

## 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.

## Features & Benefits

- 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

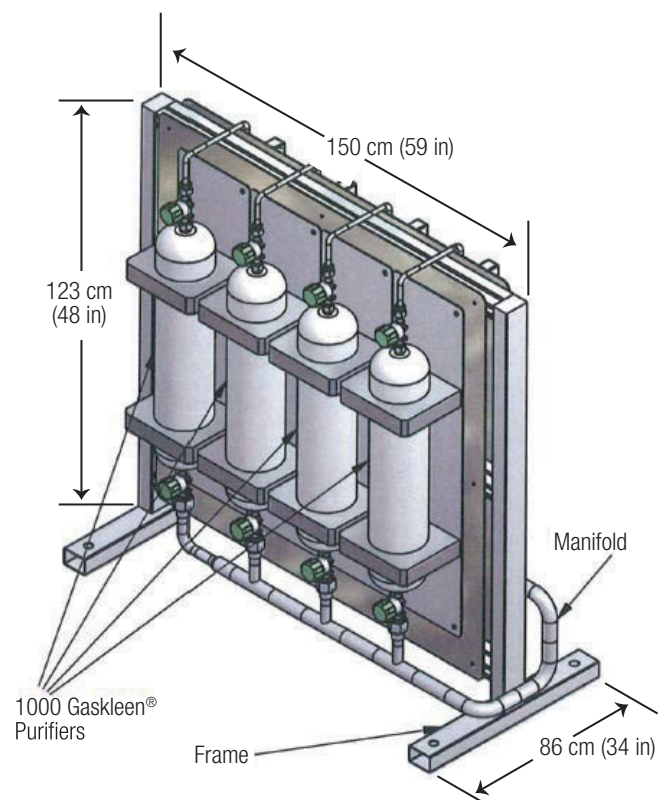
## Specifications

<b>Purifiable Gases and Removal Efficiency</b>	See Table 1
<b>Materials</b>	All wetted surfaces are electropolished 316L stainless steel (except for the purification material) Housings meet or exceed VIM / VAR specifications
<b>Internal Surface Finish</b>	$\leq 0.25 \mu\text{m} / 10 \mu\text{in } R_a$
<b>Particle Removal Rating<sup>1</sup></b>	$\geq 0.4 \mu\text{m}$ (3 nm particle filter assemblies available as stand-alone units)
<b>Housing Pressure Ratings</b>	Standard pressure: 1.7 MPa (250 psig) High pressure: 20.7 MPa (3,000 psig)
<b>Configurations</b>	Manifold contains 1 to 4 assemblies to accommodate flow rates up to 4,000 slpm (141 scfm) Available with customer specific connections and components
<b>Certifications</b>	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
<b>Leak Rating</b>	Assemblies are 100% helium leak tested to $1 \times 10^{-9} \text{ atm-cm}^3/\text{s}$

<sup>1</sup> Particle rating is based on laboratory testing with NaCl aerosol.



## Nominal Dimensions



**Table 1: List of Purifiable Gases**

Gas	Purifier Material Code	Effluent Specification <sup>2</sup>
Nitrogen, argon, helium, xenon, krypton, neon	INP	<1 ppb H <sub>2</sub> O, O <sub>2</sub> , CO <sub>2</sub> and CO
Silane, hydrogen, methane, ethane, cyclopropane, propane, dimethyl ether	SIP	<1 ppb H <sub>2</sub> O, O <sub>2</sub> , CO <sub>2</sub> and CO
Carbon monoxide	SIP	<1 ppb H <sub>2</sub> O, O <sub>2</sub> , CO <sub>2</sub> , Ni(CO) <sub>4</sub> and Fe(CO) <sub>5</sub>
Fluoromethane, difluoromethane, trifluoromethane, tetrafluoroethane, pentafluoroethane, heptafluoropropane, carbon tetrafluoride, perfluoropropane, perfluorocyclobutane, hexafluoroethane	FCP	<1 ppb H <sub>2</sub> O, O <sub>2</sub> , and CO <sub>2</sub>
Germane	GEH4P	<1 ppb H <sub>2</sub> O, O <sub>2</sub> , and CO <sub>2</sub>
Sulfur hexafluoride	SF6P	<1 ppb H <sub>2</sub> O, O <sub>2</sub> , and CO <sub>2</sub>
Air, carbon dioxide, oxygen, nitrous oxide	OXP	<10 ppb H <sub>2</sub> O
Boron trichloride, chlorine, trichlorosilane, dichlorosilane	CLXP	<100 ppb H <sub>2</sub> O
Hydrogen chloride	HCLP	<15 ppb H <sub>2</sub> O
Hydrogen bromide	HBRP	<50 ppb H <sub>2</sub> O
Lithography clean dry air	CDAP	<1 ppb H <sub>2</sub> O, <1 ppb organics (as C <sub>4</sub> ), <10 ppt acid gases (as SO <sub>2</sub> ), <15 ppt basic gases (as NH <sub>3</sub> ), <1 ppt refractory compounds (as HMDSO)

<sup>2</sup> Gas specific data available upon request.

## Part Numbers/Ordering Information

Contact Pall Microelectronics



### Microelectronics

25 Harbor Park Drive  
Port Washington, NY 11050  
+1 516 484 3600 telephone  
+1 800 360 7255 toll free US


### Nihon Pall Ltd.

6-5-1, Nishishinjuku,  
Shinjuku-ku  
Tokyo 163-1325 Japan  
+81 3 6901 5700 telephone  
+81 3 5322 2109 fax

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