

GIGAMEM® RANGE

Outstanding performance, reliability,
adaptability, and ease of use

Innovation in ULTRAFILTRATION

The
HIGHEST CAPACITY,
SMALLEST FOOTPRINT
& MOST COST-EFFECTIVE
ULTRAFILTRATION MODULE
available on the market

A new design: individually removable membrane elements equip the Gigamem® vessel, which remains permanently fixed in place.

A design adapted to the requirements of water treatment plants:

- For new projects
- To replace other types of ultrafiltration membranes

From 70m²
to **540m²**
of filtration
surface

polymem
MEMBRANE MANUFACTURER

UF 240

polymem
MEMBRANE MANUFACTURER

The GIGAMEM® Concept

THE GIGAMEM® MODULE IS DESIGNED AS A PERMANENT VESSEL CONTAINING MULTIPLE INDIVIDUALLY INSTALLABLE AND REPLACEABLE MEMBRANE ELEMENTS.

MEMBRANES

Gigamem® modules can be configured with either microfiltration or ultrafiltration hollow fiber membranes: pore size and material are selected in accordance with the requirements of the application.

The most typical ultrafiltration configurations incorporate either the 0.01 µm polysulfone double skin membranes or the 0.015 µm fouling-resistant Neophil® - polyvinylidene fluoride (PVDF) based - membranes.

Both ultrafiltration membranes are capable of producing effluent with:

- Turbidity ≤ 0.1 NTU
- 6 log rejection of microorganisms
- 4 log rejection of viruses
- SDI < 3

MEMBRANE ELEMENTS

Thousands of fibers are assembled into a UF2555 membrane element, offering 10.4 m² of filtration surface. Each membrane element within the vessel is individually removable and replaceable, lightweight, and easy to handle.

VESSEL

The Gigamem® modules' self-supported vessel is made of stainless steel 316L (fresh water treatment), durable and infinitely recyclable material or PVC for the UF80G modules.

For special applications (ex. chlorinated sea water) other materials are available.

PROCESS

Gigamem® modules operate in pressurized, dead-end, outside/in filtration mode. The backwash and maintenance cleanings are particularly effective and economical, with the ability to drain the module and to air scour the fibers.

Gigamem® modules offer several advantages over submerged membranes and other pressurized membranes :

- Self-supporting, no frame for attachment
- Fewer pipes and valves
- Possible to backwash module by module
- Replacement of only individual membrane elements
- Affordable membrane renewal due to low-cost element replacements
- On-line integrity test
- Easy and secured-in-place maintenance (including repairs)

EXCLUSIVE

GIGAMEM® RANGE

High-performance technology with low investment and operating costs



UF2555-S2 membrane elements are ACS approved (French "Attestation de Conformité Sanitaire")



Gigamem® UF240 is NSF ANSI 61 approved



1. COMPETITIVE INVESTMENT COSTS

UNMATCHED COMPACTNESS

Gigamem® modules are very compact; for example, the UF240 offers 540 m² of filtration surface in a footprint of only 0.6 m².

Reduced overall plant size.

NO FRAME

Each Gigamem® module is self-supporting and directly connected to raw and treated water pipes on the upper side of the module.

Manufacturing costs for treatment plants are substantially reduced.

POSSIBLE OUTSIDE INSTALLATION

Gigamem® modules can be installed outside (frost free) as they are not UV sensitive.

Costs for building are cancelled.

2. LOW OPERATING COSTS

REDUCED REPLACEMENT COST

• Only membrane bundles that require replacement are exchanged (each membrane element is individually removable). The vessels remain in place.

• The cost per square meter of the membranes is low.

Membrane replacement cost is greatly reduced.

EASY MAINTENANCE

Maintenance is performed in place: only membrane elements are removed and replaced (easily handleable by one person).

Improved and simplified maintenance and handling.

DURABILITY AND SUSTAINABLE DEVELOPMENT

The module vessel remains on site once it is set up for the whole operational life of the plant, and is then recycled.

The waste is reduced to membrane only.

APPLICATIONS



Drinking water



Process water



Municipal or industrial wastewater tertiary treatment



Pretreatment to desalination and demineralization



THE MODULES

	UF80G	UF240G
Height	170 cm 67 Inches	190 cm 75 inches
Diameter	22.5 cm 8.66 Inches	61 cm 24 inches
Membrane elements number	7	52
Membrane surface	73 m ² 786 ft ²	540 m ² 5,810 ft ²



SPECIFICATIONS

- Filtration type: Outside/in, hollow fiber membranes
- Operating temperature: 2 - 35 °C
- A standard module of the Gigamem® Range is composed of:
 - Self-supporting vessel
 - Membrane element distribution plate
 - Membrane elements

VESSEL

- Stainless steel vessel for fresh water treatment
- Plastic low pressure vessel for sea water treatment
- Composite high pressure or titanium vessel for special applications

MEMBRANES

- Material: PSF or Neophil™ PVDF
- Pore size: Microfiltration to ultrafiltration

GIGAMEM® RACKS AND SKIDS

Polymem offers its expertise to size, design and/or build systems composed of Gigamem® modules.



Discover the other Polymem® microfiltration and ultrafiltration module ranges at www.polymem.fr:

- Aquamem® turnkey standard systems
- Polymem® Inside for our custom made product line
- Housemem™ range for residential and hospital applications
- Ultramem® range for low to medium capacity plants
- InoMem™ range for crossflow filtration

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