

VirTis AdVantage 2.0

Benchtop Freeze Dryer

Advantage 2.0



Key Features

- Offers the capabilities of a pilot-scale freeze dryer.
- Includes the easy-to-use, microprocessor-based Wizard 2.0 controller.
- Available with bulk or removable bottom stainless steel trays.
- Optional pneumatic stoppering system available for processing in vials.

Performance Specifications

Item	ES	XL	EL
Shelf Temperature Control Range (°C)†	-40 to 60	-50 to 60	-55 to 60
Lowest Shelf Temperature (50 Hz / 60 Hz, °C)	-47 / -50	-57 / -60	-67 / -70
Lowest Condenser Temperature (50 Hz / 60 Hz, °C)	-50 / -53	-67 / -70	-82 / -85
Maximum Condenser Capacity (L)	3.5	3.5	3.5
Maximum Ice Condensing Capacity in 24 hours (L)†	2	2	2
Maximum Deposition Rate (L/hour)†	0.08	0.08	0.08
Shelf Pull-Down from 20 °C to -40 °C (minutes)§	≤ 60	≤ 45	≤ 45
Number of Compressors	1	1	2
Compressor Horsepower	1/3	3/8	1/3, 1/3
System Refrigerant	MO 89	R245fa / R508B	R508B, R407C
Vacuum Rate of Rise (mT/hour)	≤ 60	≤ 60	≤ 60
Volume-Based Leak Rate (mbar·L/sec)	≤ .0009	≤ .0009	≤ .0009

Note: Performance specifications are based on SP Scientific test data from units operating at an ambient room temperature of approximately 20 °C. SP Scientific recommends an operating range of 15-25 °C (59-77 °F).

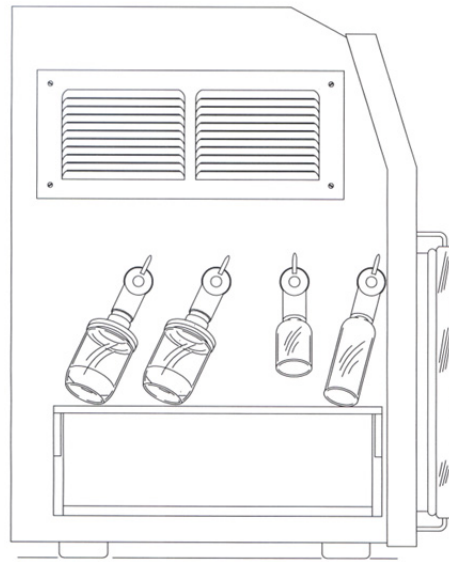
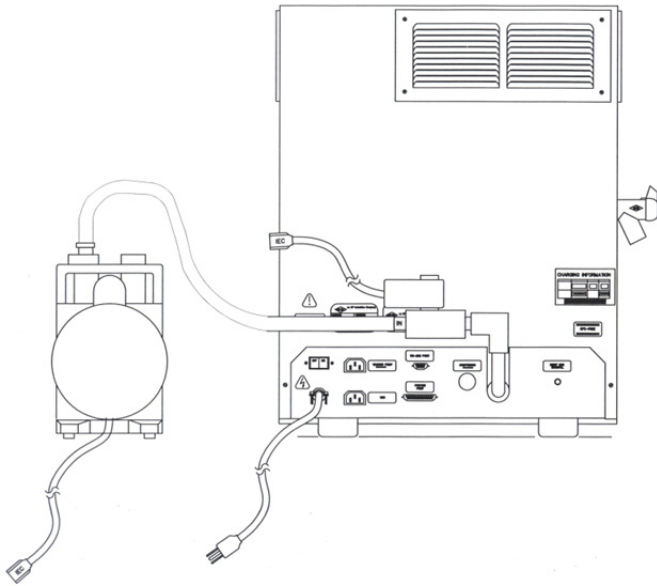
Electrical Requirements

	ES and XL			EL	
	ES	XL	EL	ES	XL
Voltage (VAC)†	100/115	208/230	200/240	208/230	200/240
Hertz†	50/60	60	50	60	50
Phase†	1	1	1	1	1
Breaker Amperage†	15	10	10	15	15
NEMA Receptacle	5-15R	6-15R	N/A	6-15R	N/A

Utility Requirements

Item	ES	XL	EL
Compressed Air for Stoppering (psig)	60-90	60-90	60-90
With Vacuum Pump			
Approx. Peak Heat Generated (BTU/h)	4,000	4,000	6,000
Without Vacuum Pump			
Approx. Peak Heat Generated (BTU/h)	3,000	3,000	5,000

Standard Configuration



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Dimensional Data

Width (in / mm)	25.75 / 654
Depth (in / mm)	28 / 711
Height (in / mm)	28.75 / 730
Approximate Weight (lb / kg) ¶	260 / 117

Shelf Configuration

	Shelf Clearance (in / mm)	Shelf Area (in ² / cm ²)
Bulk Drying	5.5 / 140	150 / 970
Pneumatic Stoppering	4.6 / 117	150 / 970

Additional Information

Shelf Construction	Aluminum Alloy Casting with Corrosion-Resistant Surface
Chamber Construction	304 Stainless Steel
Chamber Door	Full-View Acrylic
Nominal Shelf Size (W x D x TH)	10.75 in X 14 in X 0.75 in (273 mm X 355 mm X 19 mm)
Vacuum Pump (Required, not included)	Two-Stage Rotary Vane or Suitable Dry Pump
Stoppering (Optional)	Top-Down Pneumatic (4 in stroke length)
Defrost Type	Hot Gas
Refrigerant Type	CFC Free
Condenser Type	Internal
Inert Gas Port	3/8-inch hose barb fitting
Compressed Air Inlet (Stoppering)	1/4-inch FPT fitting

* VirTis units are highly customizable and SP Scientific can configure any unit to conform to the service requirements of a wide range of international voltage and phase configurations. Contact SP Scientific for more information.

† The specified Maximum Ice Condensing Capacity in 24 Hours and the Maximum Deposition Rate are based on the process of freeze-drying water as aggressively as possible. The freeze dryer's ability to collect ice at an hourly rate or over a specified period will always be application dependent.

‡ Shelf temperature controlled to within ± 1.0 °C of the setpoint within the Shelf Temperature Control Range.

§ Shelf pull-down times are based on tests performed with no load at "pre-seal" pressure (approximately 400-500 mbar).

¶ Weight specified is for an Advantage 2.0 with EL refrigeration package. Units with an ES or XL refrigeration package shall have a lower total weight.