

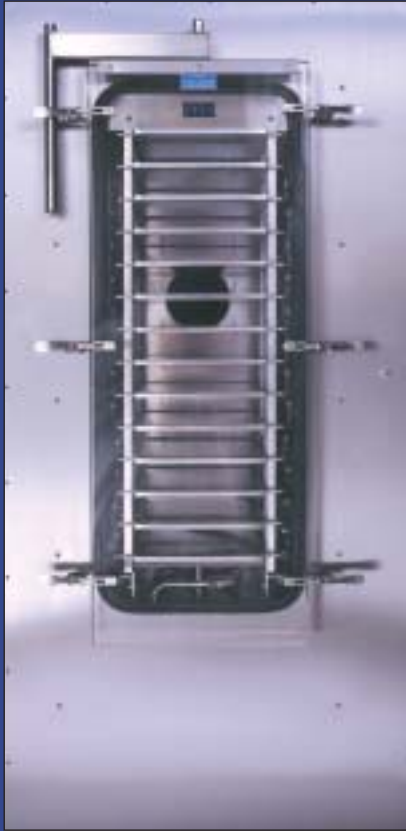


# ULTRA Series FREEZE DRYERS



Custom Configured To Your Application

## VirTis Customizes Freeze Drying, with the Ultra Series Freeze Dryers



Ultra 35EL clean room configuration

**The Ultra Series Freeze Dryer** has been re-engineered to handle all of your applications from phase one research through production clinical trial batches. With valuable information provided by our end-users, we have made design enhancements enabling the pharmaceutical, biotech, tissue bank, and combinatorial chemistry industries to develop and process their samples efficiently. (The industry standards demand high quality versatile equipment that can process bulk products, vials with unlimited shapes and sizes and large numbers of microtiter plates.) With all of the different configurations and new features, VirTis can provide a custom freeze dryer for any processing requirement.

### New Features:

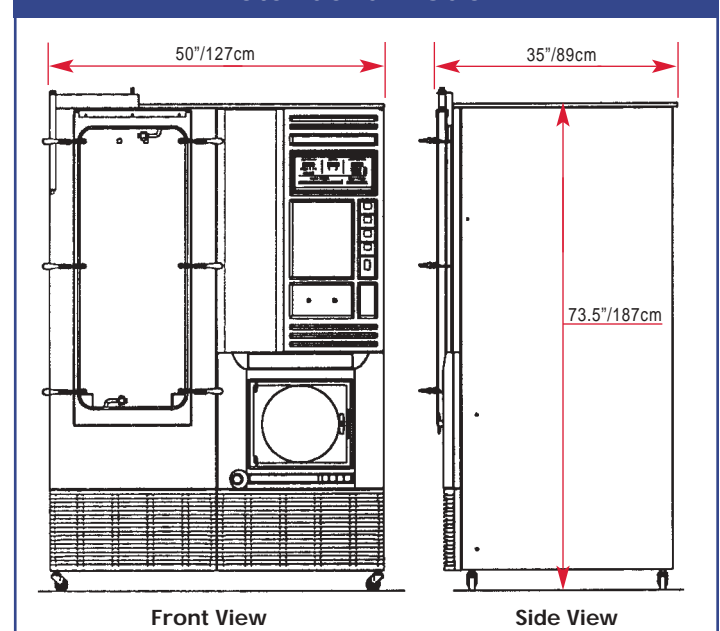
- Single product chamber design, allows for larger batches, product uniformity, and ease of validation.
- Product chamber, condenser and product shelves are constructed of 316L stainless steel.
- Usable shelf area available from 6 ft<sup>2</sup> up to 23 ft<sup>2</sup> for pilot scale research to production applications.
- Non-restrictive six-inch vapor port allows an increased vapor flow and better equalization between chamber and condenser pressures.

- New Super EL refrigeration system achieves -70°C shelf temperature and -90°C condenser temperature.
- Microprocessor based Wizard controller automates your cycle with an accessory user friendly computer workstation for data trending and documentation.
- Optional Allen Bradley PLC based controls offer Pirani gauge and/or capacitance manometer vacuum gauges, moisture analyzer, barometric endpoint testing, security systems, batch reports and many other options. These options provide easy documentation for research and FDA requirements.

### Optional Configurations:

- Bottom up hydraulic stoppering for vials with latching for various vial sizes.
- Fixed shelves for bulk processing.
- Full visibility product chamber door.
- Compact design for easy installation, fits through standard doorways.
- Condenser capacities of 25 or 35 liters.
- Pneumatic or electric butterfly isolation valve used for barometric endpoint testing and isolating the chamber while defrosting the condenser.
- Smooth condenser wall for quick defrost and easy cleaning.
- Five refrigeration packages available with single or dual compressor systems.
- Stroke Savers for processing partial vial loads.
- Oil less vacuum systems available.
- Stainless steel Bio-seal flange for clean room installation.
- Standard 400 LPM vacuum pump with optional 590 LPM available.
- From four to fifteen product shelves available for all your processing needs.
- I.Q./O.Q. validation assistance and documentation available.

### Standard Model



## Lyophilization Control System:



## Maestro Controls:

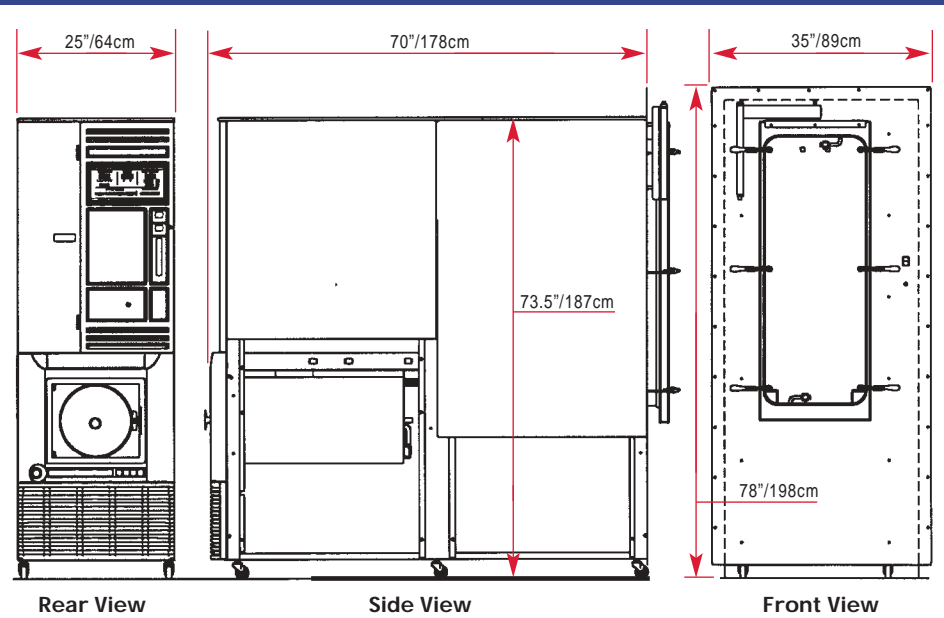
Automate your freeze drying cycle with our user-friendly Maestro, Allen Bradley PLC based control system. The Maestro system operates with Intellution Fix™ and Microsoft Windows NT™ to provide precise control of your freeze drying cycle with many steps for freezing and drying your product.

### Maestro options include:

- Eutectic resistance monitoring.
- Unlimited product probes available.
- Batch reports for data collection from process parameters into a customized report summary for validation and FDA required documentation.
- Multilevel password protection from operator to administrative level to safeguard sensitive products and information.
- Barometric endpoint and moisture sensor to determine product moisture during primary and secondary drying.
- Uninterrupted power supply for monitoring and data collection in the event of a power failure.



## Clean Room Model



High throughput 6-inch port with isolation valve for separating of product chamber from condenser for defrost and automatic pressure rise testing.



High capacity smooth walled condenser for ease of defrost and cleaning with clear Lucite door for visibility of ice formation.

## ULTRA 25 AND 35 SERIES FREEZE DRYERS SPECIFICATIONS

SHELF CONFIGURATION	BULK/*STOPPERING-Shelf Area, ft <sup>2</sup> /m <sup>2</sup>	BULK (in/mm)	*STOPPERING (in/mm)
4 Shelf	6.12 (0.57)	8.88/225	8.44/214
5 Shelf	7.65 (0.71)	7.03/178	6.68/169
6 Shelf	9.18 (.085)	5.79/146	5.51/139
7 Shelf	10.71 (1.00)	4.91/124	4.67/118
8 Shelf	12.24 (1.14)	4.25/107	4.04/102
9 Shelf	13.77 (1.28)	3.74/94	3.55/89
10 Shelf	15.30 (1.42)	3.33/84	3.15/79
11 Shelf	16.83 (1.56)	2.99/75	2.83/71
12 Shelf	18.36 (1.71)	2.71/68	2.56/64
13 Shelf	19.89 (1.85)	2.47/62	2.34/59
14 Shelf	21.43 (1.99)	2.27/57	2.14/54
15 Shelf	22.96 (2.13)	2.09/53	1.97/50
Shelf Size: W x D, in/mm 10.75 x 20.5 (273 x 521)		(Shelf Clearance)	(Shelf Clearance)

MODEL TYPES	ES	XL	LE	EL	Super EL
Shelf Temperature (°C)	-50°	-60°	-48°	-70°	-70°
Condenser Temperature (°C)	-55°	-70°	-53°	-85°	-90°
Number of Compressors	1	1	2	2	2
Shelf Temperature Control	To 65°C ± 0.5°C, shelf to shelf				
Vacuum Systems	400 or 590 Liter Per Minute vacuum pumps evacuate chamber in 20 minutes or less				
Stoppering Systems	Bottom-up hydraulic				
Construction of Chambers	316L Stainless Steel				
Condenser Capacities	25 and 35 Liters available on all models				

### LITERS OF BULK MATERIAL (Per Shelf)

Per Shelf (Tray 10.75" x 20.5", 25.4 cm x 50.8 cm)	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15
For 3/4" (19 mm) Fill Depth: Liters	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.8	31.2	33.6	36.0
For 1/2" (13 mm) Fill Depth: Liters	6.4	8.0	9.6	11.2	12.8	14.4	16.0	17.6	19.2	20.8	22.4	24.0

### VIAL CAPACITY CHART

Capacity (ml)	Height (1) (mm)	Body (outer diam. -mm)	Qty Per 10.75" x 20.5" Tray (25.4 cm x 50.8cm)	Catalog Order Number	
2	33	15	627	(2)179077	<p>(1) Add 8mm for partially inserted stopper.</p> <p>(2) Thin wall type.</p> <p>(3) Special stoppering ampule: Add 10mm for partially inserted stopper.</p> <p>(4) Requires support grid for stoppering.</p>
2	86	12	(4) 578	(3)179275	
5	40	22	264	(2)179101	
5	47	23	252	179085	
10	50	24	220	(2)179143	
10	54	26	198	179135	
20	63	29	152	(2)178855	
20	58	33	119	178830	
30	63	37	91	178897	
50	73	43	66	178921	
100	95	52	45	178954	
125	107	54	40	178988	

\* A shelf latching kit or spacer may be required depending on shelf arrangement and vial height.

Note: All temperature specifications based on an ambient temperature of 20°C. Specifications are subject to change without notice. Contact VirTis for latest revision.

All freeze dryers are built in our ISO 9001-registered facilities to meet the most exacting current Good Manufacturing Practices (cGMP) standards. VirTis offers the best warranties in the business and a 24-hour emergency support line. Our experienced product managers are waiting to work with you to meet your requirements, budget and time line. For more information, call VirTis at 800.431.8232 or contact your local representative today.

**Always At  
Your Service With Our  
24-HOUR  
RESPONSE TEAM  
CALL 1.800.765.6198**

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