

An efficient and cost-effective solution for water treatment in the food and beverage industry

Pall Aria™ FB membrane systems are specifically designed to meet the stringent water requirements of the food and beverage industry. The fully-automated, stainless steel system simplifies the traditional water treatment process, while ensuring increased protection of all downstream equipment. By providing constant and high quality water irrespective of raw feed water variance, food and beverage manufacturers can reduce their overall filtration costs at their production sites.

Pall Aria FB systems treat difficult water in food and beverage applications, reducing the water fees and cost-effectively replacing sand filters. Pall Aria FB systems utilize robust polyvinylidene fluoride (PVDF) hollow fiber microfiltration membranes to retain suspended solids and pathogenic microbes. The retained solids are concentrated in a low volume waste stream that is discharged from the system. The membranes are capable of handling high flux rates and are precisely packaged within a compact system footprint. Fully-automated, simple and easy to operate, the system is the solution of choice for high water quality production within the food and beverage industry.

Benefits

Pall has extensive experience in providing membrane solutions for municipal water treatment and is dedicated to advancing its technology to ensure simple and cost-effective solutions that achieve reliable process control. Pall Aria FB membrane filtration systems incorporate unique features which enable food and beverage plants to achieve high water quality at reduced operating costs (up to 50% compared to conventional treatment methods), while ensuring high microbiological process safety. These features include:

- Durable PVDF hollow fiber membranes produce consistent water quality, regardless of the raw water quality (within specified limits), for most typical water treatment applications
- Overall cost improvement
 - low chemical consumption due to efficient mechanical backwash
 - low energy consumption (typically 0.09 kWh per m³ filtered water or 0.00035 kWh per gal)
 - minimal water losses (up to 98% water recovery) due to dead-end filtration
- High microbiological safety: stainless steel hygienic design and automatic disinfection when the system is out of operation for more than 24 hours
- Process traceability through performance monitoring and recording (data logger optional) and modules testing
- Simple, easy-to-operate, operator-friendly touch screen panel with pre-programmed sequences

Pall Aria™ FB Automatic Backwashable Water Filtration Systems



Pall Aria FB Modules

Pall Aria FB modules are made up of Pall's proven hollow fiber PVDF membranes. Due to the special homogenous structure of the hollow fibers, the modules distinguish themselves from conventional modules by requiring less cleaning and, at the same time, offering longer service life. Each module contains 50 square meters (538 square feet) of surface area.

The module components include:

Membrane:	Polyvinylidene fluoride (PVDF)
Potting:	Polyurethane
Sleeve:	Polypropylene
Housing:	Acrylonitrile butadiene styrene (ABS)
Seals:	EPR/EPDM

Pall Aria FB System Components

Pall Aria FB systems are fully automated, modular systems that are available in standard packages with 2-12 modules installed (see Table 1 on next page). The 304 stainless steel piping manifolds, pumps, and instruments are mounted on a mobile frame which includes the following:

- Frequency controlled raw water pump
- Stainless steel piping
- Programmable logic controller (PLC) system and touch screen
- Membrane cleaning unit (MCU) for chemical cleaning of the system

Pall Aria FB Equipment Options

The following options are available as add-ons to the standard system:

- Filtrate pump
- Data logger
- Chemical dosing station
- Material upgrade in AISI 316/316L
- Pumps with 3A certificates
- Sanitary sampling valve
- Non-standard power supply
- UL/CSA listed parts

Compliance

Pall Aria FB systems and modules have been qualified for compliance to specific regulatory requirements for products coming into contact with food. Please contact Pall for more information.

Operating Conditions

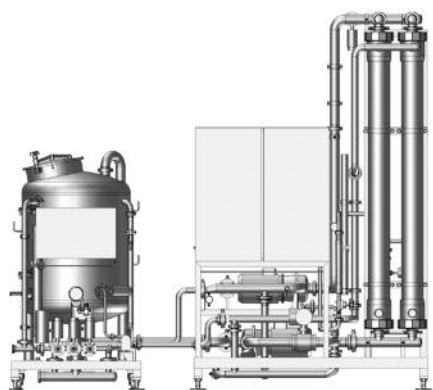
Water filtration

Inlet pressure: 0 to 0.7 bar (0 to 10 psi)

Temperature: 5 to 40°C (41 to 104°F)

Maximum temperature for cleaning: 40°C (104°F)

Front view



Left side view



Right side view



Rear view

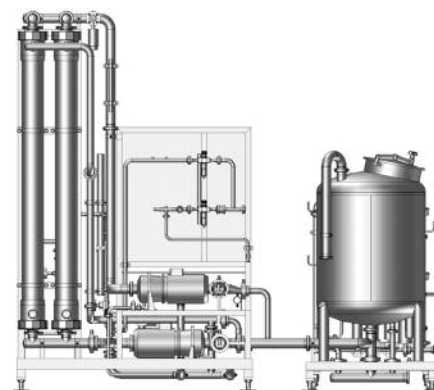


Table 1: Standard Filtration Skid Specifications

Model	No. of modules	Flow rate m ³ /h (gpm)	Length mm (ft)	Width mm (ft)	Height mm (ft)	Weight (empty) kg (lb)
Pall Aria FB 2	2	Up to 10 (44)	1500 (5.0)	1085 (3.6)	2830 (9.3)	950 (2094)
Pall Aria FB 4	4	Up to 20 (88)	1750 (5.7)	1085 (3.6)	2830 (9.3)	1050 (2315)
Pall Aria FB 6	6	Up to 30 (132)	2175 (7.1)	1175 (3.9)	2850 (9.3)	1300 (2866)
Pall Aria FB 8	8	Up to 40 (176)	2425 (7.9)	1175 (3.9)	2850 (9.3)	1400 (3086)
Pall Aria FB 10	10	Up to 50 (220)	2935 (9.6)	1280 (4.2)	2870 (9.5)	1650 (3638)
Pall Aria FB 12	12	Up to 60 (264)	3185 (10.5)	1280 (4.2)	2870 (9.5)	1750 (3858)