Ultra Prime 50

Pilot Freeze Dryer

SP VirTis

Transform Your Workflow.

The VirTis Ultra Prime 50 combines the power and reliability of a VirTis freeze-dryer with a compact, configurable design. Perfect for small-batch production, diagnostic kit manufacturing, tissue banking, and more, it enhances workflow while providing precise, repeatable results..

Key Features & Benefits

- **Compact, Space-Saving Design**
  Free-standing mobile design **fits into labs or cleanrooms** with limited space, while **allowing easy installation**.
- **Improved Software Interface**
  Integrated Lyologic allows for a better customer experience and interface to aid in improving cycle development and **reducing cycle times.**
- **Single Product Chamber**
  Supports larger batches while maintaining **uniform product quality across shelves**.
- **Versatile Control Options**
  Available with Merlin or LyoLogic® HMI systems for **intuitive, precise operation and increased functionality**. LyoLogic® also avaiable in 21 CFR capable version
- **Efficient Cleaning & Maintenance**
  Smooth-walled condenser and easy defrost system **minimize turnaround time** and **simplify cleaning.**
- **Customizable Configurations**
  Options include bulk or stoppering layouts, up to 15 shelves, solvent packages, and configurations for **cleanroom installations.**
- **Lower GWP Refrigerants**
  Optimized cooling performance with environmentally friendly **CFC-free** refrigerants
- **Modifiable**
  Easily latch one or multiple shelves in seconds to allow for maximum flexibility when changing container sizes

Why Choose Ultra Prime 50?

- **Handles a wide variety of applications with precise temperature control (shelf temperatures to -70°C, condenser to -85°C)**
- **Flexible system configurations for both high-moisture and low-moisture products**
- **Intuitive interface reduces operator training time**
- **Compact footprint maximizes lab space while maintaining high throughput**
- **Comprehensive Training Options**
- **Complete Service Solutions**
- **Innovative Condenser Baffle that can be modified based on your application**

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Specifications

Lowest shelf temperature (50 Hz / 60 Hz)	≤ -67°C / -70°C
Shelf temperature control range*	-55 to 65°C
Shelf Temperature Control Range Tolerance	+/- 0.5 °C
Vacuum Level Control Range	0.067 – 0.67 mbar (50 – 500 mTorr)
Volume-based leak rate§	≤ 0.0042 mbar⍰L/sec (≤ 3.2 mTorr⍰L/sec)
Lowest system vacuum§	≤ 0.2 mbar (≤ 15 mTorr)

Refrigerant Information

	Gas 1	Gas 2
F Gas	R1270	R170
GWP	2	6
EPA SNAP	IPR	VLTR
Safety Class	A3	A3
Total CO_2E	0.00256 (AC); 0.0027 (WC)	

Electrical Requirements

Voltage	Phase	Frequency	Breaker Amperage	Peak Current	Peak Power
208 VAC	1 Φ	60 Hz	50 A	35 A	7,500 VA
230 VAC	1 Φ	50 Hz	50 A	35 A	8,050 VA
400 VAC	3 Φ	50 Hz	30 A	30 A	11,500 VA

Utility Requirements

	Air-Cooled	Water-Cooled
Compressed air (for units with isolation valve)	80 psig (5.5 bar)	
Inert Gas for Backfilling	1 PSIG (70 mbar or 7 kpa)	
Ambient Room Temperature	15 -25°C (59 -77°F)	
Cooling Water	N/A	15-22 Lpm (4-6 gpm) 5-25°C, 2-4 bar (30-60 psi)
Heat Output Room, Peak	22,900 BTU/h (6.7 kW)	5,400 BTU/h (1.6 kW)

Shelf Configuration

Number of Shelves	Shelf Clearance	Recommended Vials†
8 Shelves	99.2 mm (3.90 in)	30R or Smaller
9 Shelves	86.9 mm (3.42 in)	20R or Smaller
10 Shelves	76.8 mm (3.02 in)	20R or Smaller
11 Shelves	68.7 mm (2.70 in)	20R or Smaller
12 Shelves	61.9 mm (2.44 in)	10R or Smaller
13 Shelves	56.2 mm (2.21 in)	6R or Smaller
14 Shelves	51.3 mm (2.02 in)	6R or Smaller
15 Shelves	47.0 mm (1.85 in)	2R or Smaller

Shelf size (W × D): 274.3 mm × 520.7 mm (10.8 in × 20.5 in)

Vial Capacity (estimated)

Vial Size	Diameter (mm)	Height (mm)	Height Approximately 15mm with Stopper and clearence (mm)	Tray 10x20in
2R	16	35	50	519
6R	22	40	55	264
10R	24	45	60	220
20R	30	55	70	144
30R	30	75	90	144

Additional Information

Construction	316L stainless steel shelves, product chamber and condenser chamber
Defrost type	Hot gas
Vapor Port	20.3 cm (8 in)
Temperature uniformity	± 1.0°C
Noise Level	75 dBA
Max. Weight	909 kg (2,000 lb)

Performance specifications are based on SP test data from units operating at an ambient room temperature of approximately 20°C.

SP recommends an optimum operating range of 15-25°C (59-77°F).

For full specifications please contact your regional product specialist.

** Shelf fluid inlet temperature controlled to within ± 0.5°C of the setpoint within the Shelf Temperature Control Range when at 100 mTorr.*

§ Vacuum specifications are based on Scientific Products test data from similar units equipped with a two-stage rotary vane vacuum pump

† Recommended Maximum Vial Size without latching shelves using standard shelf clearances

SP

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