

# FreeZone Triad -85 C, -121 F Freeze Dryers



FreeZone Triad Benchtop Freeze Dryers are designed for multiple types of lyophilization: flask, bulk and stoppering vials. With the ability to freeze dry samples in so many different forms, the Triad's versatility and compact design make it perfect for busy labs.

The upright stainless steel collector coil holds 2.5 liters of ice before defrosting. Two 1/3 hp HCFC/CFC-free refrigeration compressors cool the collector to -85° C (-121° F), suitable for aqueous or dilute acetonitrile samples.

Temperature-controlled shelves range from -55 C to +50° C (-67° F to +122° F) and a maximum of -75° C (-103° F) during pre-freezing. The shelves provide pneumatic stoppering with a diaphragm, eliminating the need for compressed gas.

**Lyo-Works™ OS** provides a real time display of collector temperature and vacuum level, shown on a 5" full color, capacitive touch screen. A stoppering tray dryer and four valve ports are built-in.

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Киргизия (996)312-96-26-47

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<https://labconco.nt-rt.ru/> || [bon@nt-rt.ru](mailto:bon@nt-rt.ru)

These all-in-one, dual refrigeration freeze dryers/stoppering tray dryers reach -85° C for processing low eutectic point samples. One large shelf holds small containers or bulk samples.

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### Additional Features & Specifications

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#### Features (All Models)

- Stainless steel collector coil capable of removing 1.84 L of water in 24 hours and holding 2.5 L of ice before defrosting
- Two 1/3 hp HCFC/CFC-free refrigeration compressors cool the collector to -85° C (-121° F) and work in concert with a 1000-watt heater to cool and heat fluid medium circulating through channels in the shelf. Not for use with samples containing methanol or ethanol
- Processing shelf, 12.4" w x 14.5" d (31.5 x 36.8 cm).  
Spacing between shelf and top of chamber accommodates containers with stoppers up to 148 mm maximum height
- One probe for monitoring temperature of sample in chamber
- Temperature ramp and hold programming from -55° C to +50° C (-67° F to +122° F) and -75° C (-103° F) during  
Memory to store 30 programs with 16 segments each including number of steps, ramp rate, shelf temperature, hold time and vacuum level
- Full color, 5" capacitive touch screen with Lyo-Works™  
OS:

- Real time display of collector temperature and vacuum level
- Creation and storage for up to 30 programs with up to 16 steps each. Ability to set ramp rate, shelf temperature, shelf temperature time and vacuum set point per step
- Manual start-up buttons for collector and shelf temperature control and vacuum pull down
- Alerts, diagnostic tests, user manual and defrost control
- Data logging stores and displays data in table or graph format, and may be exported via USB or Ethernet
- Settings include language (English, Spanish, French, German, or Italian), time, temperature (° C or ° F) and vacuum (mBar, Torr or Pa)
- Alerts can be emailed to user-entered addresses via Ethernet connection
- Vacuum pump maintenance alert
- Security lock-out
- Pneumatic stoppering mechanism with diaphragm and plate. **No compressed gas is required**
- Stoppering control knob, vacuum release control knob and 1/8" OD user-supplied sterile/inert gas backfill port
- Four left side-mounted neoprene valves with molded plastic knobs and fittings that accommodate 1/2" and 3/4" flask adapters
- USB port and Ethernet connection
- Electrical receptacle for vacuum pump
- Hot gas defrost with stainless steel drain pan, silicone
- Vacuum control valve
- Vacuum break valve
- Stainless steel and powder-coated steel exterior
- Clear acrylic door, 1" thick, with silicon gasket and latch 3/4" OD vacuum connection. 36" long, 3/4" ID vacuum hose with two clamps

### Options Include

- Region-specific electrical plug configurations

### Required Accessories (Not Included)

- Vacuum pump with a displacement of at least 98 L/min,  
0.002 mBar ultimate pressure and fitting for 3/4" ID  
vacuum hose
- Freeze dry glassware if not bulk freeze drying

#### [FreeZone Triad Benchtop Freeze Dryer](#)



**Catalog # 794001010**

**Region:** U.S. and Canada,  
International

**Collector Temperature:** -85° C,  
-121° F

**Ice Holding Capacity:** 2.5L

**Plug Type:** North America, 230V

**Style:** Benchtop

#### [FreeZone Triad Benchtop Freeze Dryer](#)



**Catalog # 794001015**

**Region:** International

**Collector Temperature:** -85° C,  
-121° F

**Ice Holding Capacity:** 2.5L

**Plug Type:** Saudi Arabia

**Style:** Benchtop

#### [FreeZone Triad Benchtop Freeze Dryer](#)



**Catalog # 794001030**

**Region:** International

**Collector Temperature:** -85° C,  
-121° F

**Plug Type:** Schuko

**Style:** Benchtop

#### [FreeZone Triad Benchtop Freeze Dryer](#)



**Catalog # 794001040**

**Region:** International

**Collector Temperature:** -85° C,  
-121° F

**Plug Type:** China/Australia

**Style:** Benchtop

#### [FreeZone Triad Benchtop Freeze Dryer](#)



**Catalog # 794001050**

**Region:** International

**Collector Temperature:** -85° C,  
-121° F

**Ice Holding Capacity:** 2.5L

**Plug Type:** British (UK)

**Style:** Benchtop

#### [FreeZone Triad Benchtop Freeze Dryer](#)



**Catalog # 794001070**

**Region:** International

**Collector Temperature:** -85° C,  
-121° F

**Ice Holding Capacity:** 2.5L

**Plug Type:** India

**Style:** Benchtop

[FreeZone Triad Cascade](#)  
[Benchtop Freeze Dryer](#)



**Catalog # 7400030**

**Region:** International  
**Collector Temperature:** -84° C,  
-119° F  
**Ice Holding Capacity:** 2.5L  
**Options Included:** Stoppering Tray  
Dryer  
**Plug Type:** Schuko  
**Style:** Benchtop

[FreeZone Triad Cascade](#)  
[Benchtop Freeze Dryer](#)



**Catalog # 7400070**

**Region:** International  
**Collector Temperature:** -84° C,  
-119° F  
**Ice Holding Capacity:** 2.5L  
**Options Included:** Stoppering Tray  
Dryer  
**Plug Type:** China/Australia  
**Style:** Benchtop

[FreeZone Triad Cascade](#)  
[Benchtop Freeze Dryer](#)



**Catalog # 7400060**

**Region:** International  
**Collector Temperature:** -84° C,  
-119° F  
**Ice Holding Capacity:** 2.5L  
**Options Included:** Stoppering Tray  
Dryer  
**Plug Type:** British (UK)  
**Style:** Benchtop

[FreeZone Triad Cascade](#)  
[Benchtop Freeze Dryer](#)



**Catalog # 7400040**

**Region:** U.S. and Canada  
**Collector Temperature:** -84° C,  
-119° F  
**Ice Holding Capacity:** 2.5L  
**Options Included:** Stoppering Tray  
Dryer  
**Plug Type:** North America, 230V  
**Style:** Benchtop

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