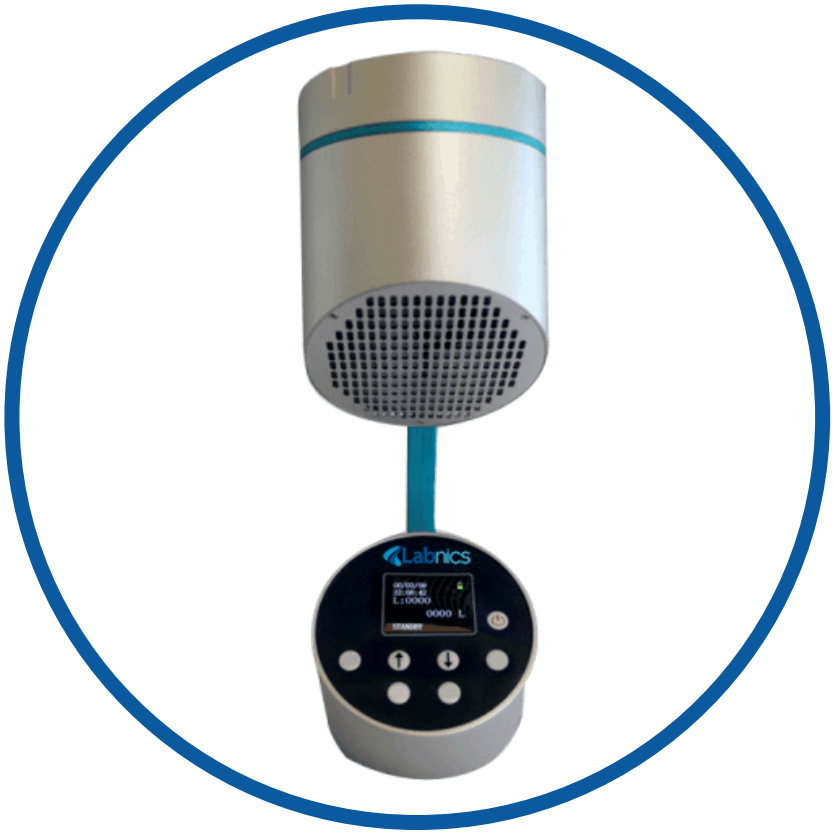

Microbial Air Sampler

NMAS-200

Index

1. Safety Measures

1) If the instrument fails, make sure to contact your authorized technical service immediately and do not disassemble it by yourself.
2) When moving the host, unplug the power plug first and move carefully and steadily.
3) Do not invert to avoid damaging the instrument.
4) This instrument has a battery power display and protection function: when the battery power is low, Sampling operation is not allowed. At this time, press the "Sampling" key and the battery power symbol. It will turn red and needs to be charged as soon as possible.
5) When the instrument enters the "screen saver" state, the LCD screen is black and the power is off.
6) The power indicator light flashes; at this time, you can press any key except the "Power" key. Wake up. (On the function setting page, the screen saver function is invalid)
7) When the sampling volume reaches the set value, the instrument will emit, a long “beep” sound is heard as a reminder, and sampling stops at the same time, entering “QUERY” state.

2. Introduction

Microbial Air Sampler NMAS-200 is a high-efficiency multi-hole inhaled air sampler. It is designed in regard to the principle of isokinetic sampling by the two theories of the particles-impact and equal-flow-sampling. When sampling port is 397 meshes with a diameter of 0.7mm Micropore, which reduces bacterial overlap and microbial counting errors, planktonic bacteria with air highly-speed thrill through a ventage, and then they impinge on the surface of the agar in the culture medium. When the microbes are cultivated, they will be dynamic-hydrated and high-speed flowing because of which we can procure results quickly.

3. Features

- ✓ Equipped with protective cover and porous sampling head
- ✓ Microprocessor controlled technology
- ✓ Portable, lightweight air sampler
- ✓ Sampling inlet has many tiny holes to reduce puffball superposition and error of animalcule count
- ✓ Sampling pump seat and sampling pump cover present
- ✓ Dust bacteria collide evenly in Petri dish
- ✓ HEPA filter, Guarantee, clean working environment
- ✓ Designed by Power jack
- ✓ Planktonic bacteria sampler has unique structure an upper and lower
- ✓ Sampling mouth and its crust are made of high-quality aluminium
- ✓ It has powerful functions, large sampling rate, stable capability, and easy to operate
- ✓ LCD display in sampling time, sampling volume and other features
- ✓ Charging interface

4. Specifications

Model No.	NMAS-200
Temperature	10 to 35°C
Relative humidity	10 to 90 % RH
Atmospheric pressure	80 to 110 kPa
Maximum dust concentration	100000000 particles/m^3 @ µm or 0.2mg/m^3
Sampling flow	100L/min
Inlet impact speed	0.38 m/s basically the same as the speed of clean room (isokinetic sampling)
Sampling quantity	Can be set from 0.001 to 9.999 m^3
Standard dimension of culture dish	Ø 90 × 15 mm
Dimension	Ø 120 × 325 mm
Power Supply	DC 16.8V chargeable battery which can supply 4hours power
Weight	4.0 kg

5. Applications

Microbial Air Sampler is used in Biology Laboratory, Sterile Pharmaceutical factory, Hospitals, Food Processing Workshop, optical lenses and Electronic industries.

6. Installation

6.1 Working Environment

1) **Temperature:** 10--55C
2) **Relative humidity:** 10--90%RH
3) **Atmospheric pressure:** 80-110 kPa
4) **Maximum dust concentration:** 100,000,000 particles/m^3@0.5μm or 0.2mg/m^3

6.2 Structural Components

1) The sampler consists of two parts, the upper part is the sampling head, the culture dish seat. It is mainly composed of a sample pump, a sample pump stand, and a sample pump power supply.
2) The LCD display lower part is the control panel, memory, display, keyboard, and battery assembly.
3) The sampler can be used for both AC and DC. There is a power jack and a data line interface at the lower back of the instrument. When using DC, turn on the switch to be powered by the battery; when using AC, plug the 16.8V power adapter that comes with the instrument into the above jack.
4) When the switch is not turned on, it is in the charging state. When the switch is turned on, it is powered by the 16.8V power adapter and maintains the charging state.

7. Operations

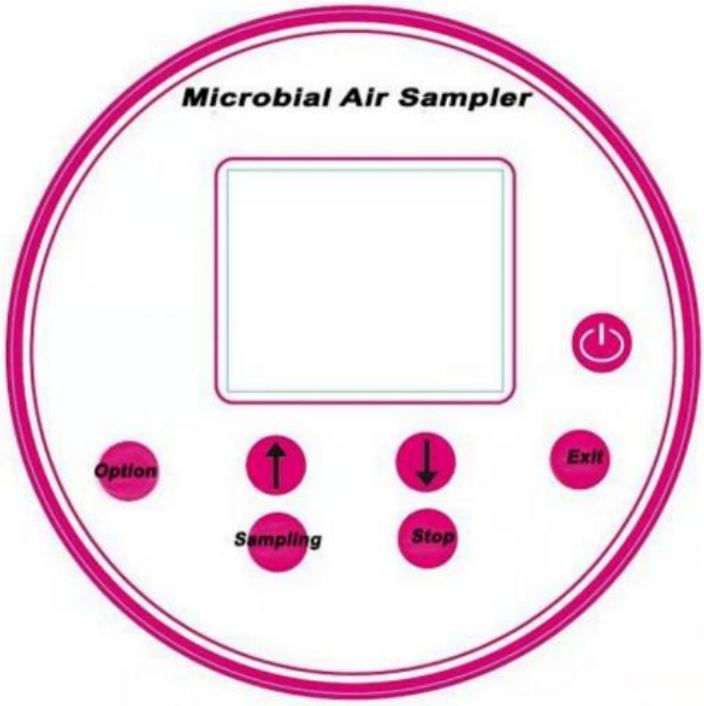

Figure-1

1) After powering on, the main interface is displayed, "17/10/22" indicates the date, "10:25:27" indicates the time. Indicates time, "L:0007" indicates the sampling number. "STANDBY" indicates this time, the status is ready to start "0000L" indicates the real-time sampling flow.
2) Data query: When in the "STANDBY" state, press the "Stop" key. When it changes to “QUERY”, press “↑”, “↓” keys to query historical data. In the "PAUSE" state, you need to press the "Stop" key twice to enter the data query state.
3) Sampling: When in the "STANDBY" state, press the "Sampling" key to directly. When in the "QUERY" state, press the "Stop" key to enter the "QUERY" state. Sampling is possible only when the machine is in the “STANDBY” state.
4) Pause: When the instrument is sampling, press and hold the "Stop" button for 2 seconds to pause the instrument. The status is displayed as "PAUSE". If you want to continue sampling, press "Sampling". To resume sampling, press the PAUSE key again. Press the "Stop" key to enter the "STANDBY" state, and press the "Sampling" key to restart sampling.

5) In the main interface, press "**Function**" to enter the setting interface.

Figure-2

6) In the setting interface, press the "Function" key again to set the parameters, press the "Stop" key to adjust the cursor position, and press the "↑, ↓" key to adjust the value. Press " Function" to save, and press the "Exit" key to return to the main interface to work.
   - **DATE:**17/10/22" indicates the date.
   - **TIME:**10:25:32" indicates the time DELAY-SP: 120 (S)"
   - Indicates the screen saver delay time, unit: second
   - **SUM-FLOW:** 0100 (L)" indicates the set sampling volume, unit: liter.
   - **DELAY-SM**: 0000 (S)" indicates the sampling delay time, unit: second
   - **LOG-CLEAR**: 0000" indicates clearing data. After entering the password "7557", press the "Function" key to clear all historical data.
   - **FLOW-ADJ:** It is the parameter for adjusting the speed of the sampling fan (factory setting, only for calibration use)

8. Maintenance

8.1 Disinfection Process

1) Thoroughly disinfect the sampling port, culture dish, and outer cover using an appropriate disinfectant.
2) Ensure that the disinfectant is applied evenly across all surfaces, following the recommended contact time for optimal effectiveness.
3) Alternatively, use ultraviolet (UV) sterilization to disinfect the surfaces, making sure the UV light is directed at all exposed areas for the required duration.
4) After disinfection, allow the surfaces to air-dry to ensure complete elimination of any microbial contamination.

8.2 Function Set on Host Panel

1) Press the "**Function Set**" button on the host panel to access the settings menu.
2) Adjust any necessary parameters for operation, such as time, temperature, or other specific settings required for the device's function.
3) Confirm the selected settings and ensure they are properly saved by following any on-screen prompts or indicators.
4) Double-check the system's readiness before proceeding with further actions or experiments.

8.3 Environmental Parameters of the region

1) In order to ensure production quality and prevent the production environment from polluting the drugs, the production area is airtight. The room must meet the specified environmental standards.
2) The laboratory area should focus on controlling particles and microorganisms, while also addressing the environment. Make necessary adjustments to the temperature, humidity, fresh air volume, pressure difference, illumination, noise and other parameters regulation.
3) The air cleanliness of laboratory production clean rooms (areas) is divided into four levels.

Note: The test of air cleanliness in clean rooms (areas) is generally based on static conditions.

Cleanliness level	**Maximum allowable no. of dust particles/cubic meter**		**Maximum no. of microorganisms allowed**	
	≥0.5um	≥5um	Settling bacteria/floating bacteria/cubic meter	
Level 100	3500	0	1	5
10000 level	3500000	2000	3	100
100000 level	3500000	20000	10	500
300000 level	10500000	60000	15	