

GateKeeper® HGU Heated Getter Purifiers

Nitrogen and methane impurity removal for point-of-use purification of argon, helium, xenon, nitrogen, and hydrogen

GateKeeper® Heated Getter Units (HGU) are ideal solutions for point-of-use purification where CH₄ or N₂ impurity removal is required. Gases purified include Ar, He, Xe, N₂, and H₂.

The heated getter technology forms an irreversible bond with the impurities and removes them to sub-ppb levels. Unlike ambient purification technologies that rely on surface sorption only, heated getter technology utilizes the entire volume of material resulting in superior impurity capacity and longer purifier life.

APPLICATIONS

- Vapor deposition processes
 - MOCVD
 - PVD
 - CVD
 - Epitaxy
- Photolithography
- Metrology
- R&D laboratory experiments
- LED
- Crystal pulling
- Implant
- Etching
- Diffusion and oxidation processes
- Annealing
- Fiber optics
- Analytical
- Solar and photovoltaics



PS2-GC50 (left); PS3-MT3 (right)



PS4-MT3 and PS4-MT15 (left); PS4-MT50 (right)

PS2-GC50: Typical Flow Rate 0–0.2 slpm

SPECIFICATIONS

Maximum flow rate	0.2 slpm (nitrogen, helium, argon)
Outlet gas temperature	<50°C (122°F)
Average power consumption	<50 W
Metal particle filter	20 µm
Dimensions	Height: 23 cm (9") Width: 10 cm (4")
Weight	1.8 kg (4 lbs)
Standard features	¼" VCR fittings
Optional features	110 – 120 VAC or 220 – 240 VAC

PERFORMANCE DATA

Impurities removed	Nitrogen outlet purity	Rare gas outlet purity
H ₂ O	<10 ppb	<10 ppb
O ₂	<10 ppb	<10 ppb
CO	<10 ppb	<10 ppb
CO ₂	<10 ppb	<10 ppb
CH ₄	<50 ppb	<10 ppb
Other hydrocarbons	<10 ppb	<10 ppb
H ₂	<10 ppb	<10 ppb
N ₂	N/A	<10 ppb

PS3-MT3: Typical Flow Rate 0.2–3 slpm

SPECIFICATIONS

Maximum flow rate	5 slpm (nitrogen, helium, argon) 3 slpm (xenon)
Outlet gas temperature	<50°C (122°F)
Average power consumption	<50 W
Metal particle filter	0.003 µm
Dimensions	Height: 60 cm (24") Width: 25 cm (10") Depth: 10 cm (4")
Weight	6 kg (13 lbs)
Standard features	Bypass assembly)
Optional features	110 – 120 VAC or 220 – 240 VAC

PERFORMANCE DATA

Impurities removed	Nitrogen outlet purity	Rare gas outlet purity
H ₂ O	<1 ppb	<1 ppb
O ₂	<1 ppb	<1 ppb
CO	<1 ppb	<1 ppb
CO ₂	<1 ppb	<1 ppb
CH ₄	<1 ppb	<1 ppb
Other hydrocarbons	<1 ppb	<1 ppb
H ₂	<1 ppb	<1 ppb
N ₂	N/A	<1 ppb

PS4-MT3 and PS4-MT15: Typical Flow Rate 3 – 30 slpm

SPECIFICATIONS

	MT3	MT15
Average flow rate	5 slpm	15 slpm
Maximum flow rate	50 slpm (nitrogen, helium, argon) 30 slpm (hydrogen) 3 slpm (xenon)	75 slpm (nitrogen, helium, argon) 50 slpm (hydrogen) 9 slpm (xenon)
Outlet gas temperature	<50°C (122°F)	
Average power consumption	125 W	187 W
Metal particle filter	0.003 µm	
Dimensions	Height: 86.4 cm (34") Width: 20.3 cm (8") Depth: 20.9 – 22.7 cm (8.25" – 8.94")	
Weight	23 – 28 kg (50 – 61 lbs)	
Standard features	High temperature alarm Life status sensor (rare gas and nitrogen only) Bypass assembly Surface mountable enclosure with cooling fan	
Optional features	110 – 120 VAC or 220 – 240 VAC	

PERFORMANCE DATA

Impurities removed	GASES PURIFIED		
	Rare gas	Nitrogen	Hydrogen
H ₂ O	<1 ppb	<1 ppb	<1 ppb
O ₂	<1 ppb	<1 ppb	<1 ppb
CO	<1 ppb	<1 ppb	<1 ppb
CO ₂	<1 ppb	<1 ppb	<1 ppb
Total hydrocarbons	<1 ppb	<1 ppb	N/A
H ₂	<1 ppb	<1 ppb	N/A
N ₂	<1 ppb	N/A	<1 ppb

PS4-MT50: Typical Flow Rate 30 – 100/150 slpm

SPECIFICATIONS

Maximum flow rate	150 slpm (hydrogen)
	100 slpm (nitrogen, helium, argon)
	30 slpm (xenon)
Outlet gas temperature	<50°C (122°F)
Average power consumption	1.1 kW
Metal particle filter	0.003 µm
Dimensions	Height: 113 cm (44.5")
	Width: 53 cm (21")
	Depth: 30 cm (12")
Weight	70 kg (154 lbs)
Standard features	High temperature alarm
	PLC controlled operation
	Exhausted enclosure with separate electronics bay
	Life status indicator
Optional features	N ₂ purge system (hydrogen model only)
	Hydrogen leak detector (hydrogen model only)
	Emergency off button
	Manual bypass
	110 – 120 VAC or 220 – 240 VAC

PERFORMANCE DATA

Impurities removed	GASES PURIFIED		
	Rare gas	Nitrogen	Hydrogen
H ₂ O	<1 ppb	<1 ppb	<1 ppb
O ₂	<1 ppb	<1 ppb	<1 ppb
CO	<1 ppb	<1 ppb	<1 ppb
CO ₂	<1 ppb	<1 ppb	<1 ppb
Total hydrocarbons	<1 ppb	<1 ppb	N/A
H ₂	<1 ppb	<1 ppb	N/A
N ₂	<1 ppb	N/A	<1 ppb

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