PALL Pall Corporation

Custom Gas Purifier Systems

Description

Pall purifier systems enable the removal of molecular contamination to sub-parts-per-billion (ppb) levels from a variety of gases used in the semiconductor, photovoltaic, LED and display industries. They are well suited for applications such as bulk delivery and gas bottle filling.

- Flow rates up to 4,000 slpm (141 scfm)
- Purifier assemblies contain integral particle filters
- Isolation valves allow for easy replacement of individual assemblies
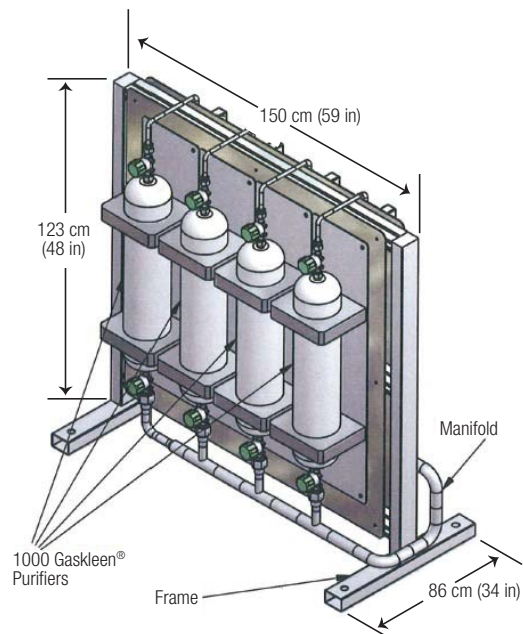- Custom configurations available to meet specific customer requirements

Specifications

Purifiable Gases and Removal Efficiency	• See Table 1
Materials	• All wetted surfaces are electropolished 316L stainless steel (except for the purification material) • ≤ 0.25 μm / 10 μin Ra internal surface finish • Housings meet or exceed VIM / VAR specifications
Particle Removal Rating[1]	• ≥ 0.4 μm (3 nm particle filter assemblies available as stand-alone units)
Housing Pressure Ratings	• Standard pressure: 1.7 MPa (250 psig) • High pressure: 20.7 MPa (3,000 psig)
Configurations	• Manifold contains 1 to 4 assemblies to accommodate flow rates up to 4,000 slpm (141 scfm) • Available with customer specific connections and components
Certifications	• ASME: Vessel is designed and manufactured in accordance with the ASME BPVC Section III, Div 1 and is U-stamped • PED: Available for most categories of gases
Leak Rating	• Assemblies are 100% helium leak tested to 1 x 10^{-9} atm-cm^3/s

[1] Particle rating is based on laboratory testing with NaCl aerosol.

Nominal Dimensions

150 cm (59 in)

123 cm (48 in)

86 cm (34 in)

Manifold

1000 Gaskleen® Purifiers

Frame

Table 1: List of Purifiable Gases

Gas	Purifier Material Code	Effluent Specification[2]
Nitrogen, argon, helium, xenon, krypton, neon	INP	<1 ppb H_2O, O_2, CO_2 and CO
Silane, hydrogen, methane, ethane, cyclopropane, propane, dimethyl ether	SIP	<1 ppb H_2O, O_2, CO_2 and CO
Carbon monoxide	SIP	<1 ppb H_2O, O_2, CO_2, $Ni(CO)_4$ and $Fe(CO)_5$
Fluoromethane, diflouromethane, trifluoromethane, tetrafluoroethane, pentafluoroethane, heptafluoropropane, carbon tetrafluoride, perfluoropropane, perfluorocyclobutane, hexafluoroethane	FCP	<1 ppb H_2O, O_2, and CO_2
Germane	GEH4P	<1 ppb H_2O, O_2, and CO_2
Sulfur hexafluoride	SF6P	<1 ppb H_2O, O_2, and CO_2
Air, carbon dioxide, oxygen, nitrous oxide	OXP	<10 ppb H_2O
Boron trichloride, chlorine, trichlorosilane, dichlorosilane	CLXP	<100 ppb H_2O
Hydrogen chloride	HCLP	<15 ppb H_2O
Hydrogen bromide	HBRP	<50 ppb H_2O
Photolithography clean dry air	CDAP	<1 ppb H_2O, <1 ppb organics (as C_4), <10 ppt acid gases (as SO_2), <15 ppt basic gases (as NH_3), <1 ppt refractory compounds (as HMDSO)

[2] Gas specific data available upon request.

Part Numbers/Ordering Information

Contact Pall Microelectronics

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