anaerobic microaerobic workstation with uv sterilizing lamp

Anaerobic microaerobic workstation is a high-precision microbial culture equipment specialized in constructing and maintaining low-oxygen and even anaerobic experimental environments, which is widely used in the study of bacterial groups with obvious differences in aerobicity.

Anaerobic Microaerobic Workstation

The closed operating system of the anaerobic microaerobic workstation enables precise regulation of key parameters such as gas concentration, temperature, and humidity, providing a constant and stable hypoxic or anaerobic environment for operations like inoculation, passaging, media conversion, and colony observation. It is ideal for strains strictly reliant on anaerobic conditions or sensitive to oxygen concentration, such as **Shigella**, **Campylobacter jejuni**, and **Clostridium botulinum**.

Main Features

1. **Multi-species adaptation:** Temperature and gas environment can be set for various strains, meeting national standards for cultures like Shigella, Campylobacter, and Clostridium.

2. **Precise environmental control:** Oxygen concentration adjustable from 0% to 10%, supporting complete anaerobic to microaerobic experimental needs.
3. **Adjustable temperature control:** Precision thermostat module allows culture temperature settings from 25°C to 45°C.
4. **Integrated operation chamber:** Fully enclosed area with transparent walls and sealed sleeves for sterile, anaerobic operation.
5. **Intelligent monitoring:** Real-time display and recording of gas concentration, temperature, humidity, with abnormal alarm functions.
6. **Convenient gas channel:** Multiple gas interfaces support precise mixing and injection of nitrogen, hydrogen, carbon dioxide, etc.
7. **Clean air management:** HEPA high-efficiency filtration device prevents sample contamination and cross-infection.

Advantages

1. **High operational flexibility:** Supports full anaerobic operation and precise micro-oxygen control (1–5%) for varied experimental design.
2. **Improved repeatability & safety:** Automated environment control and monitoring reduce human error and enhance experimental consistency.
3. **Safer sample processing:** Avoids oxygen exposure risk from repeated tank switching, maintains microbial activity.
4. **Energy-saving & efficient:** Low power consumption (4A) for stable operation.
5. **High-throughput operation:** Supports multiple media and sample processing for medium and large labs/testing centers.

Working Principle

1. **Gas mixing & injection:** High-precision mixing of nitrogen, hydrogen, and CO_2, injected into the chamber.
2. **Chemical deoxidation:** Built-in catalyst and trace hydrogen react to rapidly consume residual oxygen.
3. **Constant temperature & humidity:** Heating element and ultrasonic humidifier maintain stable environmental conditions.
4. **Sealed operation:** Cuffs and hatches prevent oxygen leakage, keeping samples in target gas state.
5. **Feedback control:** Sensors monitor O_2 and CO_2, automatically adjusting gas input for stability.