



HPLC COLUMN OVEN

The HPLC Column Oven system ensures precise column temperature control by using a fuzzy PID algorithm, fan-based air circulation, and multi-layer insulation. With a stability of $\pm 0.1^{\circ}\text{C}$, it maintains consistent temperatures. Additionally, it incorporates real-time liquid leak protection, intelligent temperature monitoring, and over-temperature safeguards, preventing both leakage and overheating risks.

APPLICATIONS

- **Pharmaceutical Analysis:** Improves peak resolution and reproducibility for drug testing and stability studies.
- **Food & Beverage Testing:** Enhances separation efficiency when analyzing additives, preservatives, and contaminants.
- **Environmental Monitoring:** Provides stable temperature control for detecting trace pollutants and pesticides.
- **Clinical & Biomedical Research:** Ensures precise separation of biomolecules such as proteins, peptides, and metabolites.
- **Chemical & Petrochemical Industry:** Optimizes separation of complex mixtures in polymers, oils, and chemical intermediates.
- **Biotechnology Applications:** Supports accurate analysis of nucleic acids, enzymes, and fermentation products.
- **Forensic Science:** Maintains stable conditions for reliable detection of drugs, toxins, and other trace substances.
- **Method Development & Validation:** Enables reproducible retention times and reliable comparisons across analytical runs.

FEATURES

Precision: Precise Temperature Control Ensures Good Separation and Repeatability

By utilizing a fuzzy PID intelligent temperature control algorithm, a fan-based air circulation system, and a multi-layer insulation design, the column temperature achieves exceptional accuracy, stability, and uniformity. Maintaining a temperature stability of $\pm 0.1^{\circ}\text{C}$, each analysis consistently upholds a constant temperature throughout.

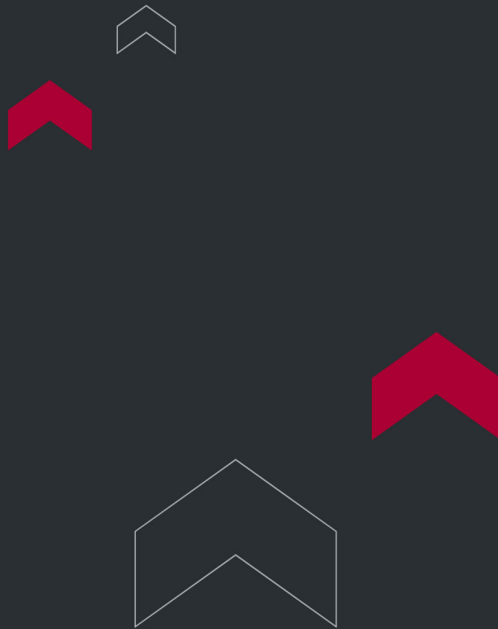
HPLCHPLC

Reliability: Triple Protection, More Safe to Use

The system incorporates real-time liquid leak protection and intelligent monitoring of Peltier and cavity temperature, along with over-temperature power-off protection. These triple safety measures effectively prevent accidental liquid leakage and mitigate risks associated with overheating.

TECHNICAL SPECIFICATIONS

Operating principle	Peltier element and fan-based forced air
Temperature range	5°C above ambient to 85°C
	10°C below ambient to 85°C



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