Ultra Prime 30

Pilot Freeze Dryer

Transform Your Workflow.

The Ultra Prime 30 is a state-of-the-art freeze-dryer engineered for superior performance, repeatability, and sustainability. Designed with advanced LyoLogic HMI technology and a refined, space-saving footprint, Ultra Prime 30 delivers smoother operation, improved efficiency, and reduced environmental impact, setting a new standard for laboratory and small-scale production freeze-drying.

Key Features & Benefits

- **Direct Vapor Port Design**
  Engineered to mitigate choked flow, the direct vapor port delivers smoother vapor transfer and more efficient freeze-drying.
- **Space Saving Footprint**
  Refined system design reduces overall footprint while maintaining high performance, making Ultra Prime 30 well suited for space-conscious laboratory environments.
- **Advanced LyoLogic HMI Interface**
  Integrated LyoLogic HMI provides an intuitive user experience, enabling precise control, simplified operation, and improved repeatability.
- **Enhanced Cycle Efficiency**
  Upgraded system performance supports improved cycle efficiency, helping reduce energy consumption, operating costs, and environmental impact.
- **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 modern **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 30?

- **Handles a wide variety of applications with precise temperature control (shelf temperatures down to -70°C, condenser down 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**

Ultra Prime 50L Pilot Freeze Dryer

SP VirTis

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
Charge (Kg)	0.4375 (WC) 0.380 (AC)	0.3
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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