

PS3-MT3-R/N SPECIFICATIONS



MonoTorr® Phase I, Rare Gas and Nitrogen Gas Purifier, 5 slpm

General Description

The MonoTorr® Rare Gas and Nitrogen Purifier is a getter-based purifier designed specifically to provide ultra-high purity (UHP) gas for semiconductor applications. Outlet impurity levels for O₂, H₂O, CO, CO₂, H₂, CH₄ and N₂ are reduced to low parts per billion (ppb) levels or below.

The patented getter alloy operated at elevated temperatures, removes impurities by forming irreversible chemical bonds. Impurities will not be released under any circumstances when the purifier is operated within specification.

The purifier will continuously supply ultra pure gas at rated flows provided that inlet impurities are within specified levels, until getter cartridge replacement is necessary.

The purifier features electropolished interior surface, zero dead space, and easy installation on the gas line. The purifier comes completely assembled, with ¼" female VCR fittings for both the gas inlet and the outlet. It includes UHP manual stainless steel diaphragm valves at inlet and outlet, a 0.003 µm metal particle filter and an on-board control unit.

PS3 Phase I Controller Safety Features

- Audible alarm
- Dual "K" thermocouples
- Over temperature alarm
- High differential temperature alarm
- All solid state design

Process Gas Specifications

Specification	SPG Standard
Maximum Flow Rate: (maximum purified gas delivered)	5 slpm

Nominal Flow Rate:	5 slpm
Minimum Flow Rate: (for purity measurement)	0.5 slpm
Maximum Inlet Pressure	10.3 bar (~150 psig)
Maximum Pressure Drop @ 7 bar inlet pressure and maximum rated flow	< 1 bar (~14.5 psid)
Inlet Gas Temperature Range	0° – 35° C (32° – 95° F)
Outlet Gas Temperature (maximum)	< 50° C (122° F)

Facilities Requirements – Electrical

Specification	SPG Standard
Installed Power (customer to specify voltage at time of order)	Optional 120 VAC – 260W Optional 220 VAC – 260W
Note: The purifier is designed to operate with a 30mA GFI that will trip when a 30mA leakage current occurs.	

Facilities Requirements – General

Specification	SPG Standard
Ambient Temperature Range	0° – 35° C (32° – 95° F)

Analytical Specifications (Based on 99.999% pure inlet gas)

SPG Standard Outlets	Rare Gas	SPG Standard Outlets	Nitrogen
O ₂	< 1 ppb	O ₂	< 1 ppb
H ₂ O	< 1 ppb	H ₂ O	< 1 ppb
CO	< 1 ppb	CO	< 1 ppb
CO ₂	< 1 ppb	CO ₂	< 1 ppb
H ₂	< 1 ppb	H ₂	< 1 ppb
CH ₄	< 1 ppb	CH ₄	< 1 ppb
N ₂	< 1 ppb	N ₂	N/A

General Purifier Specifications	
Purifier Height	58 cm (~23 inches)
Purifier Width	10 cm (~4 inches)
Backing plate	25 x 60 cm (10" x 24")
Purifier Weight	6 kg (13 pounds)
Feed Gas Inlet	¼ inch VCR Female
Purified Gas Outlet	¼ inch VCR Female
Getter Bed Operating Temperature	350 ~ 400° C (662 ~ 752° F)
Heater Power Consumption (watt) Nominal/Maximum	< 50 / < 260
Outlet Particle Filter	0.003 µm absolute all metal type
Valves	Two, ¼ inch diaphragm type, manual
Thermocouple	Two, ungrounded, K type
Standard power cord length	2 m (80 inches)
Gas Wetted Surface Finish	Up and Downstream of Getter Vessels = 316L SST, Electropolished, 12 Ra Maximum, 10 Ra Average for tubing and tube fittings
Control System	Discrete analog temperature controller with alarm and shut-down features
Accessories	2EA ¼ inch VCR gaskets 1EA 3 A fuse (120V), 1EA 2 A fuse (220V)
Applicable Codes & Standards	CE Marking