



QUALITEST™

Mini Food Freeze Dryer



STANDARDS

ASTM E3250

IEC 61010-1

ISO 14159

ISO 22000

Mini Food Freeze Dryer - QualiFFD™ 1

A compact Freeze Dryer designed as a home and small-batch Food Freeze Dryer, the QualiFFD™ 1 supports freeze-drying up to 1 kg per run for practical food preservation. It's built for easy operation, helping teams create stable, shelf-ready products with minimal setup. The system is positioned for household use and small-scale production where repeatability matters.

The QualiFFD™ 1 uses controlled freezing and vacuum drying to remove water while helping retain food structure and flavor. A one-touch workflow is described for simplified operation, making it approachable for first-time users and routine batches. The chamber and cold trap are integrated to shorten the vapor path, which helps reduce overall drying time. A safety lock is included to reduce accidental parameter changes during a cycle.

APPLICATIONS

Mini Food Freeze Dryer - QualiFFD™ 1 Applications

- Emergency reserve foods: Freeze-dried foods can be stored as emergency provisions because moisture removal helps slow spoilage drivers. The goal is stable calories and nutrition in a compact format that stores efficiently. This is useful for home preparedness programs and small organizations that maintain emergency supplies.

- Outdoor and travel meals: Freeze drying reduces carried weight and supports fast rehydration for meals on the go. This application fits outdoor brands, test kitchens, and content creators producing lightweight meal kits. It also supports product trials for new flavors and portion formats.
- Healthy lifestyle food prep: Freeze-dried vegetables and ingredients are used to keep color, aroma, and shape closer to the original. This supports batch meal prep, snack prototyping, and ingredient storage when refrigeration space is limited. It also fits small food businesses building cleaner-label options with fewer additives.
- Pet food and treats: Freeze-dried meat and poultry are commonly positioned for high-protein pet products. This supports small pet treat makers who want stable products and fast packaging workflows. It also helps with R&D sampling before scaling to larger equipment.



Standards

- ISO 22000: Food safety management systems (framework for food safety hazard control).
- ISO 14159: Hygiene requirements for machinery design in hygiene-risk applications.
- IEC 61010-1: Safety requirements for electrical equipment used in laboratory and control environments.
- ASTM E3250: Best practices for freeze dryer instrumentation (temperature and pressure measurement focus).

FEATURES

Mini Food Freeze Dryer - QualiFFD™ 1 Key Features

- One-button operation designed for simple, repeatable freeze-drying cycles at small scale.
- Integrated chamber and cold trap to shorten the sublimation pathway and reduce drying time.
- System safety lock to help prevent unintended edits to cycle status and parameters.
- Embedded color touchscreen for clear, on-device monitoring of process data.
- Advanced control algorithm described for stable, precise temperature regulation.
- Remote and on-site support options listed as part of after-sales technical service.
- Vacuum pump options offered, including industrial and oil-free configurations.

THEORY & METHOD

Theory and Method

Freeze drying starts by freezing the product so water becomes solid ice. The chamber is then evacuated to a low pressure so ice can sublime from solid to vapor rather than melting first. Water vapor is captured by the cold trap, helping stabilize

vacuum conditions during drying. Process control focuses on maintaining stable temperature and vacuum to protect texture and reduce collapse risk.

TECHNICAL SPECIFICATIONS

Mini Food Freeze Dryer - QualiFFD™ 1 Technical Specification

Specification	QualiFFD™ 1
Feed capacity	1 kg
Freeze-drying area	0.1 m ²
Cold trap temperature	≤ -60 °C (no-load)
Ultimate vacuum	≤ 5 Pa (no-load)
Shelf spacing	35 / 37 / 50 mm
Voltage	AC 220 V, 50 Hz (optional 110 V 60 Hz, 220 V 60 Hz, 380 V 50 Hz, etc.)
Vacuum pump options	Premier industrial pump; oil-free pump



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