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# X-FLOW WATER MIRACLE

# CLEAN WATER EVERYWHERE

## GENERAL INFORMATION

Water scarcity and water pollution cause water stress all around the world. An insufficient supply of clean and safe potable water is a daily challenge for more than one billion people around the world, especially in remote areas and in areas that face humanitarian disasters. While there is often a source of fresh water from rivers, lakes or wells nearby, the water is not suitable for human consumption as it is contaminated by bacteria and viruses. As a solution to this problem, Pentair X-Flow has developed a decentralized compact water treatment system - the Water Miracle - for long-term, remote water supply.

The Water Miracle can treat any quality of fresh surface water to produce high-quality drinking water which makes it capable of satisfying the drinking water needs of an entire small town or village. The capacity of these small-scale, mobile purification units, based on ultrafiltration (UF) membrane technology, range from 2,000 to 3,000 liters per hour (530 to 800 gallons per hour). Each Water Miracle unit runs on direct electricity or a gas-powered generator. The system is fully automatic with a one-button operation.

## BENEFITS

- 99.9999% bacteria and 99.99% virus removal
- Easily transportable
- One-button start-up
- No infrastructure needed
- No solid waste residue
- Easy maintenance
- Simple daily operation
- Robust construction

## APPLICATIONS

- Special events
- Rural/remote camps
- Event venues (e.g. concerts, exhibitions, sports)
- Construction sites
- Gas & Oil work sites
- Villages
- Military Organizations



Transportable units



Containerized units



Emergency back-up



## WATER TREATMENT

Equipped with two Aquaflex™ ultrafiltration (UF) membranes, the Water Miracle is designed to produce clean and safe drinking water that is safe for human consumption. With the help of a submersible pump, water is taken from the source and is fed directly into the unit. A pre-filter strainer removes larger particles from the feed water. From there, the water is filtered through Pentair X-Flow's proven UF membranes, which remove suspended solids including viruses and bacteria.

A range of optional post-treatment additions are available to meet specific needs. Several post-treatment options, such as activated carbon, ultraviolet (UV) and/or chlorine disinfection packages, and arsenic removal can be added to serve as additional barriers in order to meet specific requirements, or cope with different source water qualities. Our well experienced engineers can help to select the right solution.

## OPERATION & MAINTENANCE

The Water Miracle can be set up quickly and used right at the waterfront. No additional water transportation by humans or piping is needed. This makes the Water Miracle the ideal solution for a wide variety of applications for those living in remote areas or areas where infrastructure does not exist (anymore).

Easy operation and maintenance ensures that the Water Miracle operates reliably and provides a long-term solution to relief the water stress of entire communities. The daily maintenance is reduced to visual inspection of specific pressure indicators and the selected equipment is intended for long-lasting operation under given environmental circumstances.

## CONTAINERIZED UNITS

The Water Miracle can be placed in the open air, but it can also be installed into containers upon request that can be used as stationary or transportable units. The containerized Water Miracles can either be placed at the edge of a river, lake or well, or connected to an unreliable drinking water pipe or a water tank in the area.

While one Water Miracle can already purify up to 3 m<sup>3</sup>/h, several Water Miracles can also be connected to reach even higher capacities and provide a safe drinking water for large groups of inhabitants, visitors or personnel on-site. The containerized units can be designed according to the preferences of the customer and can for example be equipped with air-conditioning and light.

## SYSTEM CHARACTERISTICS

### Maximum capacity

2,000 or 3,000 l/h

### Energy consumption (avg)

1.1 kW/h

### Body (frame work)

PVC/Plastic

### Membrane

Aquaflux 40

### Dimensions (m)

1.2 x 0.8 x 2.3

### Power supply

Generator/electrical supply

### Pump

Centrifugal

### Weight (kg)

Approx. 350

### Virus/Bacteria removal

99.99% (log 4)/99.9999% (log 6)

## OPTIONS

GRP frame	•
Activated carbon package	◦
UV package	◦
Full service contract	◦

- standard
- optional



**User-friendly:** People with little or no education can operate the system.

**Reliable:** The maintenance of the device is kept to a minimum.

**Safe:** Treated water is safe for human consumption.

**Robust:** The system can be operated in the open air.

**Practical:** Uses available water resources in the area.



# PIONEERS IN MEMBRANE FILTRATION

## ABOUT PENTAIR X-FLOW

Pentair X-Flow has broad know-how and a proud history in the development and application of innovative membrane filtration technologies. The company develops and supplies membrane technology to global municipal and industrial markets. The product portfolio contains numerous standard membranes, modules and units for filtration and purification processes.

Throughout the years, Pentair X-Flow has especially gained expertise and experience in water purification, ranging from producing potable water to treating wastewater and the pre-treatment of seawater, but also in the food, beverage and pharmaceutical industries.

Worldwide, Pentair X-Flow has an extensive network of professional sales offices, service centers, agents and distributors that work together to make Pentair X-Flow the partner of choice for world-class water purification solutions.



## FULL CIRCLE MEMBRANE TECHNOLOGY PARTNER

The success of any project, no matter how big or small, starts with the selection of the right membrane product, continues during the design and commissioning phase and is finally guaranteed by the right maintenance and timely service.

With research, production, engineering, automation, project management and service in-house, Pentair X-Flow focuses on the development of durable and reliable products that can be tailored to the specific needs of our customers.

As all of these aspects are equally important to us, Pentair X-Flow is able to support its customers from A-Z and achieve unique results together. The benefits of this full circle partnering approach are demonstrated by the many worldwide projects where Pentair X-Flow's innovative membrane products are applied.



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