



# $\alpha$ -1000P Mini Glovebox



## Mini Atmospheres Glovebox

Mini models of gloveboxes are compact and complete standalone systems integrated with entire functional components. They are able to create an inert environment with less than 1 ppm of  $H_2O$  and  $O_2$ . The systems are modulated with antechambers, removable windows, adjustable trays, lighting units, adjustable shelves, and gloves, which meet most of the operational needs in the glovebox. The systems are made of welded stainless steel and are equipped with highest-quality components. We also provide optional components to meet your special requirements. The Mini models include a series of glovebox chamber lengths including 800, 1000, 1200, 1500, and 1800 mm. We also take custom-built orders according to your needs.

## KEY FEATURES

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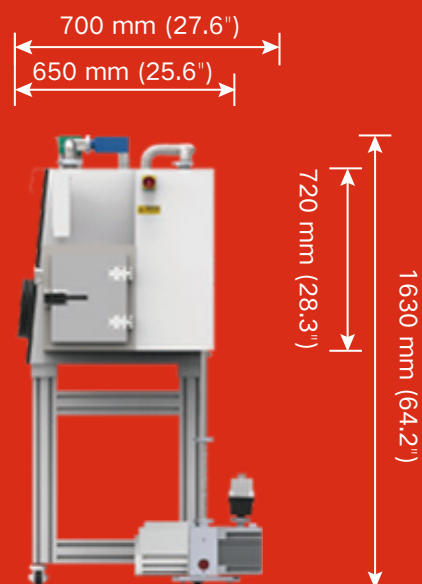
Glovebox with all-welded stainless steel design  
All stainless steel pipework  
Removable front window as an entry for large equipment  
Purifier regeneration frequency once per year  
Automatic antechamber control  
Vacuum pump  
Oxygen Analyzer / Moisture Analyzer  
Auto purge function  
User friendly and simple operation: Color LCD touch panel and PLC controller  
Energy-Save mode, automatically reducing power consumption by up to 90% during idle periods  
Automatic regenerable H<sub>2</sub>O/O<sub>2</sub> purifier  
Attainable purity O<sub>2</sub><1 ppm, H<sub>2</sub>O<1 ppm (dew point also available for moisture reading)  
Industry leading low leak rate of <0.05 Vol%/hour at -10 mbar condition  
Stainless steel encapsulated blower with frequency converter  
Circulation capacity more than 80 m<sup>3</sup>/h (47 cfm) at ΔP = 60 mbar (60 Hz)  
Compatible with world-wide voltage standards  
Integrated high vacuum feedthroughs  
Conform to CE  
One year limited warranty, and lifetime technical support

## MAIN APPLICATIONS

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Create oxygen-free and moisture-free environment for organometallic chemistry, organic synthesis, hydrophilic chemical handling, medical devices, electronic component handling, lithium battery handling, solar cell assembly, hemoglobin and metabolic research, catalyst handling, medicine synthesis, nuclear industry, membrane of organic EL preparation, etc.





## Package List

| Part Description    | Quantity | Part Image |
|---------------------|----------|------------|
| Quick Clamp KF 25   | 3 pcs    |            |
| Bellows Metal KF 25 | 1 pcs    |            |
| Glovebox Glove      | 2 pcs    |            |
| Oxygen Analyzer     | 1 pcs    |            |
| Moisture Analyzer   | 1 pcs    |            |
| Oil Mist Filter     | 1 pcs    |            |
| RV-12 Vacuum Pump   | 1 pcs    |            |

## Configuration Options

|                  | Acrylic                                                                             | Mini                                                                                | Vacuum                                                                               | Standard                                                                              |
|------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 25.6"<br>650 mm  |    | Customizable                                                                        | Customizable                                                                         | Customizable                                                                          |
| 31.5"<br>800 mm  | Customizable                                                                        |    |    | Customizable                                                                          |
| 39.4"<br>1000 mm | Customizable                                                                        |   |   | Customizable                                                                          |
| 47.3"<br>1200 mm | Customizable                                                                        |  |  |  |
| 59.1"<br>1500 mm |  |  |  |  |
| 70.8"<br>1800 mm | Customizable                                                                        |  |  |  |
| 94.5"<br>2400 mm | Customizable                                                                        | Customizable                                                                        | Customizable                                                                         |  |

## α-1000P Mini Glovebox With Auto Purging And Gas Purification

|                       |                                                                                     |                                                                                                                                            |                                                                                       |                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| External Structure    |                                                                                     |                                                           |     |  |
| Chamber Capacity      |                                                                                     | Approximately 16.6 cu. Ft (0.47 m³)                                                                                                        |                                                                                       |                                                                                     |
| Overall Dimensions    |                                                                                     | 66.9" L x 27.6" W x 64.2" H, 1700 mm (L) x 700 mm (W) x1630 mm (H)                                                                         |                                                                                       |                                                                                     |
| Overall Weight        |                                                                                     | 748 lbs (340 kg)                                                                                                                           |                                                                                       |                                                                                     |
| Electrical Voltage    |                                                                                     | <ul style="list-style-type: none"><li>• 230 VAC/50-60 Hz, 10 A</li><li>• 115 VAC/50-60 Hz, 20 A</li><li>• 100 VAC/50-60 Hz, 20 A</li></ul> |                                                                                       |                                                                                     |
| Glovebox Chamber      |                                                                                     |                                                                                                                                            |                                                                                       |                                                                                     |
| Description           | Material                                                                            | Stainless steel 304, 5 mm in thickness, Glovebox vacuum ≤-1 bar                                                                            |                                                                                       |                                                                                     |
|                       | Internal Dimensions                                                                 | 39.4" L x 25.6" W x 28.3" H, 1000 mm (L) x 650 mm (W) x 720 mm (H)                                                                         |                                                                                       |                                                                                     |
| Inclined Front Window | Material                                                                            | Tempered glass, 8.0 mm in thickness, Lexan (polycarbonate) 10 mm in thickness upon request                                                 |                                                                                       |                                                                                     |
|                       | Dimensions                                                                          | 37.6" L x 27.0" W, 955 mm (L) x 685 mm (W)                                                                                                 |                                                                                       |                                                                                     |
| Glove Ports           | Tekaform                                                                            | 8.6"(220 mm) in diameter, O-ring sealed                                                                                                    |  |                                                                                     |
|                       | Dimensions                                                                          | Hard aluminum alloy or polyaldehyde upon request                                                                                           |                                                                                       |                                                                                     |
| Gloves                | Material                                                                            | Butyl rubber                                                                                                                               |                                                                                       |                                                                                     |
|                       | Thickness                                                                           | 0.4 mm (standard)<br>0.8 mm upon request                                                                                                   |                                                                                       |                                                                                     |
| HEPA Filters          |  | Inlet and outlet filters eliminate particles with the size >0.3 μm                                                                         |                                                                                       |                                                                                     |
| Lighting              |                                                                                     | Fluorescent lamp, front-ceiling mounted                                                                                                    |                                                                                       |                                                                                     |

|                                                                                                                     |                                                                                                                                                                                                                                                                             |                                                                                                                                                                      |                                                                                                 |  |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--|
| Leakage Rate                                                                                                        |                                                                                                                                                                                                                                                                             | Typically <0.05 vol%/hr at -10 mbar,<br>• By oxygen leak decay test method according to ISO 10648-2: 1994<br>• By pressure change test method according to ISO 25412 |                                                                                                 |  |
| Gas Purification System                                                                                             |                                                                                                                                                                                                                                                                             |                                                                                                                                                                      |                                                                                                 |  |
| Description                                                                                                         | <ul style="list-style-type: none"><li>Automated removal of H<sub>2</sub>O and O<sub>2</sub></li><li>Single column, automated column regeneration; dual purification columns (optional)</li><li>Closed stainless steel loop for gas recirculation and purification</li></ul> |                                                                                                                                                                      |                                                                                                 |  |
| Operating Gas                                                                                                       | Working gas                                                                                                                                                                                                                                                                 | Nitrogen, Argon, or Helium (purity >99.999%)                                                                                                                         |                                                                                                 |  |
|                                                                                                                     | Regeneration gas                                                                                                                                                                                                                                                            | Mixture of H <sub>2</sub> (5-10%) and working gas                                                                                                                    |                                                                                                 |  |
| <div>Vacuum Pump</div> <div></div> | Description                                                                                                                                                                                                                                                                 | Rotary vane pump, installed with oil mist filter, oil circulator, and automatic gas ballast control; dual-stage. or dry pump upon request                            | <div></div> |  |
|                                                                                                                     | Pumping rate                                                                                                                                                                                                                                                                | 7.0 cfm (12 m <sup>3</sup> /h)                                                                                                                                       |                                                                                                 |  |
|                                                                                                                     | Ultimate vacuum                                                                                                                                                                                                                                                             | < 2 x 10 <sup>-3</sup> mbar                                                                                                                                          |                                                                                                 |  |
| Circulation Unit                                                                                                    | Blower                                                                                                                                                                                                                                                                      | Integrated blower, oil-free, highly efficient                                                                                                                        |                                                                                                 |  |
|                                                                                                                     | Flow Rate                                                                                                                                                                                                                                                                   | 47 cfm (80 m <sup>3</sup> /h)                                                                                                                                        |                                                                                                 |  |
| Valves                                                                                                              |                                                                                                                                                                                                                                                                             | Electro-pneumatic DN40                                                                                                                                               |                                                                                                 |  |
| Leakage Rate                                                                                                        |                                                                                                                                                                                                                                                                             | Typically <0.05 vol%/hr at -10 mbar,<br>• By oxygen leak decay test method according to ISO 10648-2: 1994<br>• By pressure change test method according to ISO 25412 |                                                                                                 |  |
| Antechamber                                                                                                         |                                                                                                                                                                                                                                                                             |                                                                                                                                                                      |                                                                                                 |  |
| Main Antechamber                                                                                                    | Material                                                                                                                                                                                                                                                                    | Stainless steel 304; 6.0 mm in thickness                                                                                                                             |                                                                                                 |  |
|                                                                                                                     | Internal Dimensions                                                                                                                                                                                                                                                         | 15.7" L x 9.8" W x 9.8" H, 400 mm (L) x 250 mm (W) x 250 mm (H)                                                                                                      |                                                                                                 |  |
|                                                                                                                     | Vacuum                                                                                                                                                                                                                                                                      | 1 x 10 <sup>-2</sup> mbar                                                                                                                                            |                                                                                                 |  |

## Purging System

### Function

By setting up the purging time and pressure, the system automatically purges the chamber O<sub>2</sub> level, timer or manually controlled

## Analyzers

### O<sub>2</sub>-Analyzer



#### Dimensions

8" L x 3.1" W x 2.4" H, 205 mm (L) x 80 mm (W) x 60 mm (H)

#### Measurement Range

0 to 1000 ppm

#### Other Analyzer

GE oxy.IQ™ Oxygen Transmitter upon request



### H<sub>2</sub>O-Analyzer



#### Dimensions

8" L x 3.1" W x 2.4" H, 205 mm (L) x 80 mm (W) x 60 mm (H)

#### Measurement Range

0 to 500 ppm

#### Other Analyzer

GE VeriDri™ Dew-Point Transmitter



## Solvent Purification System

### Description

#### Column Material

Stainless steel 304 ; 3.0 mm in thickness

#### Inside Dimensions

8.6" (Φ) x 17.7" (L), 220 mm (Φ) x 450 mm (L)

#### Packing Material

High-quality activated carbon

## Optional Components

### Vacuum feedthrough with two valves

Special design to KF40 joint, you can lead the water or gas into the box

### Electrochemical signal feedthrough ( 4 or 8 pins)

Stainless steel 1.4301

### Freezer

#### Location

Integrated on the side panel of the glovebox

#### Inside Dimensions

16.6" L x 10.5" W x 6.4" D, 420 mm L x 266 mm W x 162 mm D

#### Capacity

18 L or 32 L, 5 shelves with adjustable height

#### Minimum Temperature

-35 °C

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Microscope with CCD Camera Systems | Equipment for microscopic analysis of glovebox contents, video-assisted motion can be customized upon request                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Cold Well with Cover               | Different capabilities of cold wells for low-temperature storage and low-temperature reaction manipulations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Dual Purification Columns          | More efficient to remove oxygen and moisture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Organic Solvent Absorber           | Regenerable, more efficient to purify organic solvent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Cooling Fan                        | Accelerate the gas flow in the glovebox chamber                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Heating Element                    | Installed in main antechamber; Maximum 200 °C; Temperature control $\pm 1$ °C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Other Information</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Compliance                         | UL . ISO9001. CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Warranty                           | <ul style="list-style-type: none"> <li>• One year limited warranty, with lifetime support</li> <li>• Rusting or damage due to improper storage condition or maintenance are not covered by this warranty</li> <li>• consumable items including gloves and oxygen sensors are not covered by this warranty</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Application Notes & Warnings       | <ul style="list-style-type: none"> <li>• The interconnections between the glovebox chamber and the gas purification system must be unimpeded during the purification cycles</li> <li>• The use of corrosive gases is prohibited because they will damage the water and oxygen sensors</li> <li>• Regularly perform regeneration of gas purification columns to maintain the optimum purification efficiency</li> <li>• The O<sub>2</sub> removing rate is highly dependent on the type of purging gas used. To obtain faster chamber purging, Nitrogen is preferred to Argon due to its lighter molecular mass</li> <li>• Corrosive liquid (such as LiPF<sub>6</sub> solution) must be sealed in a container inside the glovebox. Otherwise, liquid vapor may condense and corrode the steel chamber and/or purification pipelines</li> </ul> |

## Order Information

| α                       | *    | 1 | 2 | 3  | 4   | Description                                                    |
|-------------------------|------|---|---|----|-----|----------------------------------------------------------------|
| Mini Glovebox           | 800  |   |   |    |     | Dimensions 31.5" L × 25.6" W × 28.3"H                          |
|                         | 1000 |   |   |    |     | Dimensions 39.4" L × 25.6" W × 28.3"H                          |
|                         | 1200 |   |   |    |     | Dimensions 47.2" L × 25.6" W × 28.3"H                          |
|                         | 1500 |   |   |    |     | Dimensions 59.1" L × 25.6" W × 28.3"H                          |
|                         | 1800 |   |   |    |     | Dimensions 70.9" L × 25.6" W × 28.3"H                          |
| Structure configuration |      | P |   |    |     | One Glovebox                                                   |
|                         |      | S |   |    |     | Split Glovebox                                                 |
|                         |      | D |   |    |     | Double Sided Glovebox                                          |
| Function option         |      |   | P |    |     | Purging System                                                 |
|                         |      |   | G |    |     | Gas Purification System, H <sub>2</sub> O、O <sub>2</sub> ≤1ppm |
|                         |      |   | O |    |     | Solvent purification system                                    |
| Antechamber             |      |   |   | A5 |     | Square Antechamber 15.7" L × 9.8" W × 9.8" H                   |
| Other function options  |      |   |   |    | FW  | Openable Front Window                                          |
|                         |      |   |   |    | 18F | 18L Freezers Temperature -32.8°F                               |
|                         |      |   |   |    | 32F | 32L Freezers, Temperature -32.8°F                              |

\* The chamber length number is basically required, while 1, 2, 3, or 4 are optional depending on the specific needs by users. Please contact us if special requirements are needed.

### Example of ordering numbers:

- (1) α-1000VPGO, indicates a single glovebox with 1000 mm in chamber length, integrated with an auto-purging system, a water/oxygen purification system, and a square transitional tank.
- (2) α-1500VPG-A5, indicates a split duplex glovebox with single-side access to the glovebox chamber and 1500 mm in chamber length, integrated with an auto-purging system, a water/oxygen purification system, and a square transition Antechamber.

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