

# End-Zone™ Starter Kit & Add-On Kit

## Specifications & Ordering Information

### \* Labconco Exclusive Feature

**End-Zone** provides an alternative to visual inspection, eliminating the guesswork of knowing when lyophilization is complete. End-Zone alerts when sample moisture levels are below your specified value. It detects when end point has been reached by comparing the vacuum level of an empty valve to the vacuum level inside a Fast-Freeze Flask containing a sample. Lyo-Works shows the end point alert on your freeze dryer's display and, if programmed, sends an email.

The **End-Zone Starter Kit** has all the components needed to detect end point in one 600 ml or larger Fast-Freeze Flask:

- 26-pin cable for connecting the End-Zone sensors to any FreeZone Freeze Dryer with Lyo-Works (freeze dryer sold separately)
- Holder, mountable to the freeze dryer, with space for up to six sensors
- Two vacuum sensors—a sample sensor for placement in the Fast-Freeze Flask and a reference sensor for placement in an empty valve port
- Valve adapter to facilitate connection of sensor to empty valve port
- Fast-Freeze Flask top with opening for insertion of the vacuum sensor (flask bottom is required)

The **End-Zone Add-On Kit** comes with an additional vacuum sensor with communication cable and flask top. Up to four End-Zone Add-On Kits may be used.

**780901000—End-Zone Starter Kit.** Has components for detecting end point in one flask. Includes powder-coated steel 6-position sensor holder, two vacuum sensors with communication cables, one valve adapter and one top for 600 ml or larger Fast-Freeze Flask. **FreeZone Freeze Dryer with Lyo-Works OS, drying chamber or manifold, vacuum pump, 600 ml or larger Fast-Freeze Flask and Adapter are required for operation (not compatible with FreeZone Stoppering Tray Dryers, Bulk Tray Dryers or FreeZone Legacy Freeze Dryers).** Shipping weight 3.0 lbs. (1.4 kg)



End-Zone Starter Kit 780901000 is shown connected to FreeZone 4.5 Liter Benchtop Freeze Dryer 700401000 with 8-Port Manifold 7201800



End-Zone Starter Kit 780901000

**780902000—End-Zone Add-On Kit.** Includes one vacuum sensor with communication cable, one valve adapter, one top for 600 ml or larger Fast-Freeze Flask. **Requires End-Zone Starter Kit.** Shipping weight 3.0 lbs. (1.4 kg)

# FreeZone® Benchtop Shell Freezers

## All models feature:

- Stainless steel and powder-coated steel exterior
- 1/2 hp HCFC/CFC-free refrigeration system to cool the heat transfer solution to -40° C (-40° F)
- Stainless steel bath, 5.5" w x 12.0" d x 6.5" h (14.0 x 30.5 x 16.5 cm), surrounded by urethane foam insulation with white high-density polyethylene cover. Two chain-driven rollers, powered by a sparkless induction motor, rotate flasks up to 1200 ml. **Approximately two liters of transfer solution are required (not included)**
- LED temperature "wave" for display of bath temperature from -20° to -42° C (-4 to -43.6° F). LEDs illuminate amber as the system cools  
When system reaches operating temperature, bottom LED illuminates green
- Retractable drain hose
- Overall dimensions: 15.1" w x 22.1" d x 19.7" h (38.4 x 56.1 x 50.0 cm)

## Models conform to the following standards:

- UL Standard 61010-1 (115/230V, 60 Hz models)
- CAN/CSA C22.2 No. 61010-1 (115/230V, 60 Hz models)
- CE Conformity marking (230V, 50 Hz models)

## Option includes:

- Region-specific electrical configurations



## Fast-Freeze Flask Capacity

Flask Size	Quantity
40 ml	2
80 ml	2
120 ml	2
150 ml	2
300 ml	1
600 ml	1
750 ml	1
900 ml	1
1200 ml	1

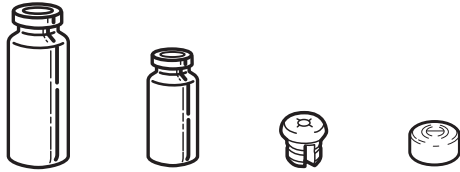
**FreeZone Benchtop Shell Freezers** provide a compact system for pre-freezing samples for lyophilization. The stainless steel bath has two rollers that rotate Fast-Freeze Flasks in a low temperature heat transfer solution, such as methanol or ethanol, so that a uniform thin coating of sample freezes to the interior surface of the container. Shell freezing increases the surface area to volume ratio, which facilitates efficient vapor flow from sample to collector during lyophilization.

Catalog Number	Electrical Requirements	Plug Type	Shipping Weight
<b>7949020</b>	115V, 60 Hz, 6A	115V, 15A	96 lbs. (44 kg)
<b>7949040</b>	230V, 60 Hz, 3A	North America, 230V	96 lbs. (44 kg)
<b>7949030</b>	230V, 50 Hz, 3A	Schuko	96 lbs. (44 kg)
<b>7949060</b>	230V, 50 Hz, 3A	British (UK)	96 lbs. (44 kg)
<b>7949070</b>	230V, 50 Hz, 3A	China/Australia	96 lbs. (44 kg)

# Serum Bottles, Ampoules & Accessories



**Serum Bottles.** Specifically designed for lyophilization, Labconco Serum Bottles have uniform thin walls to even freezing and drying. They fit on shelves in tray dryers and connect to valve ports on manifolds and drying chambers. Serum Bottles, Stoppers and Seals supplied in packages of 100.



Size	20 mm Corkage	13 mm Corkage	Split Stoppers	Aluminum Seals
2 ml		7575010	7576010	7577010
3 ml		7575210	7576010	7577010
5 ml	7573010		7576210	7577110
10 ml	7573210		7576210	7577110
20 ml	7573410		7576210	7577110
30 ml	7573610		7576210	7577110
50 ml	7573810		7576210	7577110
100 ml	7574010		7576210	7577110
125 ml	7574210		7576210	7577110

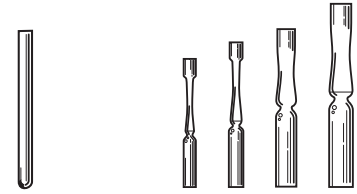


**Seal Crimpers.** Secure tear-away Aluminum Seals.

**7578000—Seal Crimper.** For 13 mm corkage. Shipping weight 3.0 lbs. (1.4 kg)

**7578100—Seal Crimper.** For 20 mm corkage. Shipping weight 3.0 lbs. (1.4 kg)

**Ampoules.** High quality borosilicate glass for strength and durability. Package of 100.



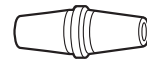
Size	Straight	Pre-Scored Flat Bottom
1 ml	7572710	7570610
2 ml		7570810
5 ml		7571010
10 ml		7571210

**Ampule Pods.** Allow multiple ampoules to attach to a single drying chamber or manifold valve port to maximize sample capacity. Polypropylene base with 15 silicone tubing ports, 15 plugs and two clamps. Include one straight stainless steel adapter for connection to a drying accessory valve port. 3.8" w x 3.8" d x 7.5" h (9.7 x 9.7 x 19.1 cm). Shipping weight 2.5 lbs. (1.1 kg)

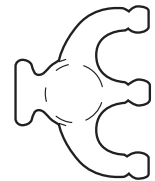


Catalog Number	Tubing Port Diameter	For Use With Ampule
7205100	1/4" ID	7572710, 7571010
7205101	3/8" ID	7570610, 7570810, 7571210

**7593401—Ampule Valve Adapters.** Connect ampoules to valve ports. 10 per package. Shipping weight 0.5 lb. (0.2 kg)



**7762700—Three Way Adapter.** Permits attachment of three ampoules to a single valve port. Ampoules are attached using Ampule Valve Adapters 7593401 or 1/8" surgical tubing (valve adapters and tubing not provided). Cavity in adapter body can be filled with cotton fiber media to help prevent contamination between samples. Shipping weight 0.2 lb. (0.1 kg).



**7578500—Oxygen/Natural Gas Sealing Torch.** Specifically designed for flame sealing freeze dry ampoules. Seals all types of heat-resistant glass. Connects to natural gas, butane or propane and oxygen with 1/4" ID hose connectors. Shipping weight 3.0 lbs. (1.4 kg)



## Carts, Shelves & Gauges



**7368700—FreeZone Cart.** Powder-coated steel cart supports FreeZone Benchtop, Legacy Benchtop and Triad Freeze Dryers. 5.0" dia. (12.7 cm) casters. Bottom shelf accommodates a vacuum pump. 23.3" (59.2 cm) between shelves. Load capacity of 450 lbs. (204 kg). 28.0" w x 28.0" d x 31.3" h (71.1 x 71.1 x 79.5 cm). Shipping weight 120 lbs. (54 kg)



**7426400—Support Shelves.** Attach easily to the sides of the FreeZone Benchtop, Legacy Benchtop and Triad Freeze Dryers (left side only) to provide support for large flasks attached to the drying chamber or manifold. Multiple rows of perforations on the FreeZone cabinet allow for height adjustment of the shelves to support flasks of various sizes. One pair. Powder-coated steel. Each shelf is 7.4" w x 12.0" d (18.7 x 30.5 cm). Shipping weight 2.0 lbs. (0.9 kg)



**8007000—Utility Cart.** Upper shelf supports FreeZone 2.5 Liter -50° C Freeze Dryer, PrimeMate or other small equipment for transport. Lower 2.0" (5.1 cm) deep powder-coated steel removable watertight pan holds lightweight supplies. Power strip with 115 volts, 60 Hz, 12 amps capacity, has 6 electrical outlets, cord bracket and a 12' (3.7 m), 3-wire cord and plug. Two corrosion-resistant, one-piece, vacuum-formed ABS plastic drawers, 15.75" w x 14.9" d x 4.2" h (40.0 x 37.8 x 10.7 cm), hold small supplies. 4.0" dia. (10 cm) casters, two with toe locks. Load capacity of 400 lbs. (181 kg). Lifetime guarantee. 34.9" w x 19.0" d x 36.4" h (88.6 x 48.3 x 92.4 cm) Shipping weight 70 lbs. (32 kg)

⚠️**WARNING:** Cancer - P65Warnings.ca.gov (California only)



**Digital Electronic Vacuum Gauges.** LCD displays vacuum measurement in mBar, Torr or Pa. Range is 0.02 mBar to 5 mBar. Stainless steel and powder-coated steel casing, 8.1" w x 4.1" d x 6.4" h (20.6 x 10.4 x 16.3 cm). Include a cord with 3/8" to 1/2" OD adapter for connection to either vacuum tubing or a valve on a drying accessory. All FreeZone and FreeZone Legacy Freeze Dryers include a vacuum gauge. The Dry Ice Benchtop Freeze Dryer or other freeze dryers may use the Digital Electronic Vacuum Gauge as an accessory.

Catalog Number	Electrical Requirements	Shipping Weight
7395000	115V, 60 Hz, 0.4A	10 lbs. (5 kg)
7395001*	230V, 50 Hz, 0.2A	10 lbs. (5 kg)

\*International electrical configuration

## Authorised distributor

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**In Australia:**

For customer service, call 1300-735-292

To fax an order, use 1800-067-639

To email an order, [ordersau@thermofisher.com](mailto:ordersau@thermofisher.com)

**In New Zealand:**

For customer service, call 0800-933-966

To fax an order, use 0800-329-246

To email an order, [ordersnz@thermofisher.com](mailto:ordersnz@thermofisher.com)

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