

anaerobic-hypoxic workstation with timed air inlet function

The anaerobic and hypoxic workstation provides a controlled hypoxic and even anaerobic environment for microbiology, cell biology, molecular medicine and other research.

Anaerobic Hypoxia Workstation

Enables researchers to culture, manipulate, and analyze anaerobic bacteria, microaerobic bacteria, or hypoxia-sensitive cells under conditions close to in vivo physiological environments. Suitable for experiments simulating tissue hypoxia, tumor microenvironment, inflammatory response, and other complex physiological states.

Main Features

1. **Precise gas control:** Oxygen concentration adjustable to less than 0.1%, supports long-term low-oxygen/no oxygen conditions.
2. **CO₂ concentration regulation:** Built-in high-sensitivity sensor, automated concentration management for cell metabolism.
3. **Automatic humidity regulation:** Ultrasonic humidification with feedback system maintains constant humidity and prevents medium evaporation.



4. **High-efficiency filtration:** Built-in HEPA-U16 grade filter ensures clean internal air, prevents sample contamination.
5. **Humanized operation:** Flexible, fully sealed sleeve for long-term, pollution-free, safe and efficient operation.
6. **Timed air intake:** Programmable gas supply mechanism supports multi-stage oxygen pressure change experiments.
7. **Multiple lighting systems:** Equipped with fluorescent and UV sterilization lamps for observation and hygiene control.
8. **Energy-saving, stable design:** 6A low-power operation; power socket supports parallel use of multiple instruments.

Advantages

1. **Simulate real physiological environment:** Can create complex oxygen conditions like tumor hypoxia, inflammatory tissue, intestinal environment.
2. **Save culture time:** Continuous, stable low oxygen control avoids contamination and failure from repeated transfer.
3. **Strong versatility:** Supports culture of microorganisms, mammalian cells, stem cells, etc.
4. **Modular design:** Supports expansion for different gas ports, culture apparatus, data acquisition modules.

5. **High operating comfort:** Ergonomically optimized cuff and layout, no fatigue during long-term operation.

Working Principle

The workstation mixes high-purity nitrogen, oxygen, and carbon dioxide in set ratios via a multi-way gas mixing system and delivers them to a closed culture chamber. High-precision oxygen/carbon dioxide sensors provide real-time monitoring and feedback control for linear oxygen concentration adjustment (normoxia to hypoxia, even 0%). The humidification system maintains constant humidity; HEPA filtration ensures clean, dust-free air. Experimenters operate aseptically with sealed cuffs; external control enables automatic and programmable management.