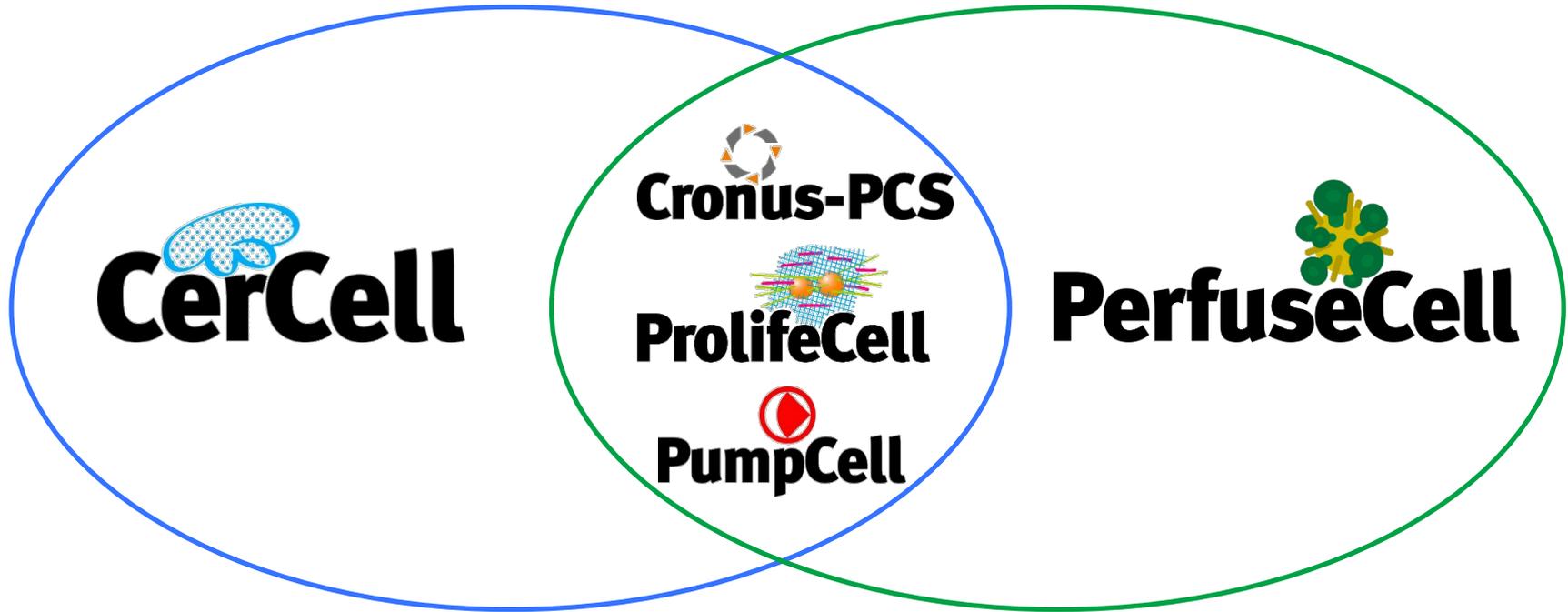


The Setup

Stobbe Group






Configurable batch
Single-Use-Bioreactor's and
Single-Use-Fermenter's.

www.cercell.com




Programmable
Single-Use-Pump's, 0-3 bar,
few mL/hour to 25 liter/min.

www.pumpcell.com




Semi-continuous Perfusion
Single-Use-Bioreactor for
expression of anti-bodies.

www.perfusecell.com



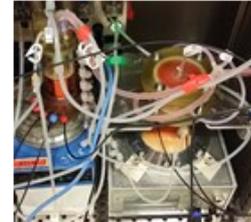

Process-Control-System
components for PerfuseCell,
PumpCell and ProlifeCell.

www.cronus-pcs.com




Continuous Perfusion
Single-Use-Bioreactor for
expression and proliferation

www.prolifecell.com



Stobbe Group

"Tailored Bioprocess Solutions. Beyond the Standard."

Denmark, January 2026



Product groups

 CerCell	 PerfuseCell	 Cronus-PCS	 PumpCell	 ProlifeCell
Configurable single-use batch Bioreactors, Fermenters and Mixers from 0.25 to 30L.	Semi-continuous single-use Perfusion - Bioreactors with integrated cell retention filter and process pump.	Process-Control-System components for CerCell, PerfuseCell, PumpCell and ProlifeCell.	Programmable Single-Use-Pumps, 0-3 bar, few mL/hour to 25 liter/min.	Continuous Perfusion Single-Use Bioreactor for expression and proliferation.
www.cercell.com	www.perfusecell.com	www.cronus-pcs.com	www.pumpcell.com	www.prolifecell.com



Current Portfolio for expression of mAbs





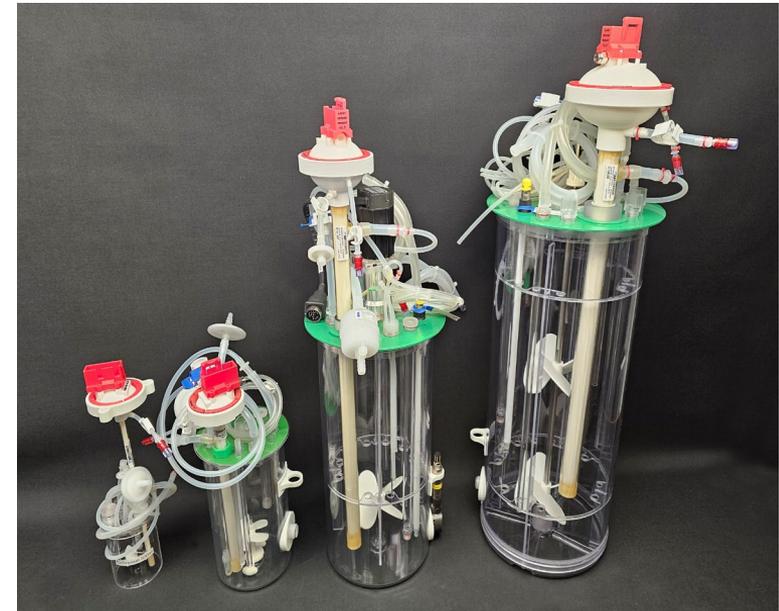
PerfuseCell

Product Portfolio ATF

Groundbreaking 2025 technology solving decades of well-known troublesome processing in just few steps:

- **Avoid HFF fouling** – low broth velocity for harvest and sequential higher velocity for HFF cleaning
- **Avoid dead volume** – simplified and integrated
- **Avoid cell death** – only HFF cartridge and pump
- **Minimize shear stress** – only HFF cartridge and pump – no Tri-clamps, no hoses, no restrictions

SUBmerged is the future = LASER guided Thalia diaphragm pump integrated with SeptraPor HFF pre-installed into complete Perfusion-Single-Use-Bioreactor





PerfuseCell

Product Portfolio TFF

Groundbreaking 2025 technology solving decades of well-known troublesome processing in just few steps:

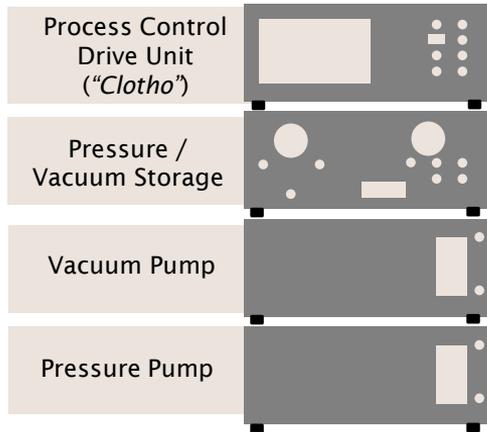
- **Avoid HFF fouling** – low broth velocity for harvest and sequential higher velocity for HFF cleaning
- **Avoid dead volume** – simplified and integrated
- **Avoid cell death** – only HFF cartridge and pump
- Minimize **shear stress** – only HFF cartridge and pump – no Tri-clamps, no hoses, no restrictions

Integrated is the future = LASER guided Clio diaphragm pump integrated with SeptraPor HFF pre-installed into complete Perfusion-Single-Use-Bioreactor

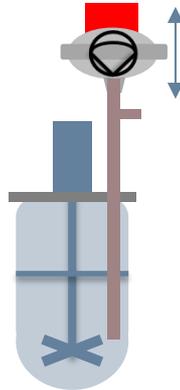


Portfolio in short

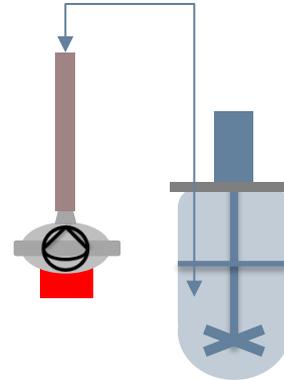
Perfusion Control System



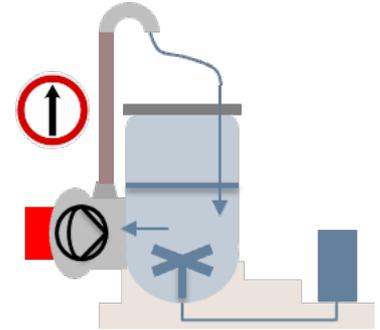
Alternating Flow Perfusion Mode (ATF) - SUBmerged



Alternating Flow Perfusion Mode (ATF)



One-Direction Flow Perfusion Mode (TFF)



Bioreactor + Filter + Pump - All In One -
 → **"Ready-to-Use" Perfusion Solution!**

0.25L - 3L - 13L - 30L Vessel Volumes at present

All components are scalable - will be available in larger sizes



Diaphragm Single-Use-Pump (SUP) series 39

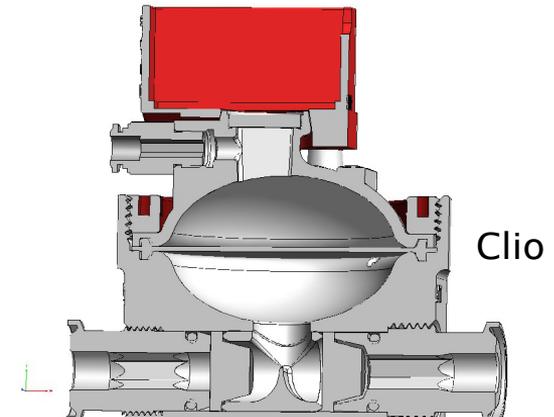
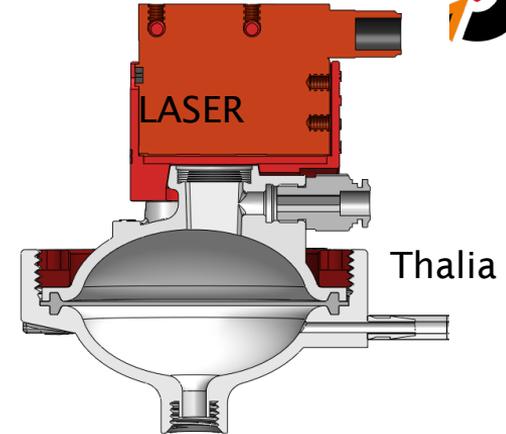
The inventions facilitate upstream perfusion cultivation and secure a single Hollow-Fiber-Filter (HFF) stays clean for the entire process.

Two variants of the LASER guided SUPs available:

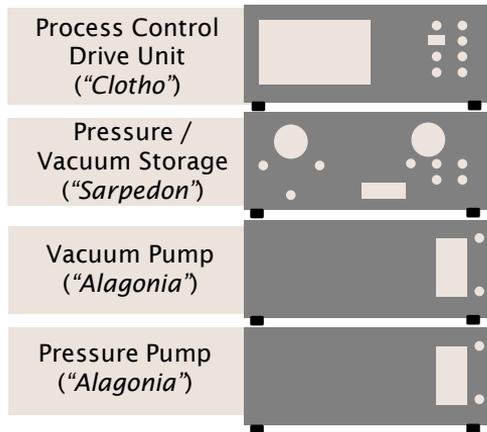
- **ATF** operation method – Alternating-Tangential-Flow – named Thalia = A-SUP with no valves
- **TFF** operation method – Tangential-Flow-Filtration – Clio = O-SUP with 2 integrated passive valves for OneWay flow direction

Both Thalia and Clio are Positive Displacement Pumps - benefits:

- Measure in real-time accurately the diaphragm position
- Master any velocity, any number of strokes, any stroke volume
- Need no calibration or mass flow sensor
- Next to no shear stress added to a system
- No spalling of silicone hose particles like from peristaltic pumps
- Scalable from TM60 to TM300 (3 to 30,000 ml/min)

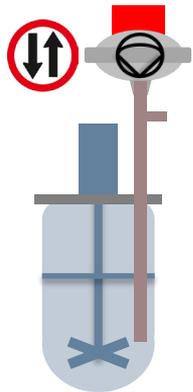


Perfusion Process-Control-System – series 41



- Patented, scalable single-use LASER guided diaphragm pump which perform like the mammalian heart driven by Clotho
- Precise perfusion process information shown online on Clotho (fully selectable number of strokes, stroke volume and velocities)
- Clotho with build-in pressure sensors operate both ATF or TFF
- Vacuum and pressure supply modules optional
- Clotho operate of 1 or 2 Perfusion-SUBs per Drive Unit
- Advanced harvest and HFF cleaning cycles part of Clotho software
- Connectivity to industry SCADA Process-Control-Systems via OPC-UA (e.g. Lucullus, DeltaV, DASware control...etc.)
- Combine Clotho with other modules from Cronus-PCS (e.g. thermal control, agitation, aeration, sensor, peri modules, ..etc.)

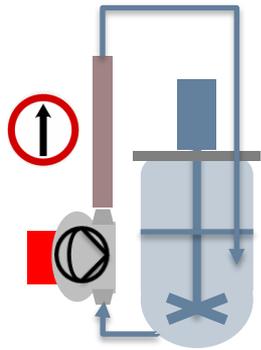
Perfusion Bioreactor “P-SUBmerged” ATF – series 31



CellRetention / ATF
SUBmerged

- The **ultimate solution** for a semi-continuous cultivation process
- Single-Use Thalia diaphragm pump + SeptraPor Hollow-Fiber-Filter (HFF) + Single-Use-Bioreactor + Single-Use-Sensors
- Inverted Thalia pump on top of HFF → **no cell deposits in pump!**
- Integrated Meissner® SeptraPor® HFF SUBmerged directly into the broth
 - Avoid **dead volume** by removal of Tri-clamps, hoses, restrictions
 - **Avoid HFF fouling** – controlled low velocity for harvest and selectable sequential higher velocity for HFF cleaning
 - Reduce **shear force stress** by vastly simplified flow path
- Integrated level sensors for broth volume control
- E-beam irradiated and ready-to-use right out of the box
- Standard or customized configurations (incl. 3rd party bioreactors)
- Patented technology

Perfusion Bioreactor “P-SUB Integrated TFF” series 30

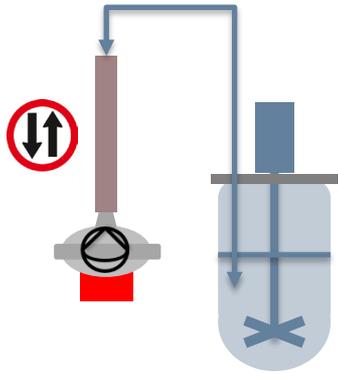


CellMembra / TFF
Integrated

- All components assembled into a single-use Perfusion-SUB solution
- **One-direction flow principle / Tangential-Flow-Filtration (TFF)**
- Clio diaphragm Single-Use-Pump and SeptraPor® HFF integrated with the CellVessel Single-Use-Bioreactor with Single-Use-Sensors
 - Reduce **dead volume** by reducing the use of Tri-clamps, Luer-Loc, hoses, restrictions via total integration
 - **Avoid HFF fouling** – controlled low velocity for harvest and selectable sequential higher velocity for HFF cleaning
 - Reduce **shear force stress** by simplified flow path
- Double bag packed, E-beam irradiated and ready-to-use
- Material & Quality Certificates available on request
- Patented technology



Perfusion Bioreactor “P-SUB External ATF” – series 32 and 34



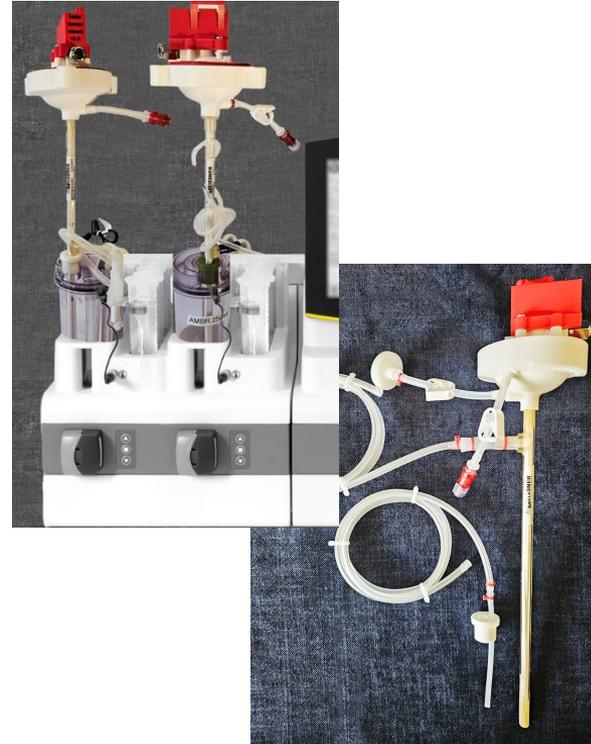
CellRetention / ATF
traditional

- All components assembled into a single-use Perfusion-SUB solution
- **Alternating-Tangential-Flow principle (ATF)**
- Integrated LASER guided diaphragm pump for controlled functionality
- ATF Single-Use Pump (Thalia) + HFF Filter + Bioreactor pre-assembled
 - **Avoid HFF fouling** – controlled low velocity for harvest and selectable sequential higher velocity for HFF cleaning
- E-beam irradiated and ready-to-use right out of the box
- Customized Meissner® HFF integrated with Thalia diaphragm pump
- Standard or customized configurations (incl. 3rd party bioreactors)
- Biocompatible product contact materials
- Material & Quality Certificates available on request
- Patented technology



CellRetention-250-kit for Modular ATF – series 33

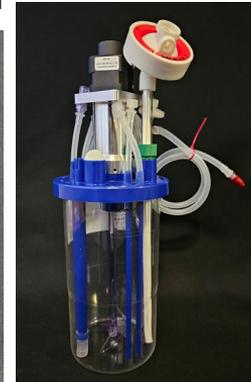
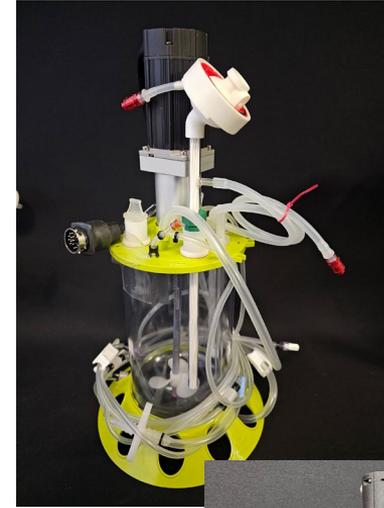
- Upgrade Modular with P-SUBmerged DIY kit
- Customized Meissner® 110 cm² SepraPor® HFF with 0.2 µm pore size
- Inverted Thalia TM60 diaphragm pump driven by Clotho
- Sartorius Modular PCS **add-on kit** for the 250 ml SUB for max flexibility
- **E-beam irradiated** for on-site assembling performed in laminar-flow hood
- Enables fast and flexible conversion of the 250 ml SUB to a true Perfusion-Single-Use-Bioreactor at customer-site when needed
- Find more info on www.perfusecell.com





CellRetention-PG13 ATF kit – series 33

- World only ATF perfusion DIY kit anyone can install and thus create the revolutionizing SUBmerged™ for Process Development.
- Based on a variety of existing STR (Stirred-Tank-Reactor) and SUB (Single-Use-Bioreactor) sizes from 250 ml to 5 liter Vessel Volume (VV) with one free PG13.5 port.
- Unique SeptraPor OD12 mm HFF, pore size 0.2 μm available in 110, 170, 340 cm^2 surface area for these applications unified with Thalia TM60 SUP.



CellRetention-300-DASbox ATF – series 31

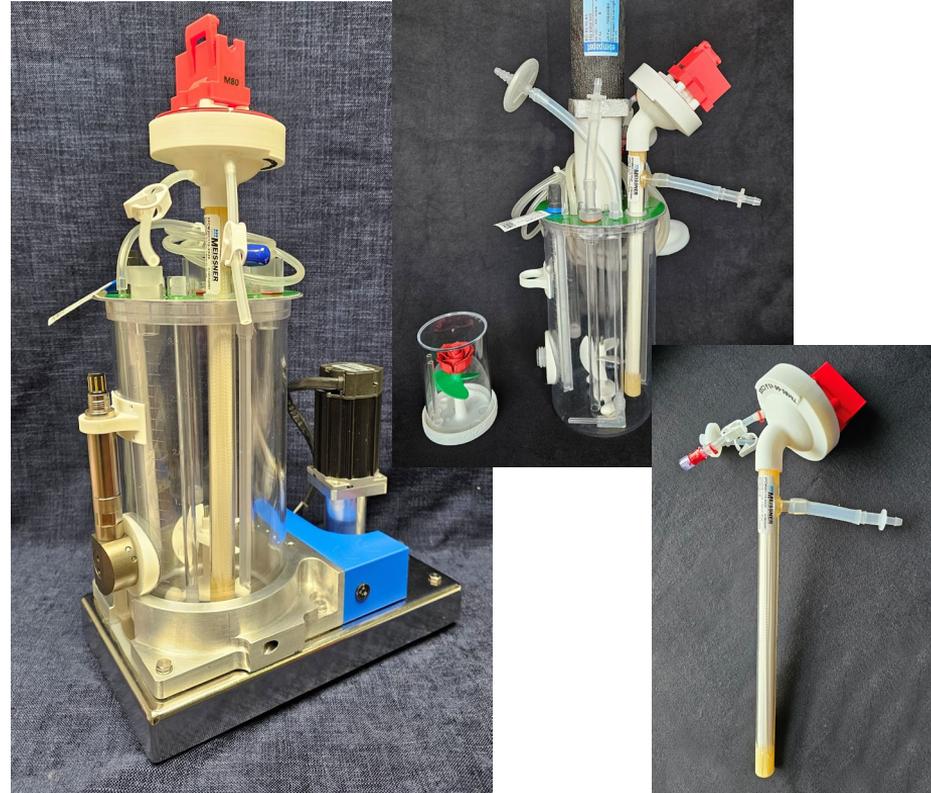
- Heavily customized BioBlu 300 obtained SUBmerged benefits
- Customized Meissner® 110 cm² SeptraPor® HFF with 0.2 µm pore size
- Direct coupled inverted Thalia LASER guided diaphragm pump driven by Clotho
- BioBlu 300 ml SUB OD 76 mm vessel kept standard for direct fit to DASbox
- **E-beam irradiated** for fast installation
- Find more info on www.perfusecell.com





CellRetention-3 SUBmerged ATF – series 31

- Unique P-SUBmerged construction
- Functionality as both Batch-SUB and Perfusion-SUBmerged in the same SUB
- Inverted Thalia TM80 diaphragm pump
- Meissner® 420 cm² SepraPor® HFF
- Fully assembled P-SUB or B-SUB with **add-on-kit** for instant conversion
- **E-beam irradiated** parts for on-site flexible assembly (laminar-flow hood)
- Enables fast conversion of the 3 liter Batch-SUB into a true Perfusion-SUB at customer-site when needed
- Find more info on www.perfusecell.com



CellRetention 13 and 30 SUBmerged ATF – series 31

- Unique fully SUBmerged solution for perfusion
- 13 and 30 liter Vessel Volume shown
- SUBmerged customized Meissner® SepraPor® HFF with 0.2 µm pore size integrated to inverted Thalia LASER guided diaphragm pump driven by Clotho or Lachesis
- Pre-installed DO, pH, level and biomass
- **E-beam irradiated** for fast installation
- Fully customized for connection to a variety of Process-Control-Systems
- Find more info on www.perfusecell.com





CellMembra-300-DASbox – TFF – series 30

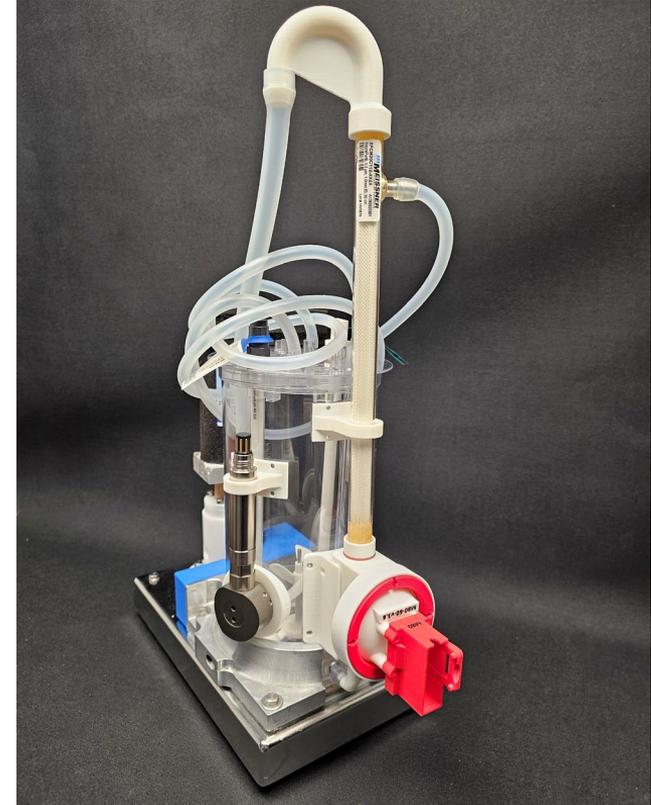
- Unique fully Integrated solution for perfusion
- Customized BioBlu 300 for TFF operation
- Customized Meissner® 110 cm² SeptraPor® HFF with 0.2 µm pore size
- SeptraPor integrated with Thalia LASER guided diaphragm pump driven by Clotho
- Fully customized BioBlu 300 ml SUB for direct fit to DASbox with Maxon RE30 magnetic drive
- **E-beam irradiated** for fast installation
- Hundreds fabricated for worlds oldest pharma company
- Find more info on www.perfusecell.com





CellMembra 3 and 13 TFF – series 30

- Unique fully Integrated solution for perfusion
- Customized Meissner® SepraPor® HFF with 0.2 μm pore size
- SepraPor integrated with Thalia LASER guided diaphragm pump driven by Clotho
- Fully customized for direct fit to a variety of Process-Control-Systems
- Pre-installed DO, pH, level and biomass
- **E-beam irradiated** for fast installation
- Shown mounted in Heating-Support-Foot on Magnetic-Stirrer-Table with servo motor behind
- Find more info on www.perfusecell.com





Thank you for your attention!

Do you have questions?

www.perfusecell.com



PerfuseCell