High Purity Laboratory Gas Purifier For Inert Atmosphere And Ultra Clean Process Gases

Item Number: KT-JH

Introduction

Discover our high purity laboratory gas purifier engineered for continuous ultra clean inert gas delivery. Effectively removing moisture and oxygen to sub ppm levels, this system ensures absolute atmosphere integrity for demanding CVD, semiconductor synthesis, and advanced metallurgical research facilities.

Learn More

Application	Description	Key Benefit
Semiconductor & Thin Film Epitaxy	Delivers ultra-pure argon or nitrogen carrier gas directly into CVD, PECVD, and ALD chambers during wafer processing.	Prevents substrate oxidation, minimizes pinhole defects, and ensures high film uniformity across delicate atomic layers.
Inert Atmosphere Thermal Processing	Purifies shield gas streams for tube furnaces, vacuum atmosphere furnaces, and dental sintering units processing reactive alloys.	Eliminates surface scaling and decarburization on titanium, zirconium, and refractory superalloys during high-temperature runs.
Lithium & Solid-State Battery R&D	Conditions protective atmospheres within glove boxes, pouch cell assembly lines, and electrolyte formulation stations.	Safeguards moisture-sensitive lithium metal anodes and solid electrolyte chemistries from catastrophic moisture degradation.
Optical Fiber & Photovoltaic Manufacturing	Purifies process atmosphere during preform drawing, silicon ingoting, and wafer passivated contact layer deposition.	Prevents hydroxyl (OH) absorption bands in silica glass and preserves carrier lifetimes in high-efficiency solar cells.
Additive Manufacturing & 3D Printing	Recirculates and refines inert shielding gases inside selective laser melting (SLM) and electron beam melting (EBM) build chambers.	Maintains exceptionally low oxygen levels to prevent spatter, porosity, and embrittlement in reactive metal printing.
Analytical Instrumental Carrier Gas Supply	Provides ultra-stable, moisture-free carrier streams for gas chromatography (GC-MS), optical emission spectrometry (OES), and TGA.	Lowers baseline noise, prevents column bleed, extends analytical detector lifespans, and enhances quantitative reproducibility.
Catalysis & Nanomaterials Synthesis	Delivers clean reaction atmospheres during catalyst reduction, calcination, and carbon nanotube (CNT) high-pressure synthesis.	Eliminates competitive poisoning of active catalyst sites caused by residual oxygen and organic moisture impurities.

Specification Parameter	KT-JH-10	KT-JH-30	KT-JH-60	KT-JH-100
Item Number	KT-JH-10	KT-JH-30	KT-JH-60	KT-JH-100
Purified Gas Compatibility	Ar, N2, He, Kr, Ne, H2	Ar, N2, He, Kr, Ne, H2	Ar, N2, He, Kr, Ne, H2	Ar, N2, He, Kr, Ne, H2
Nominal Flow Rate	10 L/min (0.6 m^3/h)	30 L/min (1.8 m^3/h)	60 L/min (3.6 m^3/h)	100 L/min (6.0 m^3/h)
Inlet Gas Purity Requirement	≥ 99.99% (Technical Grade)	≥ 99.99% (Technical Grade)	≥ 99.99% (Technical Grade)	≥ 99.99% (Technical Grade)
Outlet Impurity Level (O2)	≤ 0.05 ppm (≤ 50 ppb)	≤ 0.05 ppm (≤ 50 ppb)	≤ 0.05 ppm (≤ 50 ppb)	≤ 0.05 ppm (≤ 50 ppb)
Outlet Impurity Level (H2O)	≤ 0.1 ppm (Dew point ≤ -90°C)	≤ 0.1 ppm (Dew point ≤ -90°C)	≤ 0.1 ppm (Dew point ≤ -90°C)	≤ 0.1 ppm (Dew point ≤ -90°C)
Outlet Particle Filtration	0.003 µm particulate filter	0.003 µm particulate filter	0.003 µm particulate filter	0.003 µm particulate filter
Operating Gas Pressure	0.3 – 0.8 MPa (3 – 8 bar)	0.3 – 0.8 MPa (3 – 8 bar)	0.3 – 0.8 MPa (3 – 8 bar)	0.3 – 0.8 MPa (3 – 8 bar)
Maximum Pressure Tolerance	1.2 MPa (12 bar)	1.2 MPa (12 bar)	1.2 MPa (12 bar)	1.2 MPa (12 bar)
Purification Architecture	Dual-column automatic cyclic	Dual-column automatic cyclic	Dual-column automatic cyclic	Dual-column automatic cyclic
Regeneration Mechanism	Built-in electric thermal sweep	Built-in electric thermal sweep	Built-in electric thermal sweep	Built-in electric thermal sweep

Specification Parameter	KT-JH-10	KT-JH-30	KT-JH-60	KT-JH-100
Regeneration Gas Consumption	3–5% of nominal flow	3–5% of nominal flow	3–5% of nominal flow	3–5% of nominal flow
Wetted Piping Material	316L Stainless Steel (EP)	316L Stainless Steel (EP)	316L Stainless Steel (EP)	316L Stainless Steel (EP)
Helium Leak Rate	< 1.0×10^{-9} mbar·L/s	< 1.0×10^{-9} mbar·L/s	< 1.0×10^{-9} mbar·L/s	< 1.0×10^{-9} mbar·L/s
Inlet / Outlet Connection	1/4 inch Swagelok / VCR	3/8 inch Swagelok / VCR	1/2 inch Swagelok / VCR	1/2 inch Swagelok / VCR
Control Interface	7-inch color LCD touch HMI	7-inch color LCD touch HMI	10-inch color LCD touch HMI	10-inch color LCD touch HMI
Electrical Power Supply	220V AC, 50/60 Hz, 1.5 kW	220V AC, 50/60 Hz, 2.5 kW	220V AC, 50/60 Hz, 4.0 kW	380V 3-Phase, 50/60 Hz, 6.0 kW
Enclosure Dimensions (W×D×H)	600 × 650 × 1350 mm	700 × 750 × 1500 mm	850 × 850 × 1700 mm	1050 × 950 × 1850 mm