

## Researcher12 Steamer

Autoclaved, Gamma Irradiated  
Hollow Fiber Cartridges  
Easy and Reliable



**Researcher Steamer** hollow fiber membrane products incorporate our latest glycerin free low extractables, heat resistant modified polyethersulfone (m-PES) membrane technology. All **Steamer** products are gamma irradiated and ready to use without any tedious pre-rinse. The **Steamer** HF cartridges are the product of choice for perfusion applications. They can be repetitively autoclaved in an ATF perfusion unit or as a stand alone HF cartridge. Please contact us for the correct **Steamer** product for ATF 2-10 models at [experttalk@WaterSep.net](mailto:experttalk@WaterSep.net).

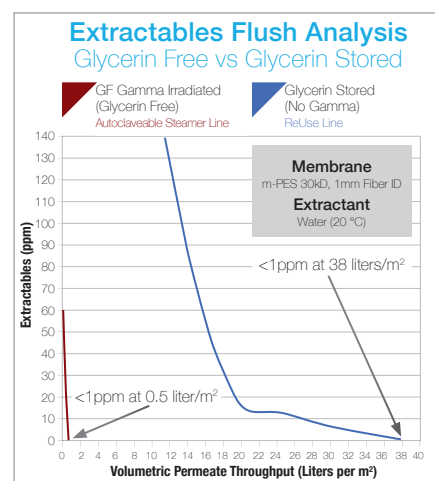
The extractables level for the **Researcher Steamer** is approximately 80x less than a glycerin conditioned membrane, see [Extractables Flush Analysis](#). After a quick buffer conditioning the HF cartridge is ready to be used or autoclaved. For autoclaving directions, please see the Steamer Validation Guide at [www.WaterSep.net](http://www.WaterSep.net).

The **Researcher Steamer** cross flow hollow fiber membrane cartridges are positioned between the laboratory scale **Explorer Steamer** and the pilot scale **Investigator Steamer** cartridges. With a surface area of 444 cm<sup>2</sup>, the **Researcher12 Steamer** are the perfect choice for perfusion applications, small aseptic processes and preparative biopharmaceutical work with sample volumes between 400 ml up to 2,000 ml with a typical permeate flow rate of 1.3 to 2.7 L/hr for ultrafiltration applications and .89 to 1.8 L/hr for microfiltration applications.

Offered in the same path length as all other WaterSep 12" (30 cm) hollow fiber cartridges for exact and predictable scale up and scale down.

The **Researcher12 Steamer** cartridges offer true ready to use crossflow filtration that is:

- Gamma irradiated - ready to use - no rinse.
- Humectant free - 80% less extractables, see [Extractables Flush Analysis](#).
- Free of time-consuming cleaning validation.
- At a reduced risk of cross contamination.
- Consistent, membrane performance batch to batch.
- Self-contained and requires no assembly, no expensive hardware and no membrane installation.
- Significantly less expensive than traditional cassette formats.
- Every HF cartridge is integrity tested and has an individual lot number for easy traceability.



## TYPICAL APPLICATIONS

- **Cell perfusion** with an ATF system or conventional pump operated perfusion. (Bioreactor and **Steamer** hollow fiber assemblies can be autoclaved simultaneously.)
- Small **aseptic/sterile UF-MF applications** where autoclaving is required.
- Rapid clarification of small volumes of **cell culture, fermentation solutions and virus/vaccine suspensions**.
- Concentration and diafiltration of **monoclonal antibodies, enzymes, blood components** and other proteins.
- Preparative biopharmaceutical work.

## Researcher12 Steamer

### ORDERING INFORMATION

Place orders online at [www.watersep.net](http://www.watersep.net), or email purchase orders to [orders@watersep.net](mailto:orders@watersep.net), sales order confirmation to follow.

#### Researcher12 Steamer HF Cartridge

0.5 mm ID\*

AU XXX 05RES12 S3, 3/pkg

AU XXX 05RES12 S6, 6/pkg

\*Not made in 0.65  $\mu$ m

1.0 mm ID

AU XXX 10RES12 S3, 3/pkg

AU XXX 10RES12 S6, 6/pkg

2.0 mm ID\*

AU XXX 20RES12 S3, 3/pkg

AU XXX 20RES12 S6, 6/pkg

\*Available in 10K, 50K, 300K - 750K and 0.1  $\mu$ m - 0.45  $\mu$ m

Replace XXX with:

003 for 3K	100 for 100K	910 for 0.1 $\mu$ m
005 for 5K	300 for 300K	920 for 0.2 $\mu$ m
010 for 10K	500 for 500K	945 for 0.45 $\mu$ m
030 for 30K	750 for 750K	965 for 0.65 $\mu$ m

### SPECIFICATIONS

Cartridge Dimensions

0.75" (1.91 cm) x 12.28" (31.20 cm)

Membrane Surface Area

0.478 ft<sup>2</sup> (444 cm<sup>2</sup>)

Molecular Weight Cut-off

3K, 5K, 10K, 30K, 50K, 100K, 300K, 500K, 750K

Membrane Pore Size

0.1  $\mu$ m, 0.2  $\mu$ m and 0.45  $\mu$ m, 0.65  $\mu$ m

Fiber ID

0.5 mm, 1.0 mm, 2.0 mm

### MATERIALS OF CONSTRUCTION

The cartridge as assembled is USP Class VI compliant.

Membrane

Modified Polyethersulfone (m-PES)

Housing

White Polysulfone

Encapsulant

Epoxy

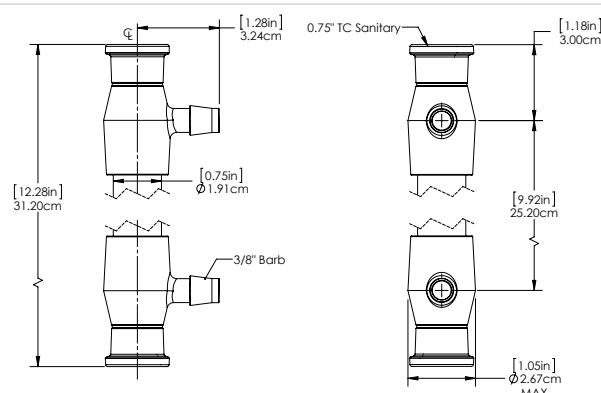
### CONNECTIONS

Feed/Retentate

0.75" TC Standard Sanitary Fitting

Permeate

3/8" Barb



Technical Support: [experttalk@watersep.net](mailto:experttalk@watersep.net)  
or call 508.970.0089 x 204.