Pall Corporation

# Ultra Clean Water Filtration Skid

## Description

The new Ultra Clean Water Filtration Skid features the latest technology for ultrapure water cleanliness, using a newly developed ultrafiltration (UF) membrane that is dual-rated at 2 nm and 4 kD.

UF is the state of the art final filtration step prior to the final utilization of ultrapure water in semiconductor manufacturing. It is used to remove traces of

- Nanoparticles
- Macromolecules
- Colloidal silicates

out of ultrapure water.

Hollow fiber membranes bundled in UF module housings divide the incoming ultrapure water into ultra clean permeate and contamination containing reject. Controlled back-diffusion of accumulated particles prevents contamination of the membrane. The reject — typically 5% of the permeate flow — discharges the collected contaminations from the UF modules. The reject flow will be cleaned up in a polisher.

The Ultra Clean Water Filtration Skid is used for today's most demanding ultra-high purity water systems in sub fab level or at the point of use.

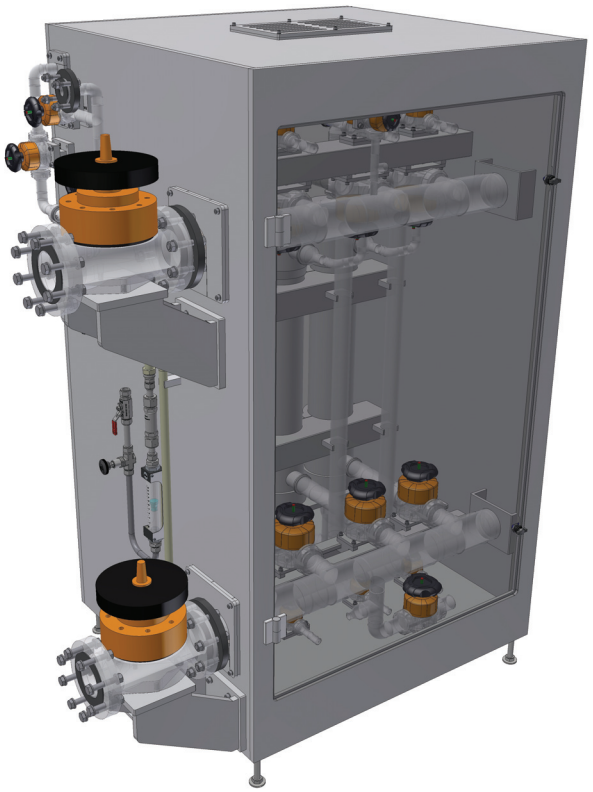
## A Key Tool for UPW Supply in the Semiconductor Industry

Up to four UF modules are combined in a closed micro environment. They facilitate up to 50 $m^3/h$ permeate flow. Skids can be combined to provide higher flow capacity.

A purge flow of filtered clean dry air (CDA) prior to and during maintenance creates a clean environment surrounding the UF modules and reduces contamination of interfaces and piping/module connections.

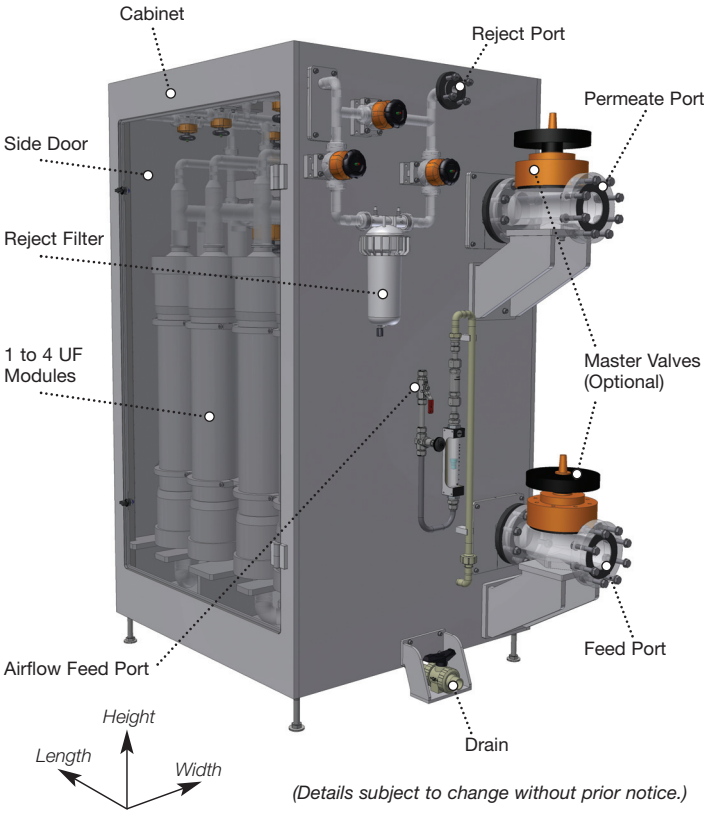
Water reject is treated by a polishing unit that increases recovery rate up to 100%.

* Microza is a trademark of Asahi Kasei Chemical Corporation



## Designed to Meet the Highest Demands

- Superior retention of nanoparticles, macro-molecular contamination and colloidal silicates
- Up to 100% recovery rate
- Uses high performance Pall Microza UF modules
- Preventive maintenance based on *in situ* module integrity tests using Palltronic® analyzers
- Compact "all in one" cabinet provides smallest footprint
- PVDF HP piping for highest purity
- Air purging facilitates module exchange and maintenance operations under micro environment
- Recording, visualization and digital monitoring of pressure signals by an electronic data manager enables easy system integration
- "Plug & play" approach minimizes time and cost for installation and commissioning
- Seismic brackets




*(Details subject to change without prior notice.)*

## Specifications

### Dimensions (Length x Width x Height)

Base Unit: 1,250 x 1,100 x 2,174 mm
Base Unit + Valves: 1,618 x 1,100 x 2,174 mm

### Space Requirements (Length x Width x Height, approximate)

Base Unit: 2,000 x 2,300 x 2,500 mm
Base Unit + Valves: 2,370 x 2,300 x 2,500 mm

### Net Weight

380 kg (without disposable filters and UF Modules, approximate)

### Main Connections

Feed and Permeate: DN100 or 4"
Reject: DN25 or 1"

### Options

Master valves DN100 or 4" for feed and permeate
Further options on demand

## Design Parameters

| | Unit | Value |
|---|---|---|
| Maximum operating pressure | barg | 9 |
| Maximum operating temperature* | °C | up to 80 |
| Design Permeate flow rate | $m^3/h$ | up to 50 |
| Design airflow | $Nm^3/h$ | up to 58 |
| Material for water piping system | | PVDF HP |
| Number of UF modules | | 1 to 4 |
| Suitable UF module series | Pall Microza OAT-6036 or OLT-6036 | |

* 90 °C for short term sanitization

## Utilities

- Power supply for data logger:
  110-230 V AC, 1 phase 50 or 60 Hz.
- Air supply:
  0.6 – 0.8 MPa ( 87 – 116 psig);
  < 60 $Nm^3/h$ (temporarily);
  dry, filtered, oil-free, ambient temperature
- 24 V interface