



VirTual Freeze Dryer



Ideal for product development
and small production requirements.

Designed for fast drying and high condenser loading applications. New high capacity internal coil condenser is configured to add the enhancements and features of an external condenser.

The VirTual features a robust 50 liter internal coil condenser which can condense 20 liters of water in 24 hours. Other features include: hot gas defrost for quick turnaround time and an innovative chamber isolation system for detecting the end of drying and drying progress via pressure rise testing.

The new VirTual offers the highest processing power for the smallest footprint. Special models are available for cleanroom installations. The new innovative VirTual is available with three refrigeration systems allowing shelf temperatures below

-70°C and process condenser temperatures to -90°C.

Powerful control systems allow easy scale-up from clinical and small scale batches to large scale production. Complete validation packages coupled with optional validation assistance make the pre-production phase shorter and thoroughly documented.

The VirTual's process chamber is available with four to ten shelves. Latching clips make shelf spacing change a breeze. Flexibility, processing power and a small footprint make our new VirTual an easy choice for your lyophilizer needs.

All Virtis Freeze dryers are built in our ISO 9001- registered facilities to meet the most exacting current good manufacturing practices (cGMP).

VirTual Freeze Dryer Specifications

VirTual	ES	XL	EL
Maximum Low Shelf Temperature °C	-48	-60	-70
Shelf Control Range	-40	-45	-55
Condenser Blank-Off Temperature °C	-53	-70	-90
Shelf Pull-Down to -40° C, Minutes	75	60	50
Condenser Pull-Down to -45°C, Minutes	18	25	25
Number of Compressors	1	1	2
Compressor, Horsepower (kw)	2.5 (1.9)	Auto Cascade 2.5 (1.9)	2.5, 1.5 (1.9, 1.1)
Refrigerant Type	CFC Free	CFC Free	CFC Free

1. Temperature range and specifications based on tests performed at an ambient temperature of 20° C.
2. Shelf Pull Down Rates are for 10 shelf units. Units with fewer shelves will achieve -40°C at faster rates.

Shelf Configurations Bulk/Hydraulic Stoppering Models

4 Shelf Area, ft ² /m ²	6.12 (0.57)
Clearance, in/mm	5.25 (113)
5 Shelf Area, ft ² /m ²	7.65 (0.71)
Clearance, in/mm	4.12 (104)
6 Shelf Area, ft ² /m ²	9.18 (0.85)
Clearance in/mm	3.37 (85)
7 Shelf Area, ft ² /m ²	10.71 (1.00)
Clearance in/mm	2.84 (72)
8 Shelf Area, ft ² /m ²	12.24 (1.14)
Clearance in/mm	2.43 (61)
9 Shelf Area, ft ² /m ²	13.77 (1.28)
Clearance in/mm	2.12 (53)
10 Shelf Area, ft ² /m ²	15.30 (1.42)
Clearance in/mm	1.87 (47)
Shelf Size: WxD, in/mm	10.75 x 20.5 (273 x 521)

Services Required	ES	XL	EL
Standard Electric Service* 230/1/60	230/1/60	230/1/60	230/1/60
Volts/ph/Hz	208/1/60	208/1/60	208/1/60
	220/1/50	220/1/50	220/1/50
	240/1/50	240/1/50	240/1/50
	230/3/60	230/3/60	230/3/60

Average Amperage			
Single Phase	25	25	30
Three Phase	20	20	25
Breaker Size			
Single Phase	40	40	50
Three Phase	30	30	40
Required Electrical Receptacle (NEMA) 60 Hz**			
Single Phase	6-50R	6-50R	6-50R
Three Phase	15-30R	15-30R	15-50R

Air Cooled Models Ambient Temperature for specified performance	20°C	20°C	20°C
Water Cooled Models	5 GPM	5 GPM	5 GPM
Average Cooling Water	20 LPM	20 LPM	20 LPM

*All Voltage, 230/50 and above require step-down transformer and is provided.
 **Receptacle configuration for 50 Hz units varies with different countries.

Shelves	VirTual
Shelf Fluid Heater:	2 Kilowatts
Heat Transfer Shelf Fluid:	
(Domestic)	Dow Corning Syltherm XLT™
(Foreign)	Syltherm HF™
Shelf Temperature Control:	±0.5°C
Shelf Trays:	10 x 20 x 1.5
(One Per Shelf)	(25.4 cm x 50.80 cm x 3.81 cm)
Condenser	
Condenser Full Load	50 (110)
Capacity Liters (Pounds)	
Condenser Type	Internal
Capacity in 24 Hours	
Liters/Pounds	20/(44)
Surface Area, m ² /ft ²	0.93/10
Rate of Ice Deposition	
Liters Per Hour	0.83
Defrost System	Hot Gas

Vacuum Systems	
Vacuum Pumps (corrosion resistant)	
Model,Capacity:	D16B (400 LPM) Standard D25B (590 LPM) Optional
System Blank Off Pressure:	5 Millitorr
Pull Down to 100 Millitorr:	15 to 20 Minutes
Vacuum Leak Up Rate:	Less than 30 Millitorr/Hour

Dimensional Data	Wide Standard Configuration	Narrow** Clean Room Configuration
Overall Width in/cm	50 (127)	25 (64)
Overall Height in/cm	76 (193)	76 (193)
Overall Depth in/cm	37-1/4 (95)*	74 (188)
Wall Opening		
Height/Width in/cm	N/A	76 x 31 (193 x 79)
Approximate Shipping		
Weight lbs/kg	2000 (909)	2000 (909)

*Reduces to 36" for narrow doorways.

**Clean room flange will extend 6" past machine frame to accommodate stoppering switch and inert gas port and 4" on remaining 3 sides.

Specifications are subject to change without notice. Contact VirTis for latest revision.

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