



Advanced Benchtop Freeze Dryer



STANDARDS

ASTM E3250

IEC 61010-1

ISO 13408-3

Advanced Benchtop Freeze Dryer - QualiFD™ B adv Series

An Advanced Benchtop Freeze Dryer in the QualiFD™ B adv Series is a compact Freeze Dryer Machine built for heavier daily sample-prep workloads, with automation and protection functions that support stable long-run operation.

Standard configuration includes a high-performance freeze-drying vacuum pump, intelligent control, automatic cold-trap defrost, an oil mist filter, and automatic air inlet/drain features. QualiFD™ B adv Series uses a modular platform so you can choose a configuration that fits your workflow, such as standard tray drying, vial stoppering, or manifold-assisted drying. The control system supports data visibility and routine documentation through a touchscreen interface and logged process information.

Automatic defrost is available, with electric defrost standard and hot-gas defrost noted as an option. Safety interlocks and protection logic help reduce vacuum system faults and protect the pump and compressor during continuous use.

APPLICATIONS

Advanced Benchtop Freeze Dryer - QualiFD™ B adv Series Applications

- Laboratory sample preparation for biology and biotech: Labs use a Freeze Dryer to preserve cells, enzymes, and biological specimens for longer storage while supporting later reconstitution. This series supports routine tray-based

drying and higher-throughput sample handling when the workload increases.

- Pharma and formulation work: Vial workflows benefit from the top-press configuration, where vials can be sealed after drying while still under vacuum. That supports longer storage stability and reduces moisture pickup during post-process handling.
- Chemical synthesis and temperature-sensitive materials: Freeze drying helps remove solvent while avoiding heat-driven degradation that can happen with conventional drying. Manifold configurations also support drying in bottles or wide-mouth containers, depending on your sample format.
- Microorganism preservation in ampoules: The ampoule tube type is described for preserving microorganisms such as bacteria and fungi, using dedicated tube interfaces. This is useful for culture collections, QC labs, and R&D teams that maintain reference strains.



Standards

- ISO 13408-3: Aseptic processing guidance for lyophilization
- ASTM E3250: Best practices for freeze-dryer instrumentation (temperature/pressure measurement focus)
- IEC 61010-1: Safety requirements for laboratory electrical equipment

FEATURES

Advanced Benchtop Freeze Dryer - QualiFD™ B adv Series Key Features

- Automatic cold-trap defrosting, with electric defrost standard and hot-gas defrost listed as an option
- Automatic air inlet and drainage with safety interlock design to reduce vacuum system malfunctions
- Oil mist filtration to reduce pump oil consumption and limit indoor contamination risk
- Vacuum pump start protection tied to cold-trap temperature, plus compressor overload protection
- Flexible vacuum unit switching (Pa, mBar, etc.) and calibration capability for time, temperature, and vacuum pressure
- Maintenance reminders and alarm functions for safer routine operation
- Optional modules listed for eutectic point testing, vacuum adjustment, remote monitoring, scheduled start, and automatic self-check
- Optional AISI 316L cold-trap material and freeze-drying protective film are listed as selectable modules

THEORY & METHOD

Theory and Method

Freeze drying removes water by freezing the sample, pulling vacuum, then driving sublimation so ice transitions directly to vapor. Vapor is captured by the cold trap, and stable vacuum helps maintain repeatable primary drying.

Secondary drying continues at controlled conditions to lower residual moisture to your target. Logged temperature and vacuum trends support repeatability checks across runs, which helps in R&D and QC documentation.

TECHNICAL SPECIFICATIONS

Advanced Benchtop Freeze Dryer - QualiFD™ B adv Series Technical Specification

QualiFD™ B1 adv



1

Standard

Suitable for bulk materials.

QualiFD™ B2 adv



2

Stoppinger

Suitable for vials.

QualiFD™ B3 adv



3

Multi manifold standard

Suitable for bulk and flasks. It can be combined with a concentrator to achieve the dual purposes of freeze-drying and concentration.

QualiFD™ B4 adv



5

Ampoule T-Rack

Suitable for ampoule loading materials.

- QualiFD™ B1 adv (Standard): 4–6 stainless trays for bulk materials (liquid, paste, solid).

- QualiFD™ B2 adv (Top-Press): 3 trays with adjustable spacing; supports vial drying and vacuum stoppering after drying.
- QualiFD™ B3 adv (Standard + Multiple Manifolds): tray drying plus external hanging bottle attachment for vials or wide-mouth bottles; attachment can be removed during use.
- QualiFD™ B4 adv (Top-Press + Multiple Manifolds): combines top-press vial workflow with manifold capability.

Specification	QualiFD™ B1 adv	QualiFD™ B2 adv	QualiFD™ B3 adv	QualiFD™ B4 adv
Shelves usable area (m ²)	0.12	0.08	>0.12	>0.08
Cold trap temperature (°C)	≤ -60 (no-load); options ≤ -85 and ≤ -110 (no-load)			
Vacuum degree (Pa)	≤ 1 (no-load)			
Ice capacity (kg/24 h)	3–4			
Material tray (mm)	φ200	φ180	φ200	φ180
Layers of tray (pcs)	4	3	4	3
Tray spacing (mm)	70			
Power at -60 °C (W)	970			
Weight at -60 °C (kg)	41	62	41	62
Overall dimensions at -60 °C (mm)	610 × 430 × 360			
Drying chamber (mm)	φ260 × 430			
Cold trap diameter (mm)	φ215 × 145			
Vial capacity (φ12 mm)	—	492	—	492
Vial capacity (φ16 mm)	—	297	—	297
Vial capacity (φ22 mm)	—	147	—	147
Defrosting	Electric defrosting			
Voltage	1Ph + N + PE, 220V (110V is also available)			



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Address: 8201 Peters Rd., #1000,
Plantation, FL 33324, USA.

Qualitest Canada & International

Tel: +1.905.944.9825 | Fax: +1.905.944.0304
E-mail: sales@qualitest-inc.com
Address: 70 East Beaver Creek Rd., #9, Richmond Hill,
Ontario L4B 3B2, Canada.

Qualitest Latin America (Mexico and LATAM Region)

E-mail: ventas@qualitest-inc.com

Qualitest KSA (Regional Office)

Tel: +966 11 500 6659
Address: Level 7, 3.09, District 3, King Abdullah
Financial District, Riyadh, Saudi Arabia

Qualitest Singapore (ASIA PACIFIC Regional Office)

Tel: +65 6393 5480 | E-mail: singapore@qualitest-inc.com
Address: 50 Raffles Place, Singapore Land Tower,
Level 46, Singapore, 048623.

Qualitest Indonesia (Representative Office)

Tel: +62 21 2985 9522 | Fax: +62 21 2985 9889
E-mail: indonesia@qualitest-inc.com
Address: One Pacific Place Level 11, Jl. Jend. Sudirman,
Kav. 52-53, SCBD Area, Jakarta 12190, Indonesia.

Qualitest FZE (Regional GCC/ME Office)

Tel: +971 4 8819252 | Fax: +971 4 8819262
Email: gcc@qualitest-inc.com
Address: Jafza One, BB 1610, Jebel Ali Free Zone,
PO Box 261440, Dubai, UAE.

Qualitest India

E-mail: india@qualitest-inc.com
Address: 15th Floor, Dev Corpora, Pokhran Road No.1,
Eastern Express Highway, Thane, Maharashtra,
Mumbai, 400601, India

