

VO-1000P Vacuum Drying Oven

**High-throughput, multi-shelf processes
1000L large volume**

LAB1ST VO-1000P Vacuum Drying Oven utilizes independent shelf heating technology, delivering larger volume, faster heating rates, higher temperatures (up to 250°C standard), and improved thermal efficiency.

This oven is ideal for applications requiring larger volume, precise and rapid temperature control across multiple shelves. It is a reliable device for drying and heat treatment of items under low pressure conditions.



Key Specifications

- Temperature Range: RT+15~250°C
- Vacuum Level<50Pa
- Chamber Volume: 1000L
- Heating Method: Shelf Heating
- Shelf Quantity: 6 (980x880mm)

Features

> Electrostatic powder coating cabinet:

The entire machine features a thickened design, and the outer casing is made of cold-rolled steel plate with electrostatic powder coating, providing strong corrosion resistance.

> Stainless Steel 304 Interior:

Combines durability with a clean, professional appearance and easy maintenance.



> Vertical Chamber Design:

Ergonomically optimized for easy loading and operation.

> Oil-Filled Mechanical Vacuum Gauge:

Provides stable and dependable vacuum measurements.

> Enhanced Configuration Flexibility:

Supports customized setups for diverse process requirements.

> Dedicated Inert Gas Inlet Valve:

Enables controlled introduction of nitrogen or other inert gases.

> Independent Shelf Temperature Control:

Enables rapid heating, high temperatures, and individual shelf operation for optimized performance.

> Glass viewing window:

Equipped with glass viewing windows for convenient observation of the internal working conditions (Fig. 1).

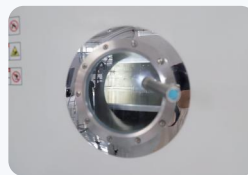


Fig. 1



Fig. 2

> Standard KF40 Vacuum Port:

Standard larger connection for high-volume applications (Fig. 2).

> High Heating Efficiency:

Achieves desired temperatures with lower power consumption compared to conventional designs.

> Calibratable Controller with Countdown Timer:

Programmable timer from 1 to 9999 minutes for flexible and precise process management.

> 4th Generation LCD Temperature Controller:

Specifically calibrated for vacuum ovens to ensure accurate and reliable temperature control.



Parameter

Model	VO-1000P
Capacity	1000 L 35.31 cu ft
Temp Range	RT+15~250°C
Temp Control	0.1°C
Temp Stability	±1°C
Heating Time	< 30min
Shelf Qty	6 (7 shelves max)
Shelf Size (mm)	980x880
Interior (WxDxH, mm)	1000x950x1000
Exterior (WxDxH, mm)	1500x1200x1700
Vacuum Port	KF40
Vacuum Level	<50Pa
Recommended Pump	14L/s
N ₂ Inlet Port	Quick plug connector, Φ6mm straight push-in fitting
Gross Weight (kg)	1000
Power Input	6200 W
Power Supply	AC380V 50Hz/AC 220V 60Hz 3 Phase
Insulation layer	Ceramic fiber cotton
Safety	Leakage protection, over-temperature protection, overload protection

7" PLC Touchscreen Controller

- > **Dual-Mode Control:**
Supports both fixed-value and multi-segment program operation for flexible adaptation to different process needs.
- > **Dual-Channel Parameter Control:**
Capable of controlling temperature and pressure simultaneously or independently to meet complex process conditions.
- > **Enhanced Control:**
Allows simultaneous control of multiple heating plate parameters on the same interface.
- > **PID Auto-Tuning (TP-AT):**
One-touch auto-tuning automatically calculates optimal PID parameters for more accurate temperature and pressure control.
- > **Power Failure Restart Options:**
After power restoration, the system can be set to stop, restart from the beginning, or resume operation, ensuring process safety.
- > **Multi-Level Access Management:**
Supports operation permission locking to prevent unintended modification of critical parameters.
- > **Real-Time Curves & Data Logging:**
Displays real-time temperature and pressure curves, supports historical data query.
- > **Automatic N₂ / Air Gas Switching:**
Supports fully automatic mode switching between nitrogen (N₂) and compressed air intake, with intelligent gas path selection according to set process parameters.





Options

Customizable Number Of Shelves (Max. 7 layers)

High-Temperature Heating: 300°C, 400°C, 500°C

Digital Vacuum Gauge

Chiller (Can be used to protect the vacuum pump or cool the chamber.)

7" PLC Touchscreen Controller (With recipe control, N₂ and vacuum regulation, and one controller can control parameters of all trays.)

Oil-free screw pump

Vacuum Controller (0.1–100 kPa)

LED Interior Light

Full Stainless Steel Exterior

Communication ports (USB 2.0 / RS-232 / RS-485 / Ethernet)

Dust Filter

High Vacuum (<1Pa)

KF40 Stainless Steel Vacuum Hose (1m / 2m)

Stainless Steel Cold Trap (Dry Ice or Coil Type)

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VO-E Series Vacuum Drying Oven

General drying, heating, and testing

LAB1ST VO-E Series Vacuum Drying Ovens feature an external chamber heating design, providing a versatile and cost-effective solution for drying, heating, and testing under vacuum or inert gas conditions.

With a standard temperature range of up to 200°C and a rectangular stainless steel chamber, these ovens maximize usable space and accommodate flexible shelf configurations, making them ideal for laboratories and industrial applications requiring gentle and uniform heating.



Chamber External Heating



Adjustable Shelves



Easy to Operate



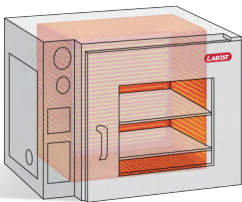
Independent Over-Temperature Protection

Key Specifications

- Temperature Range: RT+15~200°C
- Vacuum Level < 50Pa
- Chamber Volume: 23L - 500L (Accept customization)
- Heating Method: Chamber Heating

Features

- > **Uniform Chamber Heating with Removable Trays:**
Enables flexible loading configurations and easy operation.



- > **Calibratable Controller with Countdown Timer:**
Programmable timer from 1 to 9999 minutes for flexible process management.
- > **Independent Over-Temperature Protector (with indicator):**
Prevents overheating and ensures operational safety.

- > **LED Interior Light:**

Provides clear illumination for easy observation of samples.

- > **Stainless Steel 304 Interior:**

Combines aesthetic appeal with long-lasting durability and easy cleaning.

- > **Oil-Filled Mechanical Vacuum Gauge:**

Delivers stable and reliable vacuum measurements.

- > **Dedicated Inert Gas Inlet Valve:**

Allows controlled introduction of nitrogen or other inert gases.

- > **Standard KF25 Vacuum Port:**

Ensures reliable and convenient connection to vacuum systems.

- > **4th Generation LCD Temperature Controller:**

Specially calibrated for vacuum ovens to ensure precise and reliable temperature control (Fig.1).



Fig.1



Fig.2

- > **Maximized Capacity:**

Accommodates more trays within the same chamber volume for enhanced productivity (Fig.2).

Parameter

Model	VO-01E	VO-02E	VO-03E	VO-07E	VO-18E
Capacity	23 L 0.81 cu ft	53 L 1.87 cu ft	90 L 3.18 cu ft	210 L 7.42 cu ft	500 L 17.66 cu ft
Temp Range	RT+15~200°C	RT+15~200°C	RT+15~200°C	RT+15~200°C	RT+15~200°C
Shelf Qty (Std/Max)	2 4	2 5	3 6	4 8	5 10
Shelf Size (mm)	295x270	410x340	445x420	610x555	780x625
Interior (WxDxH, mm)	300x300x275	415x370x345	450x450x450	560x600x640	630x810x845
Exterior (WxDxH, mm)	580x450x450	720x525x535	615 x 590 x 635	860x670x890	950x 950 x 1115
Vacuum Port	KF25	KF25	KF25	KF25	KF25
Vacuum Level	<50Pa	<50Pa	<50Pa	<50Pa	<50Pa
Recommended Pump	2L/s	2L/s	4L/s	8L/s	8L/s
Gross Weight (kg)	65	90	130	280	600
Power Input	500 W	1500 W	1500 W	2500 W	3500W
Power Supply	AC220V 50Hz	AC220V 50Hz	AC220V 50Hz	AC220V 50Hz	AC220V 50Hz

Options

Customizable total number of internal shelves

Digital Vacuum Gauge

High Vacuum (<1Pa)

PLC Touchscreen Controller (With recipe control, N₂ and vacuum regulation)

Vacuum Controller (0.1–100 kPa)

Full Stainless Steel Exterior

Dust Filter

KF25 Stainless Steel Vacuum Hose (1m / 2m)

Stainless Steel Cold Trap (Dry Ice or Coil Type)

High-Temperature Heating: 300°C, 400°C, 500°C

Oil-free screw pump, more suitable for high cleanliness requirements

Chiller (Can be used to protect the vacuum pump or cool the chamber)

LED Interior Light

Communication ports (USB 2.0 / RS-232 / RS-485 / Ethernet)

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VO-P Series Vacuum Drying Oven

High-throughput, multi-shelf processes

LAB1ST VO-P Series Vacuum Drying Ovens utilize independent shelf heating technology, delivering faster heating rates, higher temperatures (up to 250°C standard), and improved thermal efficiency.

These ovens are ideal for applications requiring precise and rapid temperature control across multiple shelves, with the ability to operate each shelf at different temperatures.

Suitable for high-throughput labs and industrial processes.



Shelves Heating



Easy Operation



More flexible
temperature setting
for each shelf



Fast temperature
response, maximum up
to 250°C

Key Specifications

- Temperature Range: RT+15~250°C
- Vacuum Level<50Pa
- Chamber Volume: 23L - 1000L (Accept customization)
- Heating Method: Shelf Heating

Features

> 4th Generation LCD Temperature Controller:

Specifically calibrated for vacuum ovens to ensure accurate and reliable temperature control.



> Calibratable Controller with Countdown Timer:

Programmable timer from 1 to 9999 minutes for flexible and precise process management.

> LED Interior Light:

Enhances visibility for easy monitoring of samples.

> Stainless Steel 304 Interior:

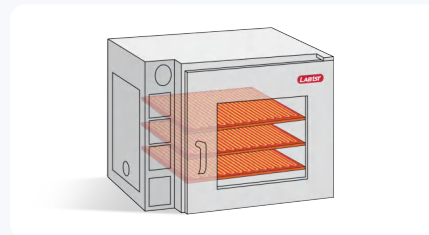
Combines durability with a clean, professional appearance and easy maintenance.

> Oil-Filled Mechanical Vacuum Gauge:

Provides stable and dependable vacuum measurements.

> Independent Shelf Temperature Control:

Enables rapid heating, high temperatures, and individual shelf operation for optimized performance.



> Dedicated Inert Gas Inlet Valve:

Enables controlled introduction of nitrogen or other inert gases.

> Standard KF25 or KF40 Vacuum Port:

Ensure reliable and convenient vacuum connections.



> High Heating Efficiency:

Achieves desired temperatures with lower power consumption compared to conventional designs.

For Larger size ($\geq 1000\text{L}$) vacuum drying oven

> KF40 Vacuum Port:

Standard larger connection for high-volume applications.

> Vertical Chamber Design:

Ergonomically optimized for easy loading and operation.

> Enhanced Configuration Flexibility:

Supports customized setups for diverse process requirements.

> 7" PLC Touchscreen Controller (Optional):

High-resolution touchscreen controller with dual-mode operation, PID auto-tuning, data logging, USB export, alarm monitoring, and MODBUS communication for precise and reliable lab/production use.



Parameter

Model	VO-01P	VO-02P	VO-03P	VO-07P	VO-18P
Capacity	23 L 0.81 cu ft	53 L 1.87 cu ft	90 L 3.18 cu ft	210 L 7.42 cu ft	500 L 17.66 cu ft
Temp Range	RT+15~250°C	RT+15~250°C	RT+15~250°C	RT+15~250°C	RT+15~250°C
Shelf Qty	1	1	3	5	7
Shelf Size (mm)	280x250	395x310	430x480	540x530	610x740
Interior (WxDxH, mm)	300x300x275	415x370x345	450x450x450	560x600x640	630x810x845
Exterior (WxDxH, mm)	580x450x450	720x525x535	615 x 590 x 635	860x670x890	950x 950 x 1115
Vacuum Port	KF25	KF25	KF25	KF25	KF25
Vacuum Level	<50Pa	<50Pa	<50Pa	<50Pa	<50Pa
Recommended Pump	2L/s	2L/s	4L/s	8L/s	8L/s
Gross Weight (kg)	65	90	130	280	600
Power Input	450 W	900 W	1400 W	2200 W	3900 W
Power Supply	AC220V 50Hz	AC220V 50Hz	AC220V 50Hz	AC220V 50Hz	AC380V 50Hz/AC 220V 60Hz

Options

Customizable total number of internal shelves

Digital Vacuum Gauge

High Vacuum (<1Pa)

PLC Touchscreen Controller (With recipe control, N₂ and vacuum regulation)

Vacuum Controller (0.1–100 kPa)

Full Stainless Steel Exterior

KF25 Stainless Steel Vacuum Hose (1m / 2m)

Stainless Steel Cold Trap (Dry Ice or Coil Type)

Dust Filter (Between vacuum pump & oven)

High-Temperature Heating: 300°C, 400°C, 500°C

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Chiller (Can be used to protect the vacuum pump or cool the chamber)

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