Point-of-use Purification

saes getters

We support your innovation

MONO TORR® PS4 Series

HIGHLIGHTS

General Features

- ☐ Designed for UHP applications
- ☐ Heated zirconium getter alloy
- ☐ Removal of nitrogen and methane
- ☐ Automated operation
- ☐ Flow rate up to 75 slpm
- ☐ Life Status Sensor
- ☐ Protection from operator error

Gas Purified

- ☐ Argon, helium and other rare gases
- ☐ Nitrogen
- ☐ Hydrogen

Purity Performance

- ☐ O_2, H_2O, CO, CO_2, H_2, CH_4, N_2 removal
- ☐ Particle removal

Applications

- ☐ Metalization process (PVD, CVD)
- ☐ MOCVD - III-V process
- ☐ Analytical zero and carrier gas
- ☐ Optical fiber manufacturing
- ☐ Photolithography
- ☐ Gate oxide
- ☐ Silicon epitaxy
- ☐ Diffusion processes
- ☐ Crystal pulling
- ☐ Implant
- ☐ Radiation detector tubes
- ☐ H_2/He FID fuel
- ☐ Stored gas for satellites

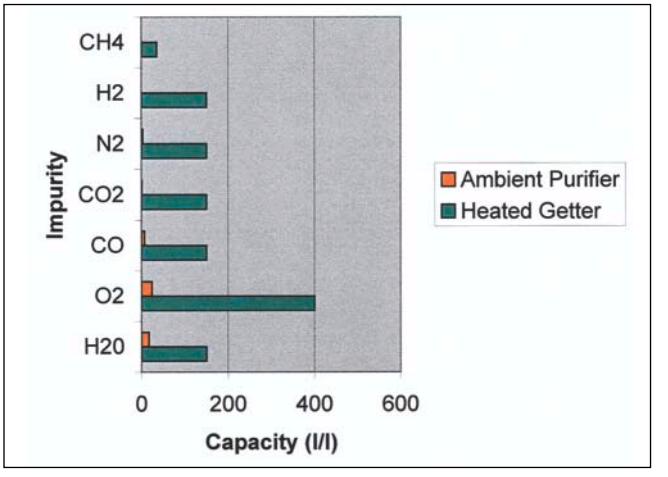
Packaged for Performance

The PS4 MonoTorr features an award winning design to remove impurities to below 1 ppb in hydrogen, nitrogen and rare gases.
Fully automated control, continuous reporting of operational status and a patented Life Status Sensor make the PS4 MonoTorr the intelligent solution for purifying flows up to 75 slpm.
Like all SAES Pure Gas purifiers, the PS4 MonoTorr is engineered for simplified installation, maintenance-free operation and has the backing of over 60 years of expertise in getter technologies by the SAES Getters Group.

PS4 MonoTorr

The Advantage of the Heated Zirconium Getter Alloy

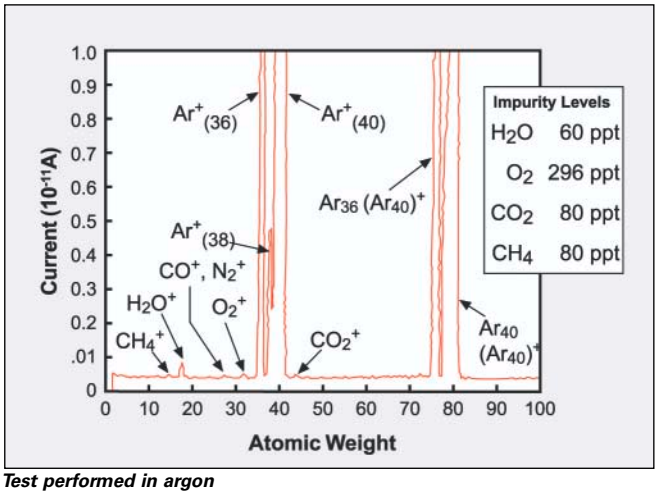
Getter materials irreversibly bind with impurity molecules. Heating causes them to diffuse into the bulk of the getter.
Unlike ambient technologies that rely on surface absorption only, the heated getter technology utilizes the entire volume of material. This results in superior impurity capacities and longer lifetime for the purifier, as shown in the comparison chart.
The heated getter technology also allows the removal of nitrogen, hydrogen and methane in rare gases.



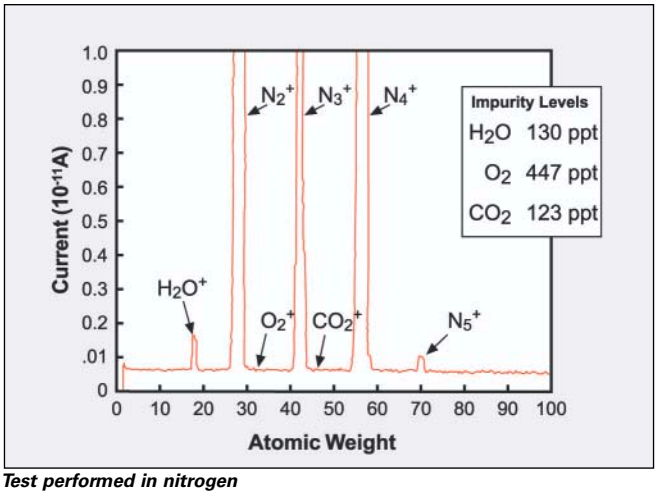
Heated getter versus ambient technology capacity

APIMS Validation

The PS4 MonoTorr has been qualified using an atmospheric pressure ionization mass spectrometer (APIMS). Upstream impurities fluctuating in the low-ppm range are immediately reduced to ppt levels.



Test performed in argon



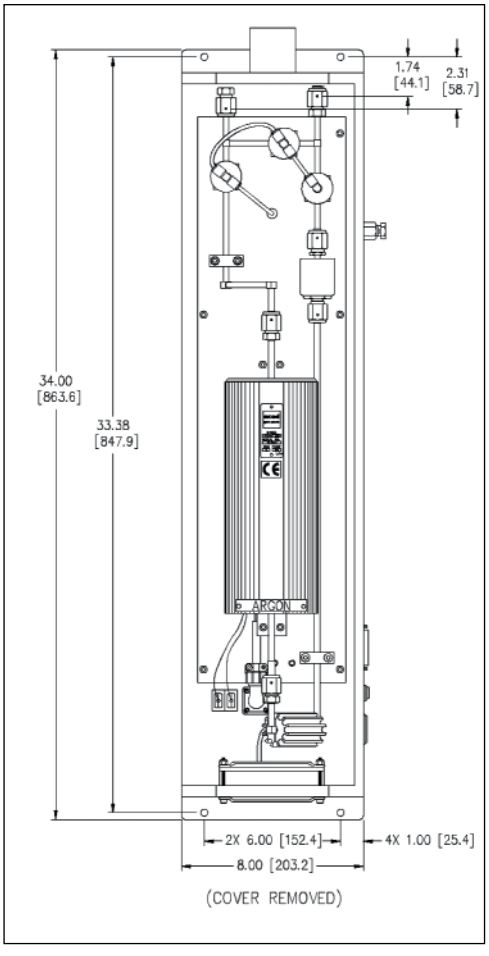
Test performed in nitrogen

Purity Performance

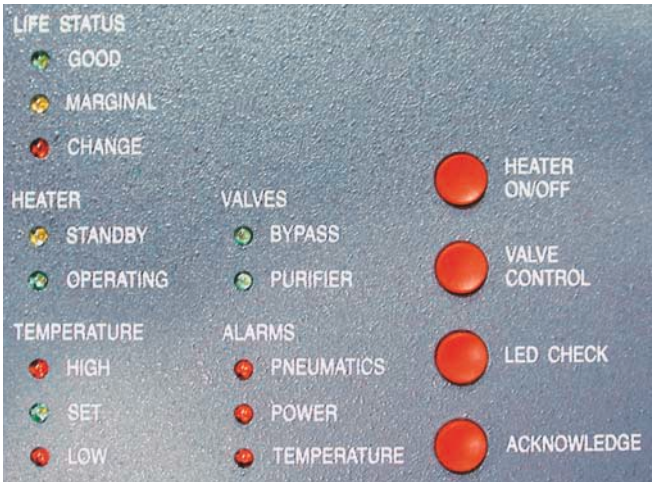
The PS4 MonoTorr is available with two different cartridge sizes. The MT3 is designed for flows up to 50 slpm (peak) and the MT15 for flows up to 75 slpm (peak).

Gas	Impurity	PS4 MonoTorr MT3		PS4 MonoTorr MT15	
		0-20 slpm	20-50 slpm	0-30 slpm	30-75 slpm
Rare gases	O_2, H_2O CO, CO_2	< 1 ppb	< 1 ppb	< 1 ppb	< 1 ppb
	N_2, H_2, CH_4	< 1 ppb	< 10 ppb	< 1 ppb	< 10 ppb
Nitrogen	O_2, H_2O CO, CO_2	< 1 ppb	< 1 ppb	< 1 ppb	< 1 ppb
	H_2, CH_4	< 1 ppb	< 10 ppb	< 1 ppb	< 10 ppb
Hydrogen		0-20 slpm	20-30 slpm	0-30 slpm	30-50 slpm
	O_2, H_2O CO, CO_2	< 1 ppb	< 1 ppb	< 1 ppb	< 1 ppb
	N_2	< 1 ppb	< 10 ppb	< 1 ppb	< 10 ppb

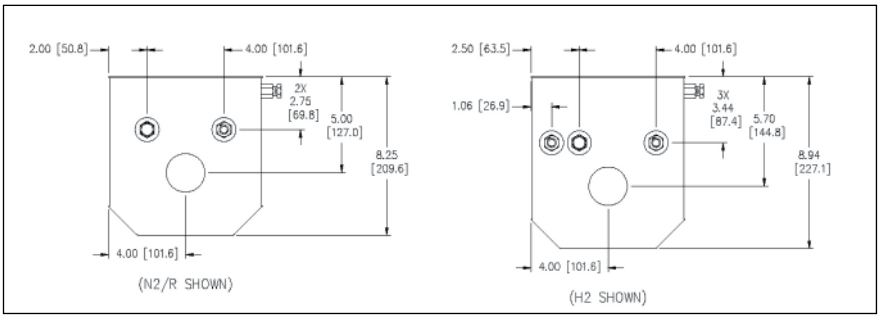
Product Details



PS4 MonoTorr front view.
Size given in inches and [millimetres]



Control panel



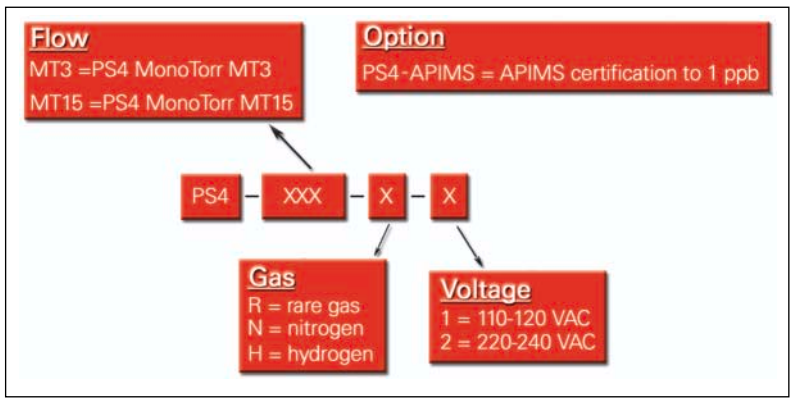
PS4 MonoTorr top views: nitrogen/rare gases and hydrogen configurations.
Size given in inches and [millimetres]

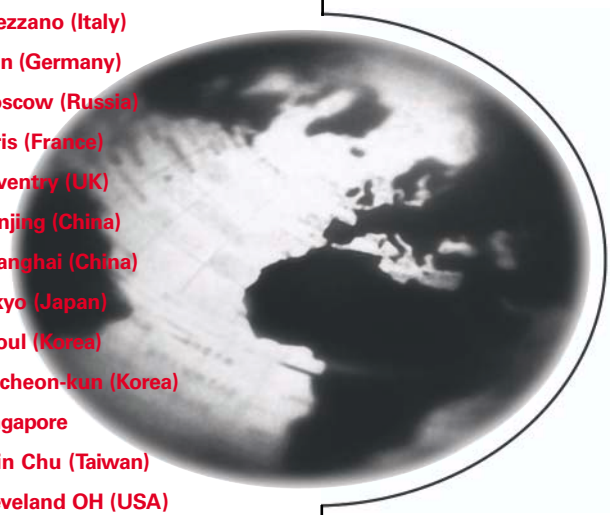
System Feature and Specification Matrix

PS4 MonoTorr MT3 & MT15			
Additional specifications and features	**Rare gases**	**Nitrogen**	**Hydrogen**
Operating temperature (°C)	400	350	300
Max pressure rating (bar)	10.3 (150 psig)	10.3 (150 psig)	10.3 (150 psig)
Heater power consumption (Nominal/Maximum) - (W)	125/<260 (3000) 187/<600 (15000)	125/<260 (3000) 187/<600 (15000)	125/<235 (3000) 187/<500 (15000)
Voltage (VAC)	110-120 or 220-240	110-120 or 220-240	110-120 or 220-240
Pneumatic supply pressure (bar)	5.5 - 6.9 (80-100 psig)	5.5 - 6.9 (80-100 psig)	5.5 - 6.9 (80-100 psig)
0.003 µm metal filter	Standard	Standard	Standard
Typical inlet gas quality	99.995%	99.995%	99.995%
1/4" SS diaphragm valves	Pneumatic	Pneumatic	Pneumatic
10 µinch Ra surface finish	Standard	Standard	Standard
1/4" VCR fittings	Standard	Standard	Standard
Life Status Sensor (LSS)	Standard	Standard	N/A
Bypass assembly	Standard	Standard	Standard
Surface mountable enclosure (with cooling fan)	Standard	Standard	Standard

Lifetime depends on actual inlet gas quality and flow rate. For custom applications and gases please contact us.

Ordering Information





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