hole wind speed and a 0.4 m/s port flow rate for efficient air collection. This unit features a sampling port for quick petri dish replacement, minimizing downtime and contamination risks. Our air sampler comes with an LCD color touch screen for easy operation and smooth navigation.

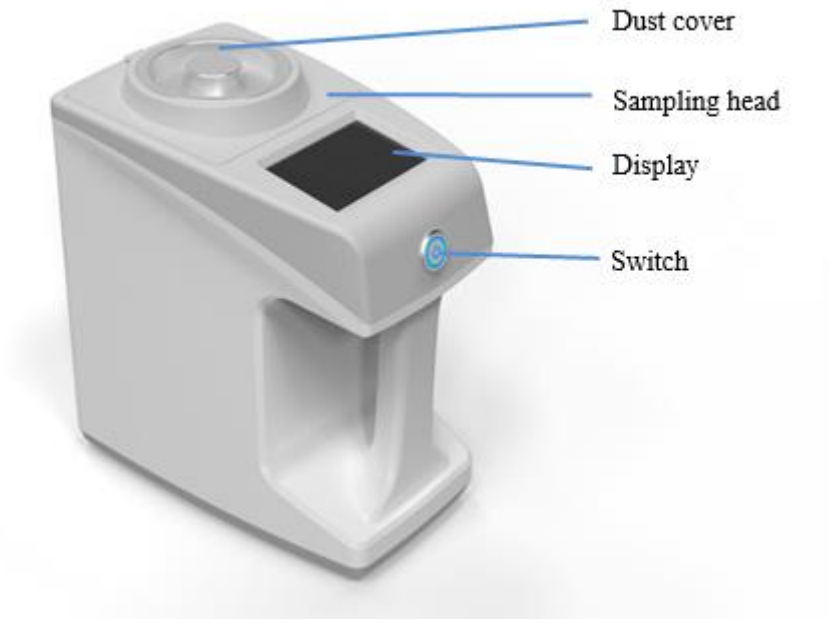
2. Features

- Compact and hand-held unit
- Group storage for sampling parameters
- Easy petri dish replacement via a sampling port
- Data export to PC for analysis

3. Specifications

Model	**LB-10HAS**
Sampling Flow Rate	100 L/min ± 5%
Sampling Volume Range	0.01 to 9999 L adjustable
Sampling Hole Impact Wind Speed	17 m/s
Flow Rate of Sampling Port	0.4 m/s
Device Volume	Φ 120 × 300 mm
Sampling Method	Constant speed in clean room
Agar Petri Dish Compatibility	Standard Φ 90mm × 15mm
Screen Size	3.5-inch touch screen
Data Communication Interface	USB
Power	AC/DC, 6000mAh battery (8 hours runtime)
Dimensions	220× 140 × 250 mm
Weight	1.6 kg

4. Instrument Introduction



5. Operations

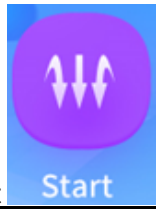
5.1 Preparation before Sampling

1) Ensure the clean room meets the required temperature and humidity levels. Static pressure difference, air change rate, and airflow velocity must be within the specified limits.
2) For unidirectional (one-way) flow areas, begin sampling only after the purification air-conditioning system has operated normally for at least 10 minutes. For non-unidirectional flow areas, wait a minimum of 30 minutes before starting the test.
3) During static testing, no more than two personnel should be present in the clean room. While sampling, the tester must position themselves on the downwind side of the sampling port.
4) All testers must adhere strictly to aseptic techniques and take precautions to avoid contaminating the sampling port or introducing other sources of contamination.
5) Personnel must wear cleanroom garments that correspond to the required cleanliness level.
6) Prior to testing for airborne (planktonic) bacteria, ensure both the clean room and the sampling equipment are thoroughly disinfected.

5.2 Sampling Operation

1) Remove the sampling head, place a 90mm petri dish onto the support bracket, and then reattach the sampling head.
2) On the main screen, press the start button " 

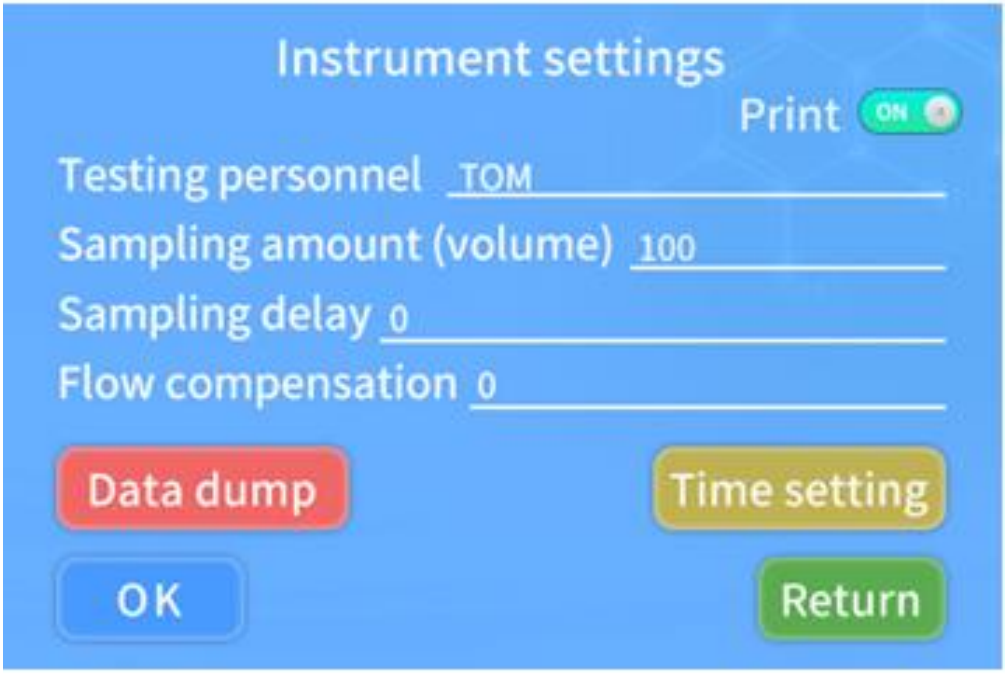
" to access the sampling interface, then select Start Sampling to begin the operation.
3) The buzzer will sound automatically once the sampling process is complete.

Start 

- Click the "**Start**" button to enter the sampling interface, where the current sampling count and sampling volume are displayed.
- Click "**Start Sampling**" to activate the instrument and begin sampling, and the sampling volume will accumulate from **0**.
- To reset the current sampling, click "**End Sampling**".
- Click "**Return to Home Page**" to navigate back to the main interface.

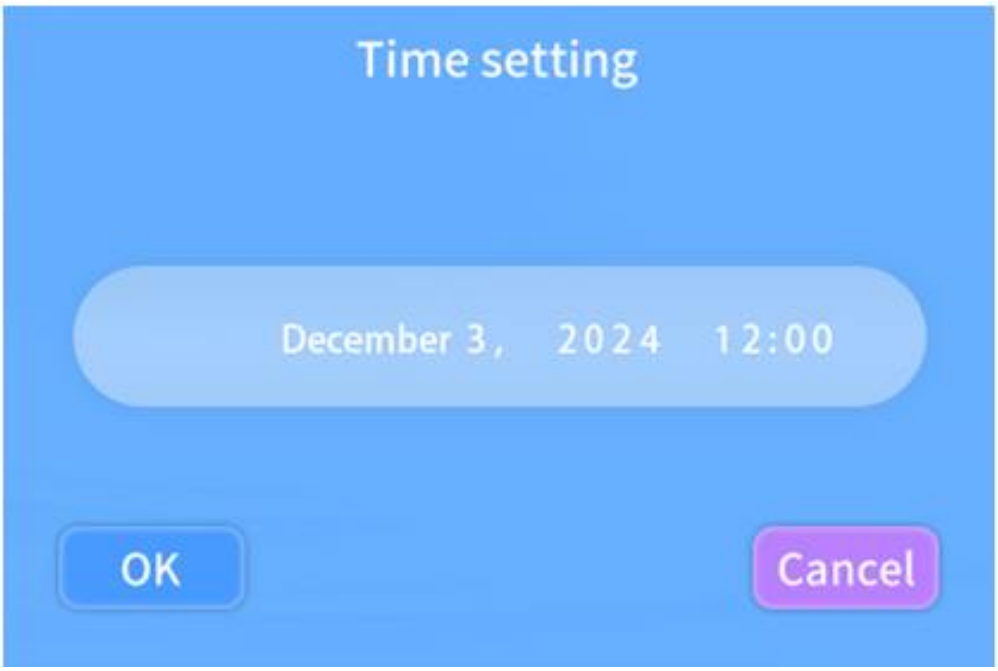
Settings

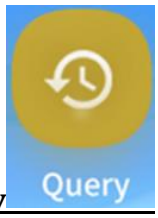
Click the "Settings" button on the main interface to enter the system settings interface. Through the settings interface, you can set the system date and time, sampling volume, and other information.



- Click on the display areas for **detection personnel**, **sampling volume**, **sampling delay**, and **flow compensation** to open an editing window where you can modify the corresponding values.
  - The **sampling volume** can be set between **1 and 9999**.
  - The **sampling delay** is measured in seconds, indicating the delay before the sampling volume starts accumulating.
  - **Flow compensation** allows adjustment relative to 100 L and can include negative values to reflect actual flow differences.
- Click **"Clear Data"** to delete all sampling records. If the data is not cleared and the storage becomes full, new records will automatically overwrite the oldest ones.
- Click the **"Print OFF"** icon to enable automatic printing. When enabled, a report will automatically print after each sampling. Click the icon again to disable this feature.

- Click the **"Time Settings"** button to open the date and time configuration interface and set the current system date and time.





Query

- Click the "**Query**" button on the main interface to enter the query interface, which displays the serial number, sampling time, and sampling volume information.
- Click "**Scroll Up**" and "**Scroll Down**" to view the next and previous records and click the "Print" button to print the currently displayed content.

6. Maintenance

Air Sampler Maintenance and Disinfection

The air sampler and its sampling head should be disinfected using a commercial disinfectant or a 70–90% alcohol solution (including isopropyl alcohol/water mixtures).

1) **External Surface Disinfection:**
   - You may spray disinfectant directly onto the instrument's surface and wipe it clean with a sterile towel.
   - Alternatively, spray the disinfectant onto a sterile towel and use it to wipe the surface.
   - Ensure all disinfectant residue is completely wiped dry before operating the air sampler.
2) **Sampling Head Disinfection:**
   - Wipe the sampling head with medical-grade absorbent cotton soaked in disinfectant or alcohol.
   - You may also spray disinfectant directly onto the sampling head and allow it to air dry fully before use.

3) **Internal Disinfection in Clean Bench:**
   - Place the air sampler in a clean bench and disinfect internal components using a 70–90% alcohol solution or isopropyl alcohol/water mixture.
   - Clean exterior surfaces by spraying or wiping with a disinfectant-dampened sterile towel.
   - Operate the instrument for **two full 1000L sampling cycles** inside the clean bench. During each cycle, apply **two short sprays** of disinfectant above the unit to ensure effective sterilization. Make sure the sampling head is properly installed during this process.

4) **Post-Disinfection Handling:**
   - After cleaning, dry the air sampler with a sterile towel.
   - Cover the device with a sterile plastic bag to maintain sterility until the next use or before transferring to a sterile area.

Important Notes:

- Always cover the air sampler with a dust cover when not in use.
- Handle the sampling head carefully—avoid any impact.
- If the sampling head pores become clogged, clean them gently using a fine needle or an ultrasonic bath.

7. Accessories

1) Power Adapter × 1 pc
2) Thermal Printing Paper × 1 roll
3) Petri Dish × 2 pcs