



LABPRO Glovebox Systems are a versatile line of workstations for a wide range of applications in both research as well as production environments.

These systems are designed with advanced automation and the flexibility for customization for applications with various options or with OEM equipment.

LABPRO Glovebox Systems are widely deployed in research as well as production environments. With a robust gas purification and regeneration system combined with advanced automated features, these systems deliver significant value and time savings. They are in use in a wide spectrum of applications from rugged environments for corrosive applications to advanced sophisticated clean room use cases.

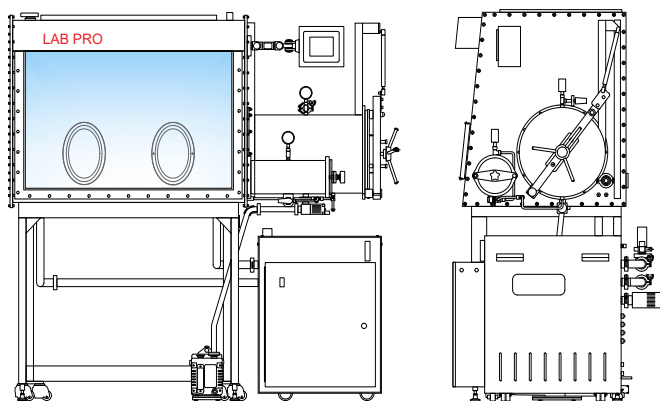
These glovebox systems are designed for a wide range of industrial, academic and research establishments. Wide variety of glovebox options, these systems are versatile and configurable as per the application and customer requirements. These systems can be optimized for the OEM equipment or other vacuum apparatus inside the glovebox.

These systems are backed with remote and onsite support, and dedicated spare parts and accessories availability.

## KEY FEATURES

- Modular design with easy option to expand
- Stainless steel body with polycarbonate windows
- Closed loop gas regeneration and recirculation system
- Integrated design with gas purification and regeneration system
- Purity levels less than 1 ppm for moisture and oxygen
- Negative and positive pressure operation
- Adaptive mode for reduced noise emission and up to 90% reduced power consumption
- Fully PLC controlled with Touch Panel
- Customizable to the application requirements

## LABPRO 1250

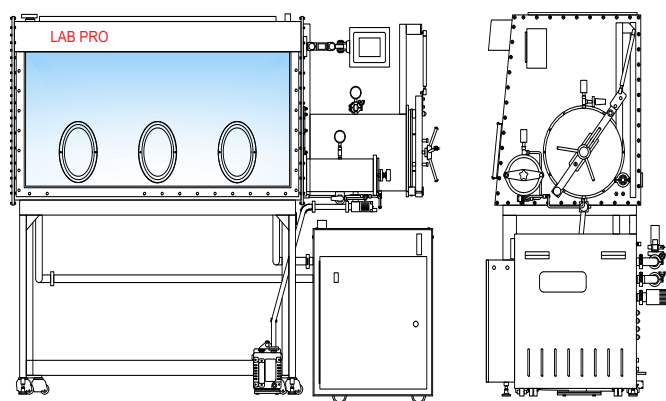


2 Glove Ports

**Internal Dimensions:**

1250mm (W) x 780mm (D) x 900mm (H), Volume 0.8m<sup>3</sup>

## LABPRO 1500

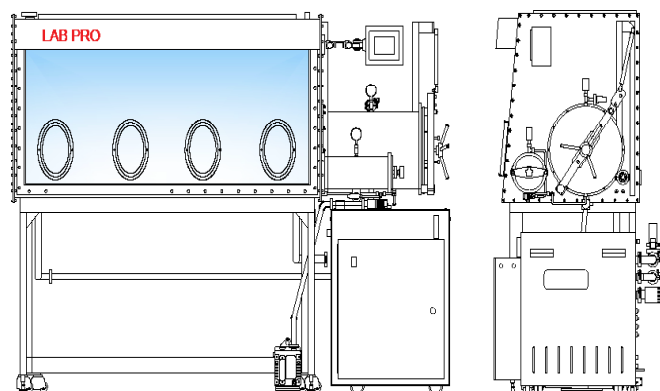


3 Glove Ports

**Internal Dimensions:**

1500mm (W) x 780mm (D) x 900mm (H), Volume 1.0m<sup>3</sup>

## LABPRO 1800

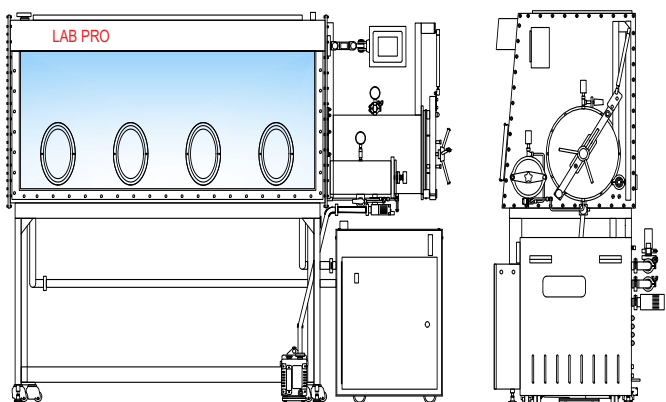


4 Glove Ports

**Internal Dimensions:**

1800mm (W) x 780mm (D) x 900mm (H), Volume 1.3m<sup>3</sup>

## LABPRO 2000

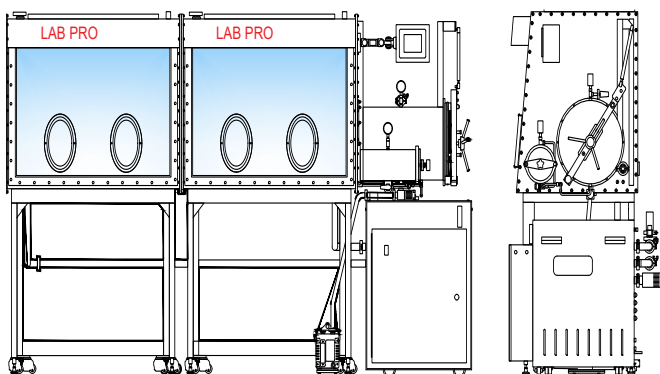


4 Glove Ports

**Internal Dimensions:**

2000mm (W) x 780mm (D) x 900mm (H), Volume 1.4m<sup>3</sup>

## LABPRO 2500



4 Glove Ports

**Internal Dimensions:**

2500mm (W) x 780mm (D) x 900mm (H), Volume 1.8m<sup>3</sup>

## OPTIONS

- Number of glove ports and double side access
- Safety glass window
- Solvent vapour removal
- Regenerable solvent vapour removal
- Solvent sensor with PLC control
- Customizable trays in glove box or antechambers
- Cold well
- Freezer -35°C (35L or other capacities) and cooling box
- Dry and/or corrosion resistant pumping options
- Variety of gloves (Neoprene, Butyl) and various sizes
- Wide range of flanges, and feedthroughs
- Integrated heat exchanger
- Recirculation chiller (with PLC control option)
- Multi-column gas purification and regeneration system
- Quartz window for solar simulator testing
- Optical view ports for laser spectroscopy
- Glove port covers
- Wide range of antechamber dimensions
- Antechamber automatic pressure controlled

## GLOVE BOX

Material of construction	Stainless steel (AISI 304L)
Type of construction	Modular box with screwed in flanged side panels. Dismountable side panel to connect to second glove box.
Dimensions	Standard dimensions or customizable to applications
Leak rate	< 0.05 Vol%/h (according to International Standards ISO 10648-2)
Outside surface	Powder coated or brushed polish finish
Inside surface	Brushed polish finish Ra 1.2um
Window	Scratch and chemical resistant polycarbonate window
Glove ports	220mm diameter, Viton O-ring sealed
Gloves	Butyl, thickness 0.5mm
Feedthroughs	4/5 DN40 KF flanges, 1 electrical feedthrough
Dust filter	HEPA @ 0.3 micron, class H13, gas inlet/outlet filters
Stand	Height 1000mm (adjustable) with castors
Shelves	3 modular, height adjustable stainless steel shelves
Light	LED or Fluorescent lamp

## MAIN ANTECHAMBER

Dimensions	Cylindrical, 400mm (D) x 600mm (L)
Material of construction	Stainless steel (AISI 304L)
Leak rate	< 10 <sup>-5</sup> mbar l/s (tested with helium mass spectrometer)
Sliding tray	Stainless steel, 300mm (W) x 575mm (L)
Door lock	Door closing with spindle handle for single hand operation
Sealing	Viton O-ring sealed
Vacuum and refill process	PLC operated
Valves	Electro-pneumatic valve DN40 for evacuation line, PLC controlled Solenoid valve DN10 refill line, PLC controlled

## MINI ANTECHAMBER

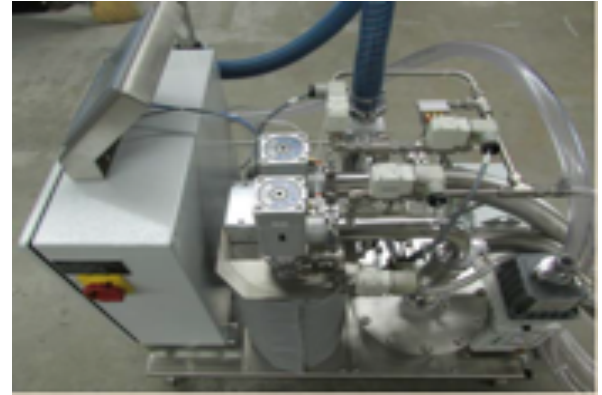
Dimensions	Cylindrical, 150mm (D) x 400mm (L)
Leak rate	< 10 <sup>-5</sup> mbar l/s (tested with helium mass spectrometer)
Valve/door	Equipped with 3-way manual valve and 2 doors. Sliding tray with the chamber

## GAS PURIFICATION & RECIRCULATION BLOWER UNIT

Operating principle	Closed loop recirculation
Material of construction (piping/components)	Stainless steel (AISI 304L)
Purification levels	Option 1: Oxygen < 1 ppm, 36 liters, Moisture < 1 ppm, 1350 g Option 2: Oxygen < 1 ppm, 60 liters, Moisture < 1 ppm, 1600 g
Regeneration	Automated regeneration sequence
Integrated blower	Frequency controlled up to 88m³/h
Working gas	Nitrogen, Argon, or Helium
Adaptive control	Adaptive mode for reduced noise emission and reduced power consumption
Box pressure control	Automatic pressure control adjustable between -15 to +15 mbar (with foot switch or pressure sensor)
Vacuum pump	Rotary vane pump with 30m³/h with automatic gas ballast and oil mist filter
Main and control valves	Electro-pneumatic
Purge function	Integrated with 200 l/m
Sensors	Oxygen and moisture (0-500 ppm or 0-1000 ppm) included
Relief valve	Oil free pressure relief valve
Control system	PLC (Siemens) controlled, colour touch panel, control for purification regeneration, box purging, box pressure manipulation, oxygen and moisture sensor

# GAS PURIFICATION SYSTEM

- Closed loop inert gas regeneration and recirculation system
- Columnar gas purification system for oxygen and moisture (option of multi-column purification system for larger glove box volumes)
- Adaptive Control provides Eco mode - blower speed automatic control based on gas purity levels, vacuum pump timer to shut-off pump for noise reduction and power savings
- Automatic purge valve based on Oxygen level, Timer or manually controlled
- Fully PLC controlled with active monitoring and alerts
- Water cooled, with option of chiller



## UTILITIES

	Medium (or type)	Pressure	Flow rate	Connection
Working gas	Nitrogen, Argon, or Helium	6 bar	250 l/min	Swagelok 10mm (D)
Regeneration gas	N <sub>2</sub> /H <sub>2</sub> mix or Ar/H <sub>2</sub> mix (H <sub>2</sub> 2-10%)	0.5 - 1 bar	15-20 l/min	Swagelok 10mm (D)
Cooling water	Water (In ~20°C, Out ~32°C)	300 kPa	2-3 l/min	Hose 8mm (ID)
Regeneration gas exhaust	Flexible host			
Vacuum pump exhaust	Flexible host			
Electrical inlet	230 V, 50 Hz			

## MARKETS

Research & Development	Pharmaceutical
Academia	Chemical
Aerospace	Automotive
Additive manufacturing	Lithium ion battery
Nuclear	Solar

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**VACUUM**  
TECHNIQUES Pvt. Ltd.

**VACUUM TECHNIQUES PVT. LTD.**  
2/13 Phase 1, Peenya Industrial Area,  
Bangalore 560058, Karnataka, India  
[www.vtvacuumtech.com](http://www.vtvacuumtech.com)  
[info@vtvacuumtech.com](mailto:info@vtvacuumtech.com)  
+91.80.2839.2746

