

# Continuous Hollow Fiber Cell Perfusion

## Disposable Hollow Fiber Tangential Flow Modules for Cell Perfusion

Manufactured from non-cytotoxic USP class VI materials, Spectrum CellFlo® modules are designed to separate animal cells from spent media. The modules use large diameter hollow fiber flow channels to minimize plugging due to cell agglomeration and are non-pyrogenic by LAL. CellFlo® modules can be sterilized by autoclaving and are priced to be disposable. Single use disposability eliminates the costs and risks associated with cleaning and rinsing, simplifies validation and ensures consistent optimum performance and protein passage.

### Increase Bioreactor Output

CellFlo® technology uses hollow fiber membranes arranged in a shell and tube configuration. In this application, cells are gently pumped through the lumen of the hollow fiber membrane. While membrane retains the cells, secreted proteins permeate the membrane structure and enter the extracapillary space. Using this technique, spent media is removed with secreted proteins and unwanted metabolites while fresh media is continuously added to maintain bioreactor volume. CellFlo® technology allows control of the extracellular environment to achieve optimal conditions for product secretion.

Using CellFlo® perfusion, ten-fold daily production increases have been achieved. Other major benefits of perfusion culture include:

- Increased total output
- Less media usage per gram of product recovered
- Greater cell density
- Simplified downstream purification
- Prolonged culture life
- Reduced in-reactor product degradation

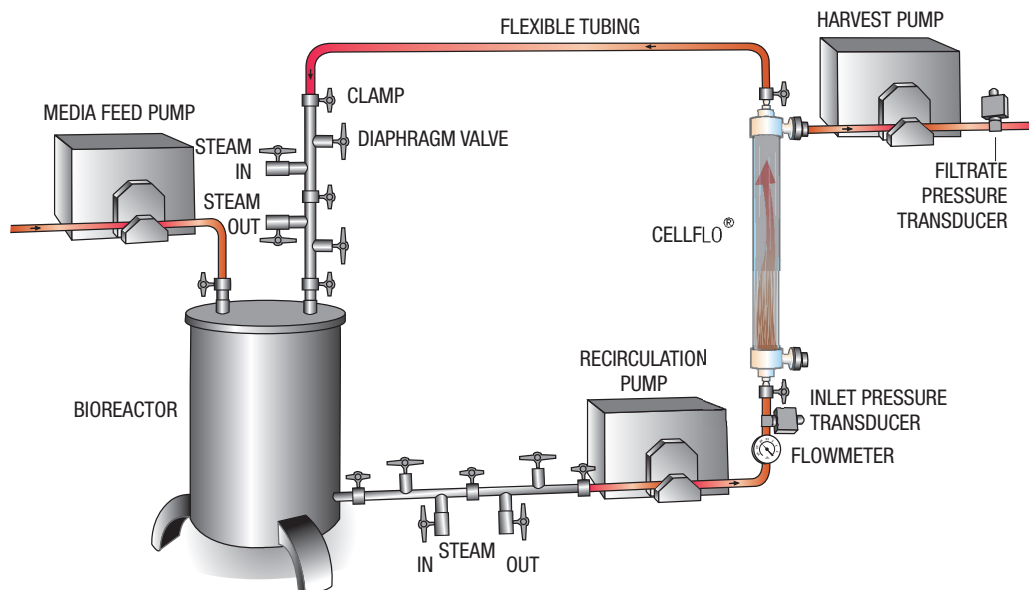


Spectrum CellFlo® Modules with process volumes of 3 to 1,000 liters.

Spectrum supplies engineered systems for monitoring the operating conditions in long-term cell culture. Spectrum also gladly assists users in adapting existing hardware to utilize CellFlo® technology. Request the Spectrum Perfusion Handbook shown below.

### Specifications:

- Biocompatible Materials:  
USP class VI materials include mixed cellulose ester membranes, polysulfone housing, polyurethane potting and trace glycerin.
- Modules are non-pyrogenic by LAL.
- Autoclaving: one 30-minute cycle at 121°C.



Schematic of bioreactor set-up using Spectrum CellFlo® Module technology.

