

Laboratory Single Station Vacuum Glove Box With Automated Rectangular Antechamber

Item Number: ST15



Introduction

This laboratory single station vacuum glove box provides ultra pure inert atmosphere purification with moisture and oxygen under one PPM featuring an automated gas saving rectangular antechamber and robust flange window sealing for advanced battery chemistry and material research.

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Application	Description	Key Benefit
Solid-State Battery Assembly	Preparation, stacking, and encapsulation of moisture-sensitive solid electrolytes, lithium metal foils, and sulfur-based cathodes.	Maintains sub-1 PPM atmosphere to prevent rapid hydrolysis and oxidation of sensitive electrolyte interfaces.
Perovskite & Photovoltaic R&D	Spin-coating, curing, and thermal deposition of organic-inorganic halide perovskite films sensitive to ambient humidity and air.	Eliminates environmental degradation vectors, ensuring superior film uniformity and reproducible device efficiency.
Organometallic & Catalysis Synthesis	Handling air-sensitive catalysts, pyrophoric Grignard reagents, and metal alkyl compounds under inert nitrogen or argon.	Provides secure, hermetic containment with automated interlocks to prevent accidental exposure and hazardous oxidation.
OLED & Semiconductor Packaging	Deposition, encapsulation, and hermetic sealing of organic light-emitting diodes, sensors, and microelectronic devices.	Low gas leakage rate and pristine vacuum transition preserve thin-film integrity and extend device operational lifespan.
Powder Metallurgy & Nanomaterials	Handling, weighing, and blending of ultra-fine reactive metallic powders, titanium alloys, and high-purity ceramic precursors.	Rectangular chamber geometry facilitates easy transfer of bulky containers and processing tooling without atmospheric contamination.
Nuclear & Radiochemical Processing	Controlled isolation, micro-weighing, and manipulation of radioactive tracers or sensitive non-volatile isotopes in inert media.	Reliable dual-door interlock and heavy-duty flange sealing prevent containment breach and protect operator safety.

Specification Parameter	Value / Description
Base Model Identifier	ST15
Workstation Configuration	Single Station, Single-Sided Operation
Atmosphere Purity (Moisture)	H ₂ O < 1 PPM
Atmosphere Purity (Oxygen)	O ₂ < 1 PPM
Window Construction	Integral Flanged Viewing Window with Compression O-Ring Sealing
Leakage Rate	Ultra-low leakage rate engineered via unified flange architecture
Antechamber Mechanism	Fully Automated Door Actuation with Programmatic Safety Interlock
Operational Gas Efficiency	30% reduction in purge gas consumption via optimized rectangular cross-section

Model Variant	Nominal Section (mm)	Internal Width W (mm)	Internal Height H (mm)	Internal Depth D (mm)	Effective Height h (mm)	Tray & Rail Configuration
ST15-120	120 x 150	120	150	300	150	Equipped with sliding tray, rail-free design

Model Variant	Nominal Section (mm)	Internal Width W (mm)	Internal Height H (mm)	Internal Depth D (mm)	Effective Height h (mm)	Tray & Rail Configuration
ST15-260	260 x 300	254	304	500	264	Integrated sliding tray and precision guide rail
ST15-360	360 x 360	360	360	510	320	Integrated sliding tray and precision guide rail
ST15-450	450 x 450	450	450	610	410	Integrated sliding tray and heavy-duty guide rail

Model Variant	Nominal Dimensions (mm)	Internal Width W (mm)	Internal Height H (mm)	Internal Depth D (mm)	Thermal Processing Note
ST15-H360	360 x 360 x 500	360	360	510	Actual usable internal dimensions depend on heating element configuration and internal insulation format