

# VirTis AdVantage Pro™

## Laboratory Benchtop Freeze Dryer



### Key Features

- Experience the advantages of a tray dryer in a benchtop unit.
- Operate the unit using Intellitronics' vivid, full-color touchscreen.
- Receive alarm alerts via email.
- Stopper vials automatically with the pneumatic stoppering option.
- Condense up to 4 liters of ice over 24 hours.
- Order with up to three (3) usable shelves.

### Electrical Requirements

	XL	EL
Voltage	208-230 VAC	208-230 VAC
Hertz	50 / 60 Hz	50 / 60 Hz
Breaker Amperage (Type D)	15 A	15 A
Phase	Single	Single
Receptacle <sup>§</sup>	6-15R (Domestic Only)	6-15R (Domestic Only)

### Performance Specifications

	XL	EL
Shelf Temperature Control Range*	-40 to 60 °C	-55 to 60 °C
Lowest Shelf Temperature <sup>†</sup> (50 Hz / 60 Hz)	-57 °C / -60 °C	-62 °C / -65 °C
Shelf Pull-Down from 20 °C to -40 °C <sup>‡</sup>	≤ 40 minutes	≤ 30 minutes
Temperature Uniformity <sup>¶</sup>	± 1.0 °C	± 1.0 °C
Lowest Condenser Temperature <sup>†</sup> (50 Hz / 60 Hz)	-67 °C / -70 °C	-82 °C / -85 °C
Maximum Condenser Capacity	6 L	6 L
Maximum Ice Condensing Capacity in 24 hours <sup>  </sup>	4 L	4 L
Maximum Deposition Rate <sup>  </sup>	0.17 L/hour	0.17 L/hour
Vacuum Rate of Rise	≤ 60 mT/hour (≤ 0.08 mbar/hour)	≤ 60 mT/hour (≤ 0.08 mbar/hour)
Number of Compressors	1	2
Compressor Horsepower	3/4	1/3, 3/4
System Refrigerant	R245fa, R508B	R508B, R407C

**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).

### Utility Requirements

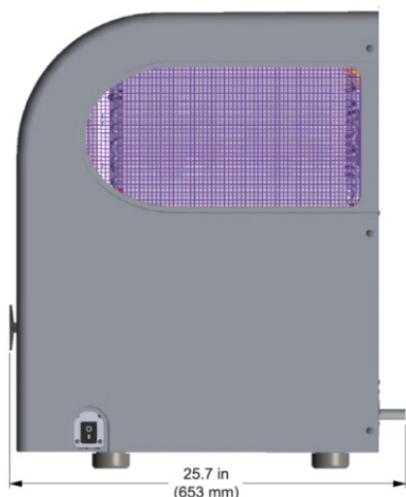
	XL	EL
Compressed Air (Stoppering Option Only)	60 - 90 psig (4.1 - 6.2 bar)	60 - 90 psig (4.1 - 6.2 bar)
Approx. Peak Heat Generated (With Vacuum Pump)	5,000 BTU/h (1.5 kW)	7,000 BTU/h (2 kW)
Approx. Peak Heat Generated (Without Vacuum Pump)	4,000 BTU/h (1.2 kW)	6,000 BTU/h (1.8 kW)

### Agency Approvals

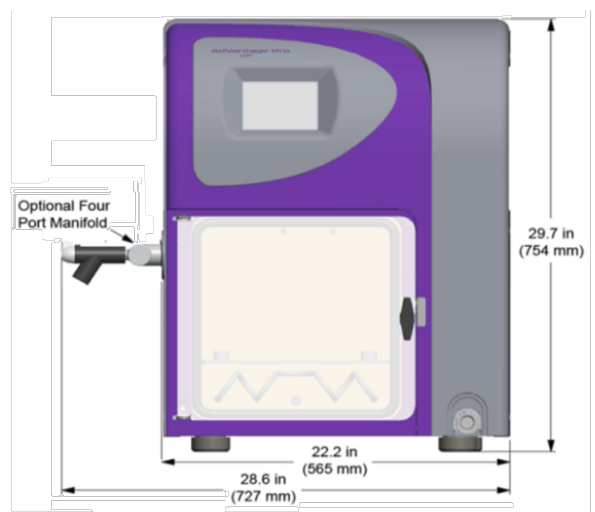
CCE (2006/42/EC)	(2004/108/EC)	(2006/95/EC)
------------------	---------------	--------------

# VirTis AdVantage Pro™

## Laboratory Benchtop Freeze Dryer



**Dimensional Data**



**Shelf Configuration**

	XL	EL		Shelf Clearance	Shelf Area
Width	22.2 in (565 mm)	22.2 in (565 mm)	1 Shelf	6.2 in (158 mm)	143 in <sup>2</sup> (922 cm <sup>2</sup> )
Depth	25.7 in (653 mm)	25.7 in (653 mm)	2 Shelves	2.9 in (73 mm)	286 in <sup>2</sup> (1,844 cm <sup>2</sup> )
Height	29.7 in (754 mm)	29.7 in (754 mm)	3 Shelves	1.75 in (44.5 mm)	429 in <sup>2</sup> (2,766 cm <sup>2</sup> )
Weight	310 lb (140 kg)	310 lb (140 kg)	Nominal Shelf Size (W x D x TH): 10.2 X 14 X 0.4 in (260 X 355 X 9.5 mm)		

### Material of Construction

Chamber Construction	AISI Type 316L SS
Shelf Construction	AISI Type 316L SS
Chamber Door	Full-View Acrylic
Condenser Coil	AISI Type 316L SS
Four Port Manifold (Optional)	AISI Type 316L SS
Quickseal Body (Optional)	Neoprene
Quickseal Knob (Optional)	Polypropylene

### Additional Information

Vacuum Pump (Required, not included)	Two-Stage Rotary Vane or Suitable Dry Pump
Defrost Type	Hot Gas
Refrigerant	CFC Free
Condenser Type	Internal
Stoppering (Optional)	Top-Down Pneumatic
Compressed Air Inlet (Stoppering Option) <sup>††</sup>	1/4-inch BSPT fitting
Inert Gas Port	3/8-inch Hose Barb fitting

**Note:** Dimensional data specifications are for standard AdVantage Pro lyophilizers. Specifications may vary based on optional components (i.e., optional four port manifold).

\* Shelf temperature is controlled to within  $\pm 1.0$  °C of the setpoint within the Shelf Temperature Control Range.

† The Lowest Shelf Temperature and Lowest Condenser Temperature values may be lower than or equal to the Performance Specifications.

‡ Shelf pull-down times are based on tests performed with no load at "pre-seal" pressure (approximately 400-500 mbar). The increased mass of stainless steel and additional heat transfer fluid for units with more than one shelf will increase the pull-down time. Use the following multipliers when determining the pull-down time specification for the following shelf configurations: 2-shelf units, standard pull-down time x 1.5 and 3-shelf units, standard pull-down time x 2.

¶ Shelf temperature deviations shall not exceed the specification relative to the mean of the highest and lowest temperature readings.

§ SP Scientific can configure any unit to conform to the electrical requirements of a wide range of international voltage and phase configurations. The AdVantage Pro includes an IEC60320 C20 receptacle on the back of the unit. This receptacle allows for country-specific power leads to be supplied. 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

\*\* The optional shelf latching kit allows for two to one shelf latching on two-shelf units, which increases shelf clearance to 5.6 in (142.2 mm) and 3 to 2 shelf latching on 3-shelf units, which increases shelf clearance to 2.6 in (66 mm). 3 to 1 shelf latching is unavailable.

†† The Advantage Pro is configured with a 1/4-inch BSPT bulkhead fitting. A BSPT to 1/4-inch NPT adapter shall be provided with the unit, which will allow users to choose between a 1/4-inch BSPT fitting and a 1/4-inch NPT fitting.